

From: Shannon Anderson
To: [Jim Ruby](#); [Jay Gilbertz](#)
Subject: RE: Scanned from a Xerox Multifunction Device
Date: Wednesday, September 27, 2017 12:59:53 PM

Thanks, Jim

From: Jim Ruby [mailto:jim.ruby@wyo.gov]
Sent: Wednesday, September 27, 2017 12:59 PM
To: Shannon Anderson; Jay Gilbertz
Subject: Fwd: Scanned from a Xerox Multifunction Device

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Jim

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**BEFORE THE ENVIRONMENTAL QUALITY COUNCIL
STATE OF WYOMING**

IN RE BROOK MINE APPLICATION)	DOCKET 17-4802
)	
TFN 6 2-025)	FINDINGS OF FACT,
)	CONCLUSIONS OF LAW,
)	AND ORDER

*Final
Draft
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I. APPEARANCES

The final contested case hearing in this matter occurred before the Environmental Quality Council (Council) on May 22 through 26, 2017, in Sheridan, Wyoming, and concluded on June 7 and 8, 2017, in Cheyenne, Wyoming.

Present for the Council during all or portions of the hearing was Chairman and Hearing Officer Dr. David Bagley, Vice-Chairman Meghan Lally, and Council members Tim Flitner, Nick Agopian, and Deb Baumer. Council members Rich Fairservis and Megan Degenfelder recused themselves from the proceeding because of conflicts. Council member Megan Degenfelder attended a portion of the hearing, however, she recused herself from the proceeding on June 6, 2017.

Present at the hearing for Petitioner, Brook Mine (Brook), was Thomas L. Sansonetti, Isaac N. Sutphin, and Jeffrey S. Pope from Holland & Hart LLP. Present at the hearing for the Wyoming Department of Environmental Quality (DEQ) was Andrew J. Kuhlman and James M. LaRock from the Wyoming Attorney General's Office. Present at the hearing for the Powder River Basin Resource Council (Powder River) was Shannon R. Anderson. Present at the hearing for Big Horn Coal and Lighthouse Resources (Big Horn) was Lynn Boomgaarden and Clayton H. Gregersen from Crowley Fleck PLLP. Present at the hearing for Mary Brezik-Fisher and David Fisher (Fishers) was Jay A. Gilbertz from Yonkee & Toner, LLP.

Testifying on behalf of Brook was Jeff Barron and Kenneth Woodring. Testifying on behalf of the DEQ was Bjarne Kristiansen, Matt Kunze, Muthu Kuchanur, PhD, and Doug Emme. Testifying on behalf of Big Horn was Jordan Sweeney and Paul Gerlach. Testifying on behalf of Powder River was Anton Bocek, John Buyok, Gillian Malone, Gennaro Marino, PhD, PE, DGE, Brooke Collins, Carol Bilbrough, Sue Spencer, and Mickel Wireman. Testifying on behalf of the Fishers was Mary Brezik-Fisher.

The following exhibits were admitted into evidence: DEQ exhibits 1 through 36; Brook exhibits 1, 2, and 7 through 14, and D15; Big Horn exhibits 1 through 19; Powder River exhibits 1 through 90, 93D, 94D, 95D; and Fishers exhibits 1 through 26, and 27D.

Following the final hearing, the parties submitted post hearing briefs and proposed findings of fact and conclusions of law. After reviewing the post-hearing filings, the Council deliberated and decided this matter on August 1, 2017, in Cheyenne. At that time, the hearing was officially closed.

Due to the length of the hearing, some of the Council members were not able to be present for the entire hearing and live testimony. However, each Council member participating in this matter listened to all the testimony by attending the in-person hearing or watching the video recordings of the hearing or read the testimony contained in the transcript or a combination of both.

The Council, having heard and considered all the evidence in this case and being fully advised, pursuant to the Wyoming Administrative Procedure Act, Wyo. Stat. Ann. § 16-3-110, finds and concludes as follows:

II. JURISDICTION

This case arises from petitions for hearing (also referred to as requests or appeals) from several interested persons to Brook's application for a coal surface mining permit. After its examination and review, the DEQ concluded that Brook's permit application contained no deficiencies and was "suitable for publication" under Wyoming Statute § 35-11-406(h). Brook subsequently published notice of its application under § 35-11-406(j). As allowed by section 406(k), several interested persons filed written objections to Brook's application and requested an informal conference with the DEQ director. The director denied those requests.

After the denial, three interested persons, Big Horn, Powder River, and the Fishers (sometimes collectively referred to as the objectors) timely filed petitions for hearing before this Council under section 406(k). Under that section, the Council was required to hold a contested case hearing in accordance with the Wyoming Administrative Procedure Act—the Council did so. Following the contested case, the Council is required to issue findings of fact and a decision on the application within sixty days after the final hearing—the ultimate decision being whether Brook's permit application should be granted. Wyo. Stat. Ann. § 35-11-406(p). This matter is properly before the Council and it has jurisdiction over this matter and the parties.

III. PRELIMINARY MATTERS

A. Brook's motions to dismiss

Brook filed three motions to dismiss requesting the Council dismiss the objectors' petitions for a contested case suggesting they were untimely. Brook claimed the objectors were required to file their petitions for a contested case with the Council within thirty days after the last publication date and at the same time that they requested an informal conference with the DEQ director. The

objectors argue the opposite. The Council agrees with the objectors. Wyoming Statute § 35-11-406(k) and the DEQ's rules of practice and procedure do not support Brook's position that the petitions were untimely.

The objectors, within thirty days after the last publication date, timely filed their written objections to Brook's application and at the same time requested informal conferences with the director. There is no requirement in statute or rule that requires the objectors to file simultaneous requests for a contested case with the Council at the time they request an informal conference. Such an interpretation is non-sensical and would lead to an absurd result as it would require objectors to file a request for a contested case with the Council prior to knowing whether an informal conference will be held and, if so, the outcome of the conference. If the conference was successful, there would be no need for a contested case. The Legislature could not have intended such a result.

In this case, the objectors timely filed requests for an informal conference with the DEQ director. The director denied those requests and immediately forwarded the matter to the Council on January 30, 2017, although no objector had filed a petition for a contested case. The Council initially accepted jurisdiction over Brook's application (docket #17-4801) but after reviewing the pleadings and hearing oral argument, the Council dismissed that case on February 22, 2017. The Council determined that it did not have jurisdiction over Brook's application because no objector had officially requested a contested case before the Council.

Following the Council's order of dismissal, the objectors filed petitions for a contested case, the latest being filed on February 24, 2017. Although there may be some ambiguity in the statutes and rules on when an objector must file a request for a contested case if their request for

an informal conference is denied, it certainly is not as Brook suggests. The Council concluded that the objectors timely filed their petitions with the Council and found that this matter is properly before it.

As part of its motion filed against Big Horn, Brook also argued that Big Horn's petition should be dismissed because Big Horn allegedly contracted away its right to appeal Brook's permit application. That issue is a private dispute between Big Horn and Brook and the Council will not enter that dispute—Big Horn was authorized to file its petition with the Council.

Last, as part of its motion filed against Powder River, Brook asked the Council to dismiss the portion of Powder River's petition requesting the Council remand the matter to the director to hold an informal conference. The Council does not have the authority to remand the matter to the director to hold an informal conference, a duty that is purely discretionary.

As a result, Brook's motions to dismiss are denied. However, because the Council does not have the authority to remand the matter to the director to hold an informal conference, the Council grants Brook's motion to dismiss the portion of Powder River's petition requesting the Council remand the matter to the director to hold an informal conference.

B. DEQ's motion to dismiss

The DEQ also filed a motion to dismiss the portion of Powder River's petition requesting the Council remand the matter to the director to hold an informal conference. As stated earlier, the Council does not have the authority to order the director to hold an informal conference, a duty that is purely discretionary. The Council agreed with the DEQ and dismissed the portion of Powder River's appeal requesting the Council remand the matter to the director to hold an informal conference. The DEQ's motion to dismiss is granted.

IV. STATEMENT OF THE CASE/ISSUES AND CONTENTIONS

This case arises under Wyo. Stat. Ann. § 35-11-406(p) which requires the Council to issue findings of fact and a decision on Brook's permit application following a contested case. The objectors are challenging Brook's mine application permit. They argue that Brook's application contains deficiencies and that Brook has not met its burden of proof required under Wyo. Stat. Ann. § 35-11-406(n). Conversely, DEQ and Brook argue that Brook's application was "technically adequate" and was "suitable for publication" under Wyo. Stat. Ann. § 35-11-406(h). They argue that the application contains no deficiencies.

Although there is a dispute about the role of the Council in this matter, this dispute centers on whether Brook has met its burden of proof by affirmatively demonstrating that its application is in compliance with section 406(n).

Wyoming Statute § 35-11-406(n) states:

(n) **The applicant for a surface coal mining permit has the burden of establishing that his application is in compliance with this act and all applicable state laws. No surface coal mining permit shall be approved unless the applicant affirmatively demonstrates and the administrator finds in writing:**

- (i) The application is accurate and complete;
- (ii) The reclamation plan can accomplish reclamation as required by this act;
- (iii) The proposed operation has been designed to prevent material damage to the hydrologic balance outside the permit area;

(iv) The area proposed to be mined is not included within an area designated unsuitable for surface coal mining pursuant to W.S. 35-11-425, within an area where mining is prohibited pursuant to section 522(e) of P.L. 95-87 [30 U.S.C. § 1272(e)], or within an area as to which an administrative proceeding has commenced pursuant to W.S. 35-11-425, the operator making the permit application demonstrates that, prior to January 1, 1977, he has made

substantial legal and financial commitments in relation to the operation for which he is applying for a permit;

(v) The proposed operation would:

(A) Not interrupt, discontinue, or preclude farming on alluvial valley floors that are irrigated or naturally subirrigated, but, excluding undeveloped range lands which are not significant to farming on said alluvial valley floors and those lands as to which the administrator finds that if the farming that will be interrupted, discontinued or precluded is of such small acreage as to be of negligible impact on the farm's agricultural production; or

(B) Not materially damage the quantity or quality of water in surface or underground water systems that supply these alluvial valley floors. Paragraph (n)(v) of this section shall not affect those surface coal mining operations which in the year preceding August 3, 1977, produced coal in commercial quantities, and were located within or adjacent to alluvial valley floors or had obtained specific permit approval by the administrator to conduct surface coal mining operations within said alluvial valley floors. If coal deposits are precluded from being mined by this paragraph, the administrator shall certify to the secretary of the interior that the coal owner or lessee may be eligible for participation in a coal exchange program pursuant to section 510(b)(5) of P.L. 95-87 [30 U.S.C. § 1260(b)(5)].

(vi) If the area proposed to be surface coal mined contains prime farmland, the operator has the technological capability to restore such mined area, within a reasonable time, to equivalent or higher levels of yield as nonmined prime farmland in the surrounding area under equivalent levels of management and can meet the soil reconstruction standards of this act and the regulations promulgated pursuant thereto;

(vii) The schedule provided in paragraph (a)(xiv) of this section indicates that all surface coal mining operations owned or controlled by the applicant are currently in compliance with this act and all laws referred to in paragraph (a)(xiv) of this section or that any violation has been or is in the process of being corrected to the satisfaction of the authority, department or agency which has jurisdiction over the violation.

Wyo. Stat. Ann. § 35-11-406(n)(emphasis added).

V. FINDINGS OF FACT¹

1. On October 31, 2014, Brook submitted to DEQ's Land Quality Division (the Division) an application for a permit to mine coal. Brook's permit application proposed to mine coal in an area about eight miles north of Sheridan, Wyoming adjacent to the Tongue River. *Transcript – Kristianson testimony*, pp. 49-52. Most of the mine would lie north of the Tongue River and Interstate 90, with the southwestern portion of the permit area sitting adjacent to the Tongue River. *DEQ Exh. 12; Transcript – Kristianson testimony*, p. 49.
2. The permit area encompasses an area approximately 4,500 acres. *DEQ Exh 1; Transcript – Kristianson testimony*, p. 50.
3. The proposed mine would annually produce about two million tons of coal. *Transcript – Kristianson testimony*, pp. 276-77. The mine has a predicted life of 12 to 13 years. *Transcript – Kristianson testimony*, p. 51.
4. Adjacent to the proposed coal mine are many private landowners, including many homeowners within one-half mile of the proposed mine boundary. *Transcript – Enune testimony*, pp. 584, 594.
5. Brook's permit application consisted of 12 volumes. *Transcript – Kristianson testimony*, p. 61; *DEQ Exhs. 1 through 12.*
6. The Division determined that the application was "complete", under Wyo. Stat. Ann. § 35-11-406(e) on November 3, 2014. *Transcript – Kristianson testimony*, p. 52.

¹ To the extent opinions or testimony is cited as the basis for a finding of fact, the Council has resolved any conflicts or dispute between testimony of others in favor of the cited testimony or opinion.

7. The Division then began its technical review and comment process. The application had six rounds of comments and responses between the Division and Brook before the Division ultimately determined that the application was “technically adequate” and “suitable for publication” under Wyo. Stat. Ann. § 35-11-406(h). *DEQ Exh. 34; Transcript – Kristianson testimony, pp. 45, 52, 58-60.*

8. The Division determined in December 2016 that the application was “technically adequate” and “suitable for publication.” The Division determined that Brook satisfied the Division’s comments and concerns and the application had met all the statutory and regulatory requirements. *Transcript – Kristianson testimony, pp. 52-53, 59-60.*

9. The application permit was published as required under Wyo. Stat. Ann. § 35-11-406(j). *Transcript – Kristianson testimony, p. 53.*

10. In making its decision that the application contained no deficiencies, was “suitable for publication” and “technically adequate”, the Division failed to produce or create a cumulative hydrologic impact assessment (CHIA). *Transcript – Kunze testimony, pp. 413, 420, 436-437.*

11. A CHIA is a document that is produced by the Division for certain types of coal permitting actions. The CHIA takes an intensive look at surface and groundwater quality and quantity within the coal mine area. *Transcript – Kunze testimony, p. 413.*

12. The CHIA is necessary and required to support the findings required to be made under Wyo. Stat. Ann. § 35-11-406(n), specifically whether the proposed mine operation has been designed to prevent material damage to the hydrologic balance outside the permit area and whether the proposed operation will not materially damage the quantity or quality of water in surface or underground water systems that supply the alluvial valley floors. The CHIA is necessary before

the Division can approve a mine permit application. *Transcript – Kunze testimony, pp. 413-415, 427, 436-437, 444.*

13. A CHIA is typically produced and finalized prior to the end of the permit application comment period which enables the public to review it and make comments, if necessary. However, for the Brook application, the Division did not produce or create a CHIA and the public did not have an opportunity to review it or comment on it. *Transcript – Kunze testimony, pp. 423-426.*

14. In addition to not creating the CHIA, the administrator did not make any written findings required under Wyo. Stat. Ann. § 35-1-406(n).

15. Brook first published its permit application on December 27, 2016. *Transcript – Kristianson testimony, p. 53.*

16. Between December 27, 2016, and January 27, 2017, the Division received twenty public comments relating to the permit application. Of those twenty comments, fourteen were objections to Brook's permit application.

17. Those objections challenged many parts of Brook's permit application, including Brook's analysis of alluvial valley floors, blasting, bonding, probable hydrologic consequences, reclamation, and subsidence. *Big Horn Exh 3; Fisher Exh. 26; PRBRC Exhs. 1, 2, 5, 9, and 10.*

18. Upon review of all the objections, the Division still found Brook's application was "technically adequate." *Transcript – Kristianson testimony, pp. 196-197.*

19. The objectors requested that the DEQ director hold an informal conference to decide their objections. *Big Horn Exh 3; Fisher Exh. 26; PRBRC Exh. 1.*

20. The DEQ director exercised his discretion and denied the requests to hold an informal conference.

21. The objectors timely requested a contested case before the EQC.

22. Based upon Brook's application, generally, mining will proceed moving westward from the east side of the proposed permit area. The first area to be mined is called the TR-1 trench and it is located in the southeast corner of the proposed permit area. *DEQ Exh. 12; Transcript – Kristianson testimony, pp. 121-122.*

23. The proposed mine would predominately use a method known as "highwall mining," which is similar to auger mining and regulated as such. *DEQ Exh. 12; Transcript – Kristianson testimony, pp. 50, 117-119.*

24. Highwall mining begins by digging a box cut down to the coal seam. A remotely-operated highwall miner unit then mines tunnels up to 2,000 feet into panels of the exposed coal seam perpendicular to the trench. Walls or webs or pillars of coal are left unmined between the tunnel to provide support and prevent subsidence, with wider barrier pillars periodically placed to offer extra safety between sets of tunnels. The mine plan estimates that this method will recover 40% to 65% of the coal. *Transcript – Kristianson testimony, pp. 50-51, 118-120, 125-126; transcript – Barron testimony, pp. 654-656, 819.*

25. The overburden in the TR-1 mining area is geologically and hydrologically unique and can be distinguished from the overburden in the proposed permit area outside the TR-1 mining area. The TR-1 area overburden is composed of previously mined backfill material and is saturated with groundwater. *DEQ Exh. 5; Transcript – Kristianson testimony, pp. 205, 211-212, 214.*

26. In order to gather data as to the geology in the proposed mine area, including overburden geology, Brook conducted a drilling program consisting of a series of drill holes across the proposed permit area. *DEQ Exh. 5; Transcript – Kristianson testimony*, pp. 87, 91.

27. Brook did not conduct drill hole testing in the TR-1 mining area, nor did it conduct drill hole testing in any part of the approximately 360 acres comprising the SE1/4 of Section 15 and the NE1/4 of Section 22, Township 57 North, Range 84 West. The permit application contains no geologic data from the distinct overburden within these lands. *DEQ Exh. 5; Transcript – Kristianson testimony*, pp. 210-211.

28. Brook's permit application does not distinguish the TR-1 area overburden, and does not include specific geologic characterization or identification of the TR-1 area overburden, including its geologic strata, nature, structural geology, lithology, thickness, or other factors that may influence mining or reclamation activities. *Transcript – Kristianson testimony*, pp. 209-211.

29. The permit application does not characterize any part of the overburden within the proposed permit area as a "potential hydrogeologic unit," and concedes that Brook installed no groundwater monitor wells and conducted no aquifer tests in any part of the overburden. *DEQ Exh. 6.*

30. The permit application lacks required information as to the TR-1 overburden and its groundwater saturation, and the permit application inaccurately characterizes all overburden within the proposed permit area as dry. *Transcript – Kristianson testimony*, pp. 214-217.

31. Brook's application fails to describe groundwater in the TR-1 area overburden. The permit application contains no site-specific data regarding groundwater location, quantity, quality, lithology, or thickness, or its recharge, storage, or discharge characteristics within the TR-1 area

overburden. *Transcript – Kristianson testimony, p. 212; transcript – Barron testimony pp. 717, 720.*

32. The permit application contains no description or assessment of the hydrologic impacts of the proposed mining operations to the groundwater in the TR-1 overburden, and provides no plan whereby Brook will monitor the hydrologic impacts of the proposed mining operations on groundwater in the TR-1 area overburden. *DEQ Exhs. 5, 12; Transcript – Barron testimony, p. 717.*

33. Brook used a groundwater model to support its permit application.

34. The groundwater model was designed to analyze the potential cumulative hydrological effects of the project and simulate the regional groundwater impacts from the proposed mining operation. *DEQ Exh. 12.*

35. The hydrological data used in the groundwater model was limited to observation points, monitor wells and pumping tests, and private well information obtained from the State Engineer's Office database. None of these data sources provide information as to the unique textual and hydraulic characteristics of the saturated backfill in the TR-1 area overburden. *DEQ Exh. 12, Big Horn Exh. 9; Transcript – Kuchanur testimony, p. 513.*

36. There are approximately 357 domestic stock wells within three miles of the permit application boundary. The application does not discuss or explain what happens to the water in these wells if the coal is dewatered. *Transcript – Wireman testimony, pp. 1344, 1365.*

37. Drawdown in some of these wells are predicted to be as much as twenty-five feet. *Transcript – Kuchanur testimony, pp. 540-543.* Drawdowns in these wells could be significant for the wells and their productivity. *Transcript – Kuchanur testimony, pp. 542-43.*

38. The hydrology in and around the permit application boundary is complex.

Transcript – Kristianson testimony, p. 303.

39. The hydrologic review and assessment contained only one pump test in the far eastern portion of the permit application area. No aquifer testing was performed in the rest of the permit area. Only two site specific hydraulic conductivity values were obtained over the entire permit area. Hydraulic conductivity measures the rate at which water flows in an aquifer – it is a measurement of the degree of interconnected porosity. *Transcript – Wireman testimony, pp. 1354-55, 1360.*

40. The hydrologic review and assessment only used one porosity value or hydraulic conductivity value for the entire permit area which cannot account for the heterogeneity or diversity of the geology in the permit area. *Transcript – Wireman testimony, pp. 1354-55; Transcript – Kuchanur testimony, pp. 535-537.* The area is geologically fractured and highly variable. *Transcript – Kuchanur testimony, p. 535.*

41. There are no monitoring wells in the Tongue River. *Transcript – Kuchanur testimony, p. 539*

42. The Tongue River alluvium is an important aquifer for the region. *Transcript – Kuchanur testimony, p. 539.*

43. Using only one porosity value for the entire permit area fails to take into account seasonal changes which can alter direction of flow, velocity of flow and quantity of flow to a particular area. *Transcript – Wireman testimony, p. 1355.*

44. Inadequate testing and data collection was done on the overburden, underburden, Tongue River alluvium and Slater Creek alluvium to make scientific predictions about hydrologic impacts. *Transcript – Wireman testimony, pp. 1361, 1363, 1435-36.*

45. No monitoring or baseline wells were used to establish the baseline water in the Tongue River alluvium. *Transcript – Wireman testimony, pp. 1364-1365.*

46. The groundwater aquifer assessment contains no discussion of vertical intervals or lithology which affect the potentially impacted domestic wells. *Transcript – Wireman testimony, p. 1367.*

47. The assessment of the hydrology in the permit application area is inadequate. *Transcript – Wireman testimony, pp. 1372-73.*

48. Because of the inadequate hydrology assessment, it is premature to come to a decision of whether Brook's proposed operation has been designed to prevent material damage to the hydrologic balance outside the permit area. *Transcript – Wireman testimony, pp. 1373, 1398-1400, 1439, 1443.* Brook's application does not contain the information necessary to affirmatively demonstrate that material damage to the hydrological balance outside the permit area will be prevented. *Transcript – Wireman testimony, pp. 1398-1400, 1442-1443.*

49. The hydrologic studies done by Brook so far along with the other available data do not provide a sound scientific basis from which it can be concluded that the mining will not materially damage the quantity or quality of water in surface of underground water systems that supply alluvial valley floors that are within the mine boundary or within one-half mile of the proposed mine boundary. *Transcript – Wireman testimony, pp. 1399-1401, 1441-1443, 1439.*

50. There have been inadequate studies and testing done to draw any scientific conclusions as to the long-term risk of subsidence at the permit area. *Transcript – Marino testimony, pp. 1200, 1246.*

51. The deficiencies and lack of a subsidence plan were explained by Dr. Marino. 52. The permit application does not provide sufficient information to provide a meaningful review with respect to subsidence potential. *Transcript – Marino testimony, pp. 1237, 1284-85.*

53. Appropriate data was not collected to do a site-specific assessment of the strength and stability of the roof, floor, and pillar materials at the permit area. *Transcript – Marino testimony, pp. 1211, 1228-1229.*

54. The subsidence control plan exhibits a lack of geomechanical understanding of the long-term and short-term stability of the mine. *Transcript – Marino testimony, p. 1228.*

55. There is insufficient information or data in the permit application and very limited analysis of subsidence risk in the documents such that the subsidence potential cannot be assessed. *Transcript – Marino testimony, p. 1228.*

56. The calculation in the mine plan improperly used coal strength data for bituminous coal rather than the sub-bituminous coal which exists at the site. *Transcript – Marino testimony, pp. 1226-1227, 1234, 1247.*

57. Complete subsidence control plans are typically stamped by a professional engineer and such plan is part of the permit application. *Transcript – Marino testimony, pp. 1238-1239.*

58. The mine plan is not complete due to the lack of proper testing and analysis to determine the risk of subsidence due to mining activities. *Transcript – Marino testimony, p. 1244.*

59. Brook admitted that the studies and work suggested by Dr. Marino are necessary steps for a proper mine subsidence plan. *Transcript – Barron testimony, pp. 674-675.* However, Brook did not perform those studies or work as part of its subsidence control plan. *Transcript – Barron testimony, pp. 1532-33.* Brook chose not to perform the necessary engineering work in the permit application for permitting efficiency purposes. *Transcript – Barron testimony, pp. 1532-1535.*

60. Brook plans to do the necessary engineering work Dr. Marino suggests as part of the ground control plan. *Transcript – Barron testimony, pp. 1532-1533.*

61. The risk of subsidence and subsidence control have not yet properly been studied or assessed.

62. Brook's blasting plan allows Brook to blast sunrise to sunset every day of the year. *Transcript – Emme testimony, pp. 586, 593.*

63. It would be reasonable to place restrictions on the blasting schedule due to the number of houses nearby the permit area, however, no restrictions have been placed on the blasting schedule. *Transcript – Emme testimony, p. 639.*

64. There are no reasonable limits on the blasting schedule in the mine plan.

VI. CONCLUSIONS OF LAW

A. Principles of Law

65. Paragraphs 1 through 64 of the findings of fact are fully incorporated herein.

66. Wyoming Statute § 35-11-406(b) states, in part, that:

(b) . . . The mining plan and reclamation plan shall include the following:

. . .

(ii) Plans for surface gradient to a contour suitable for proposed use after reclamation is completed and proposed method of accomplishment;

...

(xvii) A blasting plan which shall outline the procedures and standards by which the operator of a surface coal mine will meet the provisions of W.S. 35-11-415(b)(xi);

(xviii) For surface coal mining operations, a plan to minimize the disturbance to the prevailing hydrologic balance at the minesite and in associated offsite areas and to the quality and quantity of water in surface and ground water systems both during and after mining operations and during reclamation. This paragraph does not alter the authority granted under any other section of this act with respect to requirements for maintaining the hydrologic balance in the minesite, or associated offsite areas, or other mining operations[.]

Wyo. Stat. Ann. § 35-11-406(b)(ii), (xvii), and (xviii).

67. Wyoming Statute § 35-11-406(e) states that:

(e) The administrator shall notify the applicant within sixty (60) days of submission of the application whether or not it is complete. If the administrator deems the application incomplete, he shall so advise and state in writing to the applicant the information required. All items not specified as incomplete at the end of the first sixty (60) day period shall be deemed complete for the purposes of this subsection.

Wyo. Stat. Ann. § 35-11-406(e).

68. Wyoming Statute § 35-11-406(g) states that:

(g) After the application is determined complete, the applicant shall publish a notice of the filing of the application once each week for two (2) consecutive weeks in a newspaper of general circulation in the locality of the proposed mining site.

Wyo. Stat. Ann. § 35-11-406(g).

69. Wyoming Statute § 35-11-406(h) states that:

(h) The administrator shall review the application and unless the applicant requests a delay advise the applicant in writing within one hundred fifty (150) days from the date of determining the application is complete, that it is suitable for

publication under subsection (j) of this section, that the application is deficient or that the application is denied. All reasons for deficiency or denial shall be stated in writing to the applicant. All items not specified as being deficient at the end of the first one hundred fifty (150) day period shall be deemed complete for the purposes of this subsection. After this period, for noncoal permits, the administrator shall not raise any item not previously specified as being deficient unless the applicant in subsequent revisions significantly modifies the application. If the applicant submits additional information in response to any deficiency notice, the administrator shall review such additional information within thirty (30) days of submission and advise the applicant in writing if the application is suitable for publication under subsection (j) of this section, that the application is still deficient or that the application is denied.

Wyo. Stat. Ann. § 35-11-406(h).

70. Wyoming Statute § 35-11-406(j) states that:

(j) The applicant shall cause notice of the application to be published in a newspaper of general circulation in the locality of the proposed mining site once a week for four (4) consecutive weeks commencing within fifteen (15) days after being notified by the administrator. The notice shall contain information regarding the identity of the applicant, the location of the proposed operation, the proposed dates of commencement and completion of the operation, the proposed future use of the affected land, the location at which information about the application may be obtained, and the location and final date for filing objections to the application. For initial applications or additions of new lands the applicant shall also mail a copy of the notice within five (5) days after first publication to all surface owners of record of the land within the permit area, to surface owners of record of immediately adjacent lands, and to any surface owners within one-half (½) mile of the proposed mining site. The applicant shall mail a copy of the application mining plan map within five (5) days after first publication to the Wyoming oil and gas commission. Proof of notice and sworn statement of mailing shall be attached to and become part of the application.

Wyo. Stat. Ann. § 35-11-406(j).

71. Wyoming Statute § 35-11-406(k) states that:

(k) Any interested person has the right to file written objections to the application with the administrator within thirty (30) days after the last publication of the above notice. For surface coal mining operations, the director may hold an informal conference if requested and take action on the application in accordance with the department's rules of practice and procedure, with the right of appeal to the council which shall be heard and tried de novo. A conference shall be held if

the director determines that the nature of the complaint or the position of the complainants indicates that an attempt to informally resolve the disputes is preferable to a contested case proceeding. An informal conference or a public hearing shall be held within twenty (20) days after the final date for filing objections unless a different period is stipulated to by the parties. The council or director shall publish notice of the time, date and location of the hearing or conference in a newspaper of general circulation in the locality of the proposed operation once a week for two (2) consecutive weeks immediately prior to the hearing or conference. The hearing shall be conducted as a contested case in accordance with the Wyoming Administrative Procedure Act, and right of judicial review shall be afforded as provided in that act.

Wyo. Stat. Ann. § 35-11-406(k).

72. Wyoming Statute § 35-11-406(n) states:

(n) The applicant for a surface coal mining permit has the burden of establishing that his application is in compliance with this act and all applicable state laws. No surface coal mining permit shall be approved unless the applicant affirmatively demonstrates and the administrator finds in writing:

(i) The application is accurate and complete;

(ii) The reclamation plan can accomplish reclamation as required by this act;

(iii) The proposed operation has been designed to prevent material damage to the hydrologic balance outside the permit area;

(iv) The area proposed to be mined is not included within an area designated unsuitable for surface coal mining pursuant to W.S. 35-11-425, within an area where mining is prohibited pursuant to section 522(e) of P.L. 95-87 [30 U.S.C. § 1272(e)], or within an area under review for this designation under an administrative proceeding, unless in such an area as to which an administrator proceeding has commenced pursuant to W.S. 35-11-425, the operator making the permit application demonstrates that, prior to January 1, 1977, he has made substantial legal and financial commitments in relation to the operation for which he is applying for a permit;

(v) The proposed operation would:

(A) Not interrupt, discontinue, or preclude farming on alluvial valley floors that are irrigated or naturally subirrigated, but, excluding undeveloped range lands which are not significant to farming on said alluvial valley

Findings of Fact, Conclusions of Law, and Order

Docket 17-4802

Page 20 of 29

floors and those lands as to which the administrator finds that if the farming that will be interrupted, discontinued or precluded is of such small acreage as to be of negligible impact on the farm's agricultural production; or

(B) Not materially damage the quantity or quality of water in surface or underground water systems that supply these alluvial valley floors. Paragraph (n)(v) of this section shall not affect those surface coal mining operations which in the year preceding August 3, 1977, produced coal in commercial quantities, and were located within or adjacent to alluvial valley floors or had obtained specific permit approval by the administrator to conduct surface coal mining operations within said alluvial valley floors. If coal deposits are precluded from being mined by this paragraph, the administrator shall certify to the secretary of the interior that the coal owner or lessee may be eligible for participation in a coal exchange program pursuant to section 510(b)(5) of P.L. 95-87 [30 U.S.C. § 1260(b)(5)].

(vi) If the area proposed to be surface coal mined contains prime farmland, the operator has the technological capability to restore such mined area, within a reasonable time, to equivalent or higher levels of yield as nonmined prime farmland in the surrounding area under equivalent levels of management and can meet the soil reconstruction standards of this act and the regulations promulgated pursuant thereto;

(vii) The schedule provided in paragraph (a)(xiv) of this section indicates that all surface coal mining operations owned or controlled by the applicant are currently in compliance with this act and all laws referred to in paragraph (a)(xiv) of this section or that any violation has been or is in the process of being corrected to the satisfaction of the authority, department or agency which has jurisdiction over the violation.

Wyo. Stat. Ann. § 35-11-406(n).

73. Wyoming Statute § 35-11-406(p) states that:

(p) The director shall render a decision on the application within thirty (30) days after completion of the notice period if no informal conference or hearing is requested. If an informal conference is held, all parties to the conference shall be furnished with a copy of the final written decision of the director issuing or denying the permit within sixty (60) days of the conference. If a hearing is held, the council shall issue findings of fact and a decision on the application within sixty (60) days after the final hearing. The director shall issue or deny the permit no later than fifteen (15) days from receipt of any findings of fact and decision of the environmental quality council.

74. Chapter 19, Section 2. Required Studies.

(a) In addition to other information required by the Act and these regulations, all surface coal mining permit application shall contain:

(i) A determination of the projected result of proposed surface coal mining and reclamation operations, both on and off the mine site, which may reasonably be expected to change the quantity or quality of the surface and groundwater; the surface and groundwater flow, timing and availability, the surface and groundwater quality under seasonal flow conditions, including dissolved and suspended solids; the effect of acid-forming and toxic material on surface and groundwaters; the stream channel conditions; and the aquatic habitat in the permit area and other affected areas. This information shall be in sufficient detail to enable the Administrator to determine the probable cumulative hydrologic impacts on surface and groundwater systems including the impacts resulting from the proposed operation and their interaction with the impact of all anticipated mining upon all affected hydrologic systems. Anticipated mining shall be projected over the life of the operation, and shall include all other existing coal mining operations, any proposed coal mining operation for which a permit application has been filed and all proposed operations required to meet diligent development requirements for leased federal coal where mine development and geological information is available. The assessment of the probable cumulative hydrologic impacts shall be sufficient to make the determination of W.S. § 35-11-406(n)(iii).

DEQ Rules, Land Quality – Coal, Chapter 19: Required Studies for Surface Coal Mining Permit Applications and Assistance for Such Studies, Section 2.

75. Chapter 19, Section 3. Assistance for the Studies and Investigations.

(a) For the purpose of the determination required by Section 2(a)(i) of this Chapter, hydrologic information on the general area prior to mining may be obtained from an appropriation Federal or State agency. The Administrator shall not make a determination of completeness nor approve or deny an application until such information is available, or until it is otherwise voluntarily submitted by the applicant.

DEQ Rules, Land Quality – Coal, Chapter 19: Required Studies for Surface Coal Mining Permit Applications and Assistance for Such Studies, Section 3.

76. Chapter 2, Section 5 Mine Plan.

(a) In addition to that information required by W.S. § 35-11-406(b), each application for a surface coal mining permit shall contain:

(x) Probable hydrologic consequences determination (PHC). A determination of the PHC of the proposed operation on the hydrologic regime and the quantity and quality of surface water and groundwater systems within the permit area and the general area consistent with the information required in Chapter 19, Section 2 of these regulations. The PHC determination shall be based on baseline hydrologic, geologic and other information collected for the permit application and may include data statistically representative of the site. The determination shall specifically address potential adverse hydrologic consequences and describe preventative and remedial measures.

DEQ Rules, Land Quality – Coal, Chapter 2: Permit Application Requirements, Section 5.

77. Chapter 7, Section 2. Environmental Protection Performance Standards Applicable to Underground Mining Operations.

(a) Performance standards applicable to underground coal mining operations:

(iii) Underground mining activities shall be planned and conducted so as to prevent subsidence from causing material damage to structures, the land surface, and groundwater resources.

DEQ Rules, Land Quality – Coal, Chapter 7: Underground Coal Mining Permit Application Content Requirements, Section 2.

78. When analyzing the language of a statute, the “paramount consideration is the legislature’s intent as reflected in the plain and ordinary meaning of the words used in the statute.” *Horse Creek Conservation Dist. v. State ex rel. Wyo. Att’y Gen.*, 2009 WY 143, ¶ 14, 221 P.3d 306, 312 (Wyo. 2009) (citing *Krenning v. Heart Mountain Irrigation Dist.*, 2009 WY 11, ¶ 9, 200 P.3d 774, 778 (Wyo. 2009)). “A statute is clear and unambiguous if its wording is such that reasonable persons are able to agree on its meaning with consistency and predictability.” *Id.* “When a statute is sufficiently clear and unambiguous, we give effect to the plain and ordinary meaning

of the words and do not resort to the rules of statutory construction.” *Cheyenne Newspapers, Inc. v. Building Code Bd. of App. of City of Cheyenne*, 2010 WY 2, ¶ 9, 222 P.3d 158, 162 (Wyo. 2010) (quoting *BP Am. Prod. Co. v. Dep’t of Revenue*, 2005 WY 60, ¶ 15, 112 P.3d 596, 604 (Wyo. 2005)).

79. In this case, Brook has the burden of proof and it must affirmatively demonstrate compliance with section 406(n).

B. Applications of Principles of Law

80. The Council finds and concludes that it has jurisdiction over this matter under Wyo. Stat. Ann. § 35-1-406(k) and (p).

81. Based upon the evidence and testimony during the hearing, the Council finds and concludes that it cannot approve the permit application for several reasons: 1) the administrator has not made his required written determinations and findings under section 406(n); 2) Brook has failed to meet its burden under subsections 406(n)(i), (iii), and (v); and 3) the permit application is deficient under section 406(b) and the DEQ’s rules.

I. Wyoming Statute § 35-11-406(n) applies

82. The parties disagree about whether section 406(n) applies to this proceeding. Both DEQ and Brook contend that section 406(n) is not applicable, while the objectors assert it is. Brook and the DEQ allege that the Council is only authorized to determine whether the application was “technically adequate” and “suitable for publication” under section 406(h). They assert that the findings in section 406(n) are only made by the administrator after the Council makes its determination of whether the application was “technically adequate” and “suitable for

publication.” They contend that the Council is authorized to only review the permit application under 406(a) and (b) and the DEQ’s rules, nothing more. The Council disagrees.

83. Section 406(n) is unambiguous. Only one plausible and reasonable interpretation exists—in this proceeding Brook is required to affirmatively demonstrate and the administrator must have found in writing the requirements outlined in subsection (n).

84. This interpretation is supported by the Council’s long-standing interpretation of subsection (n). In past mining permit application disputes, the Council has determined that (n) applies and has required that the applicant affirmatively demonstrate and the administrator find in writing compliance with section 406(n).

85. The Wyoming Supreme Court has affirmed the Council’s long-standing interpretation. In *Grams v. Environmental Quality Council*, the Court, in reviewing the Council’s decision to grant a mining permit, stated “[i]t is true that the burden of proof rests upon the applicant to show that the application is in compliance with applicable law. § 35-11-406(n). The record reveals that AMAX recognized this in its prehearing memorandum, as did the EQC when it stated in its final conclusion of law that ‘AMAX Coal Company has met its burden of proof demonstrating that the Eagle Butte Mine is in compliance with W.S. § 35-11-406(n), and all other applicable state laws.’” *Grams v. Environmental Quality Council*, 730 P.2d 784, 789 (Wyo. 1986).

86. Brook agreed with the Council’s position when this case began. In its prehearing memorandum, Brook stated “[t]he Act requires that a permit applicant proves it has complied with the Act and all applicable state laws. Wyo. Stat. Ann. 35-11-406(n). The applicant must show that the application is “accurate and complete,” “the reclamation plan can accomplish reclamation as required by this Act,” “the proposed operation has been designed to prevent material damage to

the hydrologic balance outside the permit area," and that the area proposed to be mined is not designated as unsuitable for surface coal mining. *Id.* at (n)-(iv).'" "Here Brook has proven to DEQ that its permit application meets all of these requirements as demonstrated by DEQ deeming the application technically adequate and suitable for publication."

87. The Council finds and concludes that section 406(n) applies to this proceeding and that Brook has the burden of proof.

II. The administrator failed to make the required findings under section 406(n), therefore, the Council is without authority to approve the permit

88. It is undisputed that the administrator has failed to make any of the required written findings mandated by section 406(n).

89. Because the findings required by section 406(n) have not been made, the Council cannot make a finding that the application should be approved. Under subsection (n), the administrator is required to make his written findings at the time that he determines whether the application is "suitable for publication" under Wyo. Stat. Ann. § 35-11-406(h). These findings must be completed prior to the Council considering whether the permit application should be approved.

90. By the administrator failing to comply with 406(n), the Council finds and concludes that it is without authority to approve the permit. The findings in 406(n) are a prerequisite or condition precedent to the Council considering whether the application should be approved. As a result, the Council finds and concludes that at this time, it is without authority to approve the permit application as a matter law.

III. Brook has failed to meet its burden under subsections 406(n)(i), (iii), and (v)

91. It is undisputed that the CHIA is not completed. The CHIA is necessary for the administrator to make his findings under subsections 406(n)(iii) and (v). Without the CHIA, the Council finds and concludes that it is unknown whether the proposed operation has been designed to prevent material damage to the hydrologic balance outside the permit area and determine whether the proposed operation would not materially damage the quantity or water in surface or underground water systems that supply the alluvial valley floors.

92. The Council finds and concludes that because the CHIA is not done, Brook cannot and has not met its burden under subsections 406(n)(iii) and (v).

93. In addition, the Council finds and concludes that Brook's permit application is not accurate or complete because the CHIA has not been produced.

94. Further, the Council finds and concludes that based upon the evidence and testimony provided during the hearing, Brook has not affirmatively demonstrated that its proposed operation has been designed to prevent material damage to the hydrologic balance outside the permit area or that it would not materially damage the quantity or quality of water in surface or underground water systems that supply the alluvial valley floors. The Council finds the testimony of Mr. Wireman persuasive and credible and concludes that the hydrologic studies done by Brook so far along with other data show that Brook has failed to meet its burden under subsections 406(n)(iii) and (v). Because Brook has failed to affirmatively demonstrate the requirements under subsections 406(n)(iii) and (v), the Council further finds and concludes that Brook's application is not accurate and complete under (n)(i).

95. The Council further finds the testimony of Dr. Marino persuasive and credible and concludes that Brook's subsidence plan is incomplete. Brook has failed to affirmatively demonstrate that its application is complete and accurate under subsection 406(n)(i).

IV. Brooks' permit application is also deficient under section 406(b)

96. The Council finds and concludes that Brook's permit application is also deficient in at least three areas: 1) hydrology; 2) subsidence; and 3) blasting plan.

97. The Council finds and concludes that Brook has not met its burden that there will not be material damage to the hydrologic balance at the minesite and outside the permit area under section 406(b)(xviii). In addition, Brook has not met its burden that the alluvial valley floors will not be damaged. The Council believes that more information and planning is needed, therefore, the application is deficient.

98. Although the subsidence control plan concludes that there will be no subsidence, the Council finds and concludes that it is based on insufficient analysis of the site. The Council does not believe the conclusion is merited based on the evidence. As a result, the Council finds and concludes that Brook has not met its burden under section 406(b) and Chapter 7, section 2 of the DEQ's rules, therefore, the application is deficient.

99. The Council finds and concludes that the blasting plan does not contain reasonable limits on the blasting schedule and therefore it is deficient. The Council concludes that reasonable limits shall be placed on the blasting schedule.

VII. ORDER AND DECISION

IT IS HEREBY ORDERED that Brook's permit application is not approved.

IT IS FURTHER ORDERED that Brook shall complete and revise its permit application and then resubmit it to the Division for the administrator to perform his mandatory section 406(n) determinations which are required to be performed prior to the permit application being declared "suitable for publication" under section 406(h). Further, upon the Division receiving the revised permit application, the Division shall also conduct its review and analysis required under section 406(h) and determine whether the application is "suitable for publication", and if so, the revised application shall then be republished for public comment under section 406(j) with the opportunity for interested persons to file written objections under section 406(k).

ENTERED this ____ day of September, 2017.

Dr. David M. Bagley, Hearing Officer
Environmental Quality Council

From: Jim Ruby
To: [Shannon Anderson](#)
Cc: [Jay Gilbertz](#)
Subject: Re: Scanned from a Xerox Multifunction Device
Date: Wednesday, September 27, 2017 12:55:17 PM

I will try again. Sorry

On Wed, Sep 27, 2017 at 12:54 PM, Shannon Anderson <sanderson@powderriverbasin.org> wrote:

Thanks, Jim – looks like it scanned wrong so we're missing the even pages.

Shannon Anderson

Powder River Basin Resource Council

[934 N. Main St., Sheridan, WY 82801](#)

[307-672-5809](#) cell: [307-763-0995](#)

sanderson@powderriverbasin.org

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Follow us at <https://twitter.com/PRBResCouncil>

From: Jim Ruby [mailto:jim.ruby@wyo.gov]
Sent: Wednesday, September 27, 2017 12:51 PM
To: Shannon Anderson; Jay Gilbertz
Subject: Fwd: Scanned from a Xerox Multifunction Device

The parties that were present at the hearing wanted to have copies of the order even though it hadn't been signed. So attached is your copy of the unsigned order. The Order should be signed and available no later than tomorrow.

Have a great week and weekend.

Jim

----- Forwarded message -----
From: <WYO_Equalization@wyo.gov>
Date: Wed, Sep 27, 2017 at 12:43 PM

Subject: Scanned from a Xerox Multifunction Device

To: "Ruby, Jim" <jim.ruby@wyo.gov>

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Device Name: WC5955

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From: Shannon Anderson
To: [Jim Ruby](#); [Jay Gilbertz](#)
Subject: RE: Scanned from a Xerox Multifunction Device
Date: Wednesday, September 27, 2017 12:54:46 PM

Thanks, Jim – looks like it scanned wrong so we're missing the even pages.

Shannon Anderson
Powder River Basin Resource Council
934 N. Main St., Sheridan, WY 82801
307-672-5809 cell: 307-763-0995
sanderson@powderriverbasin.org
Join us at www.powderriverbasin.org
Follow us at <https://twitter.com/PRBResCouncil>

From: Jim Ruby [mailto:jim.ruby@wyo.gov]
Sent: Wednesday, September 27, 2017 12:51 PM
To: Shannon Anderson; Jay Gilbertz
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Device Name: WC5955

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Act and may be disclosed to third parties.

From: Jim Ruby
To: [Shannon Anderson](#); [Jay Gilbertz](#)
Subject: Fwd: Scanned from a Xerox Multifunction Device
Date: Wednesday, September 27, 2017 12:50:57 PM
Attachments: [Scanned from a Xerox Multifunction Device.pdf](#)

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Have a great week and weekend.

Jim

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Date: Wed, Sep 27, 2017 at 12:43 PM
Subject: Scanned from a Xerox Multifunction Device
To: "Ruby, Jim" <jim.ruby@wyo.gov>

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Device Name: WC5955

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**BEFORE THE ENVIRONMENTAL QUALITY COUNCIL
STATE OF WYOMING**

IN RE BROOK MINE APPLICATION)	DOCKET 17-4802
)	
TFN 6 2-025	)	FINDINGS OF FACT,
	)	CONCLUSIONS OF LAW,
	)	AND ORDER

*Final
Draft
Unissued*

I. APPEARANCES

The final contested case hearing in this matter occurred before the Environmental Quality Council (Council) on May 22 through 26, 2017, in Sheridan, Wyoming, and concluded on June 7 and 8, 2017, in Cheyenne, Wyoming.

Present for the Council during all or portions of the hearing was Chairman and Hearing Officer Dr. David Bagley, Vice-Chairman Meghan Lally, and Council members Tim Flitner, Nick Agopian, and Deb Baumer. Council members Rich Fairservis and Megan Degenfelder recused themselves from the proceeding because of conflicts. Council member Megan Degenfelder attended a portion of the hearing, however, she recused herself from the proceeding on June 6, 2017.

Present at the hearing for Petitioner, Brook Mine (Brook), was Thomas L. Sansonetti, Isaac N. Sutphin, and Jeffrey S. Pope from Holland & Hart LLP. Present at the hearing for the Wyoming Department of Environmental Quality (DEQ) was Andrew J. Kuhlman and James M. LaRock from the Wyoming Attorney General's Office. Present at the hearing for the Powder River Basin Resource Council (Powder River) was Shannon R. Anderson. Present at the hearing for Big Horn Coal and Lighthouse Resources (Big Horn) was Lynn Boomgaarden and Clayton H. Gregersen from Crowley Fleck PLLP. Present at the hearing for Mary Brezik-Fisher and David Fisher (Fishers) was Jay A. Gilbertz from Yonkee & Toner, LLP.

II. JURISDICTION

This case arises from petitions for hearing (also referred to as requests or appeals) from several interested persons to Brook's application for a coal surface mining permit. After its examination and review, the DEQ concluded that Brook's permit application contained no deficiencies and was "suitable for publication" under Wyoming Statute § 35-11-406(h). Brook subsequently published notice of its application under § 35-11-406(j). As allowed by section 406(k), several interested persons filed written objections to Brook's application and requested an informal conference with the DEQ director. The director denied those requests.

After the denial, three interested persons, Big Horn, Powder River, and the Fishers (sometimes collectively referred to as the objectors) timely filed petitions for hearing before this Council under section 406(k). Under that section, the Council was required to hold a contested case hearing in accordance with the Wyoming Administrative Procedure Act—the Council did so. Following the contested case, the Council is required to issue findings of fact and a decision on the application within sixty days after the final hearing—the ultimate decision being whether Brook's permit application should be granted. Wyo. Stat. Ann. § 35-11-406(p). This matter is properly before the Council and it has jurisdiction over this matter and the parties.

III. PRELIMINARY MATTERS

A. Brook's motions to dismiss

Brook filed three motions to dismiss requesting the Council dismiss the objectors' petitions for a contested case suggesting they were untimely. Brook claimed the objectors were required to file their petitions for a contested case with the Council within thirty days after the last publication date and at the same time that they requested an informal conference with the DEQ director. The

an informal conference is denied, it certainly is not as Brook suggests. The Council concluded that the objectors timely filed their petitions with the Council and found that this matter is properly before it.

As part of its motion filed against Big Horn, Brook also argued that Big Horn's petition should be dismissed because Big Horn allegedly contracted away its right to appeal Brook's permit application. That issue is a private dispute between Big Horn and Brook and the Council will not enter that dispute—Big Horn was authorized to file its petition with the Council.

Last, as part of its motion filed against Powder River, Brook asked the Council to dismiss the portion of Powder River's petition requesting the Council remand the matter to the director to hold an informal conference. The Council does not have the authority to remand the matter to the director to hold an informal conference, a duty that is purely discretionary.

As a result, Brook's motions to dismiss are denied. However, because the Council does not have the authority to remand the matter to the director to hold an informal conference, the Council grants Brook's motion to dismiss the portion of Powder River's petition requesting the Council remand the matter to the director to hold an informal conference.

B. DEQ's motion to dismiss

The DEQ also filed a motion to dismiss the portion of Powder River's petition requesting the Council remand the matter to the director to hold an informal conference. As stated earlier, the Council does not have the authority to order the director to hold an informal conference, a duty that is purely discretionary. The Council agreed with the DEQ and dismissed the portion of Powder River's appeal requesting the Council remand the matter to the director to hold an informal conference. The DEQ's motion to dismiss is granted.

substantial legal and financial commitments in relation to the operation for which he is applying for a permit;

(v) The proposed operation would:

(A) Not interrupt, discontinue, or preclude farming on alluvial valley floors that are irrigated or naturally subirrigated, but, excluding undeveloped range lands which are not significant to farming on said alluvial valley floors and those lands as to which the administrator finds that if the farming that will be interrupted, discontinued or precluded is of such small acreage as to be of negligible impact on the farm's agricultural production; or

(B) Not materially damage the quantity or quality of water in surface or underground water systems that supply these alluvial valley floors. Paragraph (n)(v) of this section shall not affect those surface coal mining operations which in the year preceding August 3, 1977, produced coal in commercial quantities, and were located within or adjacent to alluvial valley floors or had obtained specific permit approval by the administrator to conduct surface coal mining operations within said alluvial valley floors. If coal deposits are precluded from being mined by this paragraph, the administrator shall certify to the secretary of the interior that the coal owner or lessee may be eligible for participation in a coal exchange program pursuant to section 510(b)(5) of P.L. 95-87 [30 U.S.C. § 1260(b)(5)].

(vi) If the area proposed to be surface coal mined contains prime farmland, the operator has the technological capability to restore such mined area, within a reasonable time, to equivalent or higher levels of yield as nonmined prime farmland in the surrounding area under equivalent levels of management and can meet the soil reconstruction standards of this act and the regulations promulgated pursuant thereto;

(vii) The schedule provided in paragraph (a)(xiv) of this section indicates that all surface coal mining operations owned or controlled by the applicant are currently in compliance with this act and all laws referred to in paragraph (a)(xiv) of this section or that any violation has been or is in the process of being corrected to the satisfaction of the authority, department or agency which has jurisdiction over the violation.

Wyo. Stat. Ann. § 35-11-406(n)(emphasis added).

7. The Division then began its technical review and comment process. The application had six rounds of comments and responses between the Division and Brook before the Division ultimately determined that the application was “technically adequate” and “suitable for publication” under Wyo. Stat. Ann. § 35-11-406(h). *DEQ Exh. 34; Transcript – Kristianson testimony, pp. 45, 52, 58-60.*

8. The Division determined in December 2016 that the application was “technically adequate” and “suitable for publication.” The Division determined that Brook satisfied the Division’s comments and concerns and the application had met all the statutory and regulatory requirements. *Transcript – Kristianson testimony, pp. 52-53, 59-60.*

9. The application permit was published as required under Wyo. Stat. Ann. § 35-11-406(j). *Transcript – Kristianson testimony, p. 53.*

10. In making its decision that the application contained no deficiencies, was “suitable for publication” and “technically adequate”, the Division failed to produce or create a cumulative hydrologic impact assessment (CHIA). *Transcript – Kunze testimony, pp. 413, 420, 436-437.*

11. A CHIA is a document that is produced by the Division for certain types of coal permitting actions. The CHIA takes an intensive look at surface and groundwater quality and quantity within the coal mine area. *Transcript – Kunze testimony, p. 413.*

12. The CHIA is necessary and required to support the findings required to be made under Wyo. Stat. Ann. § 35-11-406(n), specifically whether the proposed mine operation has been designed to prevent material damage to the hydrologic balance outside the permit area and whether the proposed operation will not materially damage the quantity or quality of water in surface or underground water systems that supply the alluvial valley floors. The CHIA is necessary before

20. The DEQ director exercised his discretion and denied the requests to hold an informal conference.

21. The objectors timely requested a contested case before the EQC.

22. Based upon Brook's application, generally, mining will proceed moving westward from the east side of the proposed permit area. The first area to be mined is called the TR-1 trench and it is located in the southeast corner of the proposed permit area. *DEQ Exh. 12; Transcript – Kristianson testimony, pp. 121-122.*

23. The proposed mine would predominately use a method known as "highwall mining," which is similar to auger mining and regulated as such. *DEQ Exh. 12; Transcript – Kristianson testimony, pp. 50, 117-119.*

24. Highwall mining begins by digging a box cut down to the coal seam. A remotely-operated highwall miner unit then mines tunnels up to 2,000 feet into panels of the exposed coal seam perpendicular to the trench. Walls or webs or pillars of coal are left unmined between the tunnel to provide support and prevent subsidence, with wider barrier pillars periodically placed to offer extra safety between sets of tunnels. The mine plan estimates that this method will recover 40% to 65% of the coal. *Transcript – Kristianson testimony, pp. 50-51, 118-120, 125-126; transcript – Barron testimony, pp. 654-656, 819.*

25. The overburden in the TR-1 mining area is geologically and hydrologically unique and can be distinguished from the overburden in the proposed permit area outside the TR-1 mining area. The TR-1 area overburden is composed of previously mined backfill material and is saturated with groundwater. *DEQ Exh. 5; Transcript – Kristianson testimony, pp. 205, 211-212, 214.*

overburden. *Transcript – Kristianson testimony, p. 212; transcript – Barron testimony pp. 717, 720.*

32. The permit application contains no description or assessment of the hydrologic impacts of the proposed mining operations to the groundwater in the TR-1 overburden, and provides no plan whereby Brook will monitor the hydrologic impacts of the proposed mining operations on groundwater in the TR-1 area overburden. *DEQ Exhs. 5, 12; Transcript – Barron testimony, p. 717.*

33. Brook used a groundwater model to support its permit application.

34. The groundwater model was designed to analyze the potential cumulative hydrological effects of the project and simulate the regional groundwater impacts from the proposed mining operation. *DEQ Exh. 12.*

35. The hydrological data used in the groundwater model was limited to observation points, monitor wells and pumping tests, and private well information obtained from the State Engineer's Office database. None of these data sources provide information as to the unique textual and hydraulic characteristics of the saturated backfill in the TR-1 area overburden. *DEQ Exh. 12, Big Horn Exh. 9; Transcript – Kuchanur testimony, p. 513.*

36. There are approximately 357 domestic stock wells within three miles of the permit application boundary. The application does not discuss or explain what happens to the water in these wells if the coal is dewatered. *Transcript – Wireman testimony, pp. 1344, 1365.*

37. Drawdown in some of these wells are predicted to be as much as twenty-five feet. *Transcript – Kuchanur testimony, pp. 540-543.* Drawdowns in these wells could be significant for the wells and their productivity. *Transcript – Kuchanur testimony, pp. 542-43.*

44. Inadequate testing and data collection was done on the overburden, underburden, Tongue River alluvium and Slater Creek alluvium to make scientific predictions about hydrologic impacts. *Transcript – Wireman testimony, pp. 1361, 1363, 1435-36.*

45. No monitoring or baseline wells were used to establish the baseline water in the Tongue River alluvium. *Transcript – Wireman testimony, pp. 1364-1365.*

46. The groundwater aquifer assessment contains no discussion of vertical intervals or lithology which affect the potentially impacted domestic wells. *Transcript – Wireman testimony, p. 1367.*

47. The assessment of the hydrology in the permit application area is inadequate. *Transcript – Wireman testimony, pp. 1372-73.*

48. Because of the inadequate hydrology assessment, it is premature to come to a decision of whether Brook's proposed operation has been designed to prevent material damage to the hydrologic balance outside the permit area. *Transcript – Wireman testimony, pp. 1373, 1398-1400, 1439, 1443.* Brook's application does not contain the information necessary to affirmatively demonstrate that material damage to the hydrological balance outside the permit area will be prevented. *Transcript – Wireman testimony, pp. 1398-1400, 1442-1443.*

49. The hydrologic studies done by Brook so far along with the other available data do not provide a sound scientific basis from which it can be concluded that the mining will not materially damage the quantity or quality of water in surface of underground water systems that supply alluvial valley floors that are within the mine boundary or within one-half mile of the proposed mine boundary. *Transcript – Wireman testimony, pp. 1399-1401, 1441-1443, 1439.*

59. Brook admitted that the studies and work suggested by Dr. Marino are necessary steps for a proper mine subsidence plan. *Transcript – Barron testimony, pp. 674-675.* However, Brook did not perform those studies or work as part of its subsidence control plan. *Transcript – Barron testimony, pp. 1532-33.* Brook chose not to perform the necessary engineering work in the permit application for permitting efficiency purposes. *Transcript – Barron testimony, pp. 1532-1535.*

60. Brook plans to do the necessary engineering work Dr. Marino suggests as part of the ground control plan. *Transcript – Barron testimony, pp. 1532-1533.*

61. The risk of subsidence and subsidence control have not yet properly been studied or assessed.

62. Brook's blasting plan allows Brook to blast sunrise to sunset every day of the year. *Transcript – Emme testimony, pp. 586, 593.*

63. It would be reasonable to place restrictions on the blasting schedule due to the number of houses nearby the permit area, however, no restrictions have been placed on the blasting schedule. *Transcript – Emme testimony, p. 639.*

64. There are no reasonable limits on the blasting schedule in the mine plan.

VI. CONCLUSIONS OF LAW

A. Principles of Law

65. Paragraphs 1 through 64 of the findings of fact are fully incorporated herein.

66. Wyoming Statute § 35-11-406(b) states, in part, that:

(b) . . . The mining plan and reclamation plan shall include the following:

. . .

publication under subsection (j) of this section, that the application is deficient or that the application is denied. All reasons for deficiency or denial shall be stated in writing to the applicant. All items not specified as being deficient at the end of the first one hundred fifty (150) day period shall be deemed complete for the purposes of this subsection. After this period, for noncoal permits, the administrator shall not raise any item not previously specified as being deficient unless the applicant in subsequent revisions significantly modifies the application. If the applicant submits additional information in response to any deficiency notice, the administrator shall review such additional information within thirty (30) days of submission and advise the applicant in writing if the application is suitable for publication under subsection (j) of this section, that the application is still deficient or that the application is denied.

Wyo. Stat. Ann. § 35-11-406(h).

70. Wyoming Statute § 35-11-406(j) states that:

(j) The applicant shall cause notice of the application to be published in a newspaper of general circulation in the locality of the proposed mining site once a week for four (4) consecutive weeks commencing within fifteen (15) days after being notified by the administrator. The notice shall contain information regarding the identity of the applicant, the location of the proposed operation, the proposed dates of commencement and completion of the operation, the proposed future use of the affected land, the location at which information about the application may be obtained, and the location and final date for filing objections to the application. For initial applications or additions of new lands the applicant shall also mail a copy of the notice within five (5) days after first publication to all surface owners of record of the land within the permit area, to surface owners of record of immediately adjacent lands, and to any surface owners within one-half (½) mile of the proposed mining site. The applicant shall mail a copy of the application mining plan map within five (5) days after first publication to the Wyoming oil and gas commission. Proof of notice and sworn statement of mailing shall be attached to and become part of the application.

Wyo. Stat. Ann. § 35-11-406(j).

71. Wyoming Statute § 35-11-406(k) states that:

(k) Any interested person has the right to file written objections to the application with the administrator within thirty (30) days after the last publication of the above notice. For surface coal mining operations, the director may hold an informal conference if requested and take action on the application in accordance with the department's rules of practice and procedure, with the right of appeal to the council which shall be heard and tried de novo. A conference shall be held if

floors and those lands as to which the administrator finds that if the farming that will be interrupted, discontinued or precluded is of such small acreage as to be of negligible impact on the farm's agricultural production; or

(B) Not materially damage the quantity or quality of water in surface or underground water systems that supply these alluvial valley floors. Paragraph (n)(v) of this section shall not affect those surface coal mining operations which in the year preceding August 3, 1977, produced coal in commercial quantities, and were located within or adjacent to alluvial valley floors or had obtained specific permit approval by the administrator to conduct surface coal mining operations within said alluvial valley floors. If coal deposits are precluded from being mined by this paragraph, the administrator shall certify to the secretary of the interior that the coal owner or lessee may be eligible for participation in a coal exchange program pursuant to section 510(b)(5) of P.L. 95-87 [30 U.S.C. § 1260(b)(5)].

(vi) If the area proposed to be surface coal mined contains prime farmland, the operator has the technological capability to restore such mined area, within a reasonable time, to equivalent or higher levels of yield as nonmined prime farmland in the surrounding area under equivalent levels of management and can meet the soil reconstruction standards of this act and the regulations promulgated pursuant thereto;

(vii) The schedule provided in paragraph (a)(xiv) of this section indicates that all surface coal mining operations owned or controlled by the applicant are currently in compliance with this act and all laws referred to in paragraph (a)(xiv) of this section or that any violation has been or is in the process of being corrected to the satisfaction of the authority, department or agency which has jurisdiction over the violation.

Wyo. Stat. Ann. § 35-11-406(n).

73. Wyoming Statute § 35-11-406(p) states that:

(p) The director shall render a decision on the application within thirty (30) days after completion of the notice period if no informal conference or hearing is requested. If an informal conference is held, all parties to the conference shall be furnished with a copy of the final written decision of the director issuing or denying the permit within sixty (60) days of the conference. If a hearing is held, the council shall issue findings of fact and a decision on the application within sixty (60) days after the final hearing. The director shall issue or deny the permit no later than fifteen (15) days from receipt of any findings of fact and decision of the environmental quality council.

76. Chapter 2, Section 5 Mine Plan.

(a) In addition to that information required by W.S. § 35-11-406(b), each application for a surface coal mining permit shall contain:

(x) Probable hydrologic consequences determination (PHC). A determination of the PHC of the proposed operation on the hydrologic regime and the quantity and quality of surface water and groundwater systems within the permit area and the general area consistent with the information required in Chapter 19, Section 2 of these regulations. The PHC determination shall be based on baseline hydrologic, geologic and other information collected for the permit application and may include data statistically representative of the site. The determination shall specifically address potential adverse hydrologic consequences and describe preventative and remedial measures.

DEQ Rules, Land Quality – Coal, Chapter 2: Permit Application Requirements, Section 5.

77. Chapter 7, Section 2. Environmental Protection Performance Standards Applicable to Underground Mining Operations.

(a) Performance standards applicable to underground coal mining operations:

(iii) Underground mining activities shall be planned and conducted so as to prevent subsidence from causing material damage to structures, the land surface, and groundwater resources.

DEQ Rules, Land Quality – Coal, Chapter 7: Underground Coal Mining Permit Application Content Requirements, Section 2.

78. When analyzing the language of a statute, the “paramount consideration is the legislature’s intent as reflected in the plain and ordinary meaning of the words used in the statute.” *Horse Creek Conservation Dist. v. State ex rel. Wyo. Att’y Gen.*, 2009 WY 143, ¶ 14, 221 P.3d 306, 312 (Wyo. 2009) (citing *Krenning v. Heart Mountain Irrigation Dist.*, 2009 WY 11, ¶ 9, 200 P.3d 774, 778 (Wyo. 2009)). “A statute is clear and unambiguous if its wording is such that reasonable persons are able to agree on its meaning with consistency and predictability.” *Id.* “When a statute is sufficiently clear and unambiguous, we give effect to the plain and ordinary meaning

publication.” They contend that the Council is authorized to only review the permit application under 406(a) and (b) and the DEQ’s rules, nothing more. The Council disagrees.

83. Section 406(n) is unambiguous. Only one plausible and reasonable interpretation exists—in this proceeding Brook is required to affirmatively demonstrate and the administrator must have found in writing the requirements outlined in subsection (n).

84. This interpretation is supported by the Council’s long-standing interpretation of subsection (n). In past mining permit application disputes, the Council has determined that (n) applies and has required that the applicant affirmatively demonstrate and the administrator find in writing compliance with section 406(n).

85. The Wyoming Supreme Court has affirmed the Council’s long-standing interpretation. In *Grams v. Environmental Quality Council*, the Court, in reviewing the Council’s decision to grant a mining permit, stated “[i]t is true that the burden of proof rests upon the applicant to show that the application is in compliance with applicable law. § 35-11-406(n). The record reveals that AMAX recognized this in its prehearing memorandum, as did the EQC when it stated in its final conclusion of law that ‘AMAX Coal Company has met its burden of proof demonstrating that the Eagle Butte Mine is in compliance with W.S. § 35-11-406(n), and all other applicable state laws.’” *Grams v. Environmental Quality Council*, 730 P.2d 784, 789 (Wyo. 1986).

86. Brook agreed with the Council’s position when this case began. In its prehearing memorandum, Brook stated “[t]he Act requires that a permit applicant proves it has complied with the Act and all applicable state laws. Wyo. Stat. Ann. 35-11-406(n). The applicant must show that the application is “accurate and complete,” “the reclamation plan can accomplish reclamation as required by this Act,” “the proposed operation has been designed to prevent material damage to

III. Brook has failed to meet its burden under subsections 406(n)(i), (iii), and (v)

91. It is undisputed that the CHIA is not completed. The CHIA is necessary for the administrator to make his findings under subsections 406(n)(iii) and (v). Without the CHIA, the Council finds and concludes that it is unknown whether the proposed operation has been designed to prevent material damage to the hydrologic balance outside the permit area and determine whether the proposed operation would not materially damage the quantity or water in surface or underground water systems that supply the alluvial valley floors.

92. The Council finds and concludes that because the CHIA is not done, Brook cannot and has not met its burden under subsections 406(n)(iii) and (v).

93. In addition, the Council finds and concludes that Brook's permit application is not accurate or complete because the CHIA has not been produced.

94. Further, the Council finds and concludes that based upon the evidence and testimony provided during the hearing, Brook has not affirmatively demonstrated that its proposed operation has been designed to prevent material damage to the hydrologic balance outside the permit area or that it would not materially damage the quantity or quality of water in surface or underground water systems that supply the alluvial valley floors. The Council finds the testimony of Mr. Wireman persuasive and credible and concludes that the hydrologic studies done by Brook so far along with other data show that Brook has failed to meet its burden under subsections 406(n)(iii) and (v). Because Brook has failed to affirmatively demonstrate the requirements under subsections 406(n)(iii) and (v), the Council further finds and concludes that Brook's application is not accurate and complete under (n)(i).

VII. ORDER AND DECISION

IT IS HEREBY ORDERED that Brook's permit application is not approved.

IT IS FURTHER ORDERED that Brook shall complete and revise its permit application and then resubmit it to the Division for the administrator to perform his mandatory section 406(n) determinations which are required to be performed prior to the permit application being declared "suitable for publication" under section 406(h). Further, upon the Division receiving the revised permit application, the Division shall also conduct its review and analysis required under section 406(h) and determine whether the application is "suitable for publication", and if so, the revised application shall then be republished for public comment under section 406(j) with the opportunity for interested persons to file written objections under section 406(k).

ENTERED this ____ day of September, 2017.

Dr. David M. Bagley, Hearing Officer
Environmental Quality Council

From: Shannon Anderson
To: [Jim Ruby](#)
Cc: [Jeffrey S. Pope](#); [Isaac Sutphin](#); [Lynne Boomgaarden](#); [Jay Gilbertz](#); [Clayton Gregersen](#); [andrew kuhlmann](#); [James LaRock](#); [ryan schelhaas](#); [Thomas Sansonetti](#)
Subject: RE: Brook Mine decision
Date: Wednesday, September 06, 2017 4:37:21 PM

Thanks for the update, Jim

From: Jim Ruby [mailto:jim.ruby@wyo.gov]
Sent: Wednesday, September 06, 2017 2:13 PM
To: Shannon Anderson
Cc: Jeffrey S. Pope; Isaac Sutphin; Lynne Boomgaarden; Jay Gilbertz; Clayton Gregersen; andrew kuhlmann; James LaRock; ryan schelhaas; Thomas Sansonetti
Subject: Re: Brook Mine decision

Dear Counsel:

There will be a public meeting held when the Order is ready for a vote of the Council. The exact date has not yet been set but the 60th day from the day of the close of the hearing is September 30, 2017. It is anticipated that the Council will meet on or before that date to approve the Order. As soon as the date is set you will be notified.

Jim

On Wed, Sep 6, 2017 at 12:28 PM, Shannon Anderson <sanderson@powderriverbasin.org> wrote:

Dear Jim & Ryan,

I am wondering if you can update the parties on the status of the EQC decision and specifically if there will be a scheduled public meeting for the EQC to vote on and affirm the decision/findings of fact & conclusions of law.

I am just looking at my calendar over the next few weeks and wanted to make sure we are able to schedule something in, if necessary.

Thanks,
Shannon

Shannon Anderson
Powder River Basin Resource Council
934 N. Main St., Sheridan, WY 82801
[307-672-5809](tel:307-672-5809) cell: [307-763-0995](tel:307-763-0995)
sanderson@powderriverbasin.org
Join us at www.powderriverbasin.org
Follow us at <https://twitter.com/PRBResCouncil>

E-Mail to and from me, in connection with the transaction of public business, is subject to the Wyoming Public Records

Act and may be disclosed to third parties.

From: Jim Ruby
To: [Shannon Anderson](#)
Cc: [Jeffrey S. Pope](#); [Isaac Sutphin](#); [Lynne Boomgaarden](#); [Jay Gilbertz](#); [Clayton Gregersen](#); [andrew kuhlmann](#); [James LaRock](#); [ryan schelhaas](#); [Thomas Sansonetti](#)
Subject: Re: Brook Mine decision
Date: Wednesday, September 06, 2017 2:13:27 PM

Dear Counsel:

There will be a public meeting held when the Order is ready for a vote of the Council. The exact date has not yet been set but the 60th day from the day of the close of the hearing is September 30, 2017. It is anticipated that the Council will meet on or before that date to approve the Order. As soon as the date is set you will be notified.

Jim

On Wed, Sep 6, 2017 at 12:28 PM, Shannon Anderson <sanderson@powderriverbasin.org> wrote:

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Thanks,

Shannon

Shannon Anderson

Powder River Basin Resource Council

934 N. Main St., Sheridan, WY 82801

[307-672-5809](tel:307-672-5809) cell: [307-763-0995](tel:307-763-0995)

sanderson@powderriverbasin.org

Join us at www.powderriverbasin.org

Follow us at <https://twitter.com/PRBResCouncil>

From: Shannon Anderson
To: [Jeffrey S. Pope](#); [Isaac Sutphin](#); lboomgaarden@crowleyfleck.com; jgilbertz@yonkeetoner.com; cgregersen@crowleyfleck.com; andrew.kuhlmann@wyo.gov; james.larock@wyo.gov; ryan.schelhaas@wyo.gov; [Jim Ruby](#); [Thomas Sansonetti](#)
Subject: Brook Mine decision
Date: Wednesday, September 06, 2017 12:28:54 PM

Dear Jim & Ryan,

I am wondering if you can update the parties on the status of the EQC decision and specifically if there will be a scheduled public meeting for the EQC to vote on and affirm the decision/findings of fact & conclusions of law.

I am just looking at my calendar over the next few weeks and wanted to make sure we are able to schedule something in, if necessary.

Thanks,
Shannon

Shannon Anderson
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934 N. Main St., Sheridan, WY 82801
307-672-5809 cell: 307-763-0995
sanderson@powderriverbasin.org
Join us at www.powderriverbasin.org
Follow us at <https://twitter.com/PRBResCouncil>

From: Shannon Anderson
To: andrew.kuhlmann@wyo.gov; Nathan@mullinux-inc.com; [Dan Reinke](#); [Jim Ruby](#)
Subject: Beckton 2 Gravel Mine
Date: Tuesday, August 29, 2017 4:13:58 PM
Attachments: [2017 8-29 withdrawal of objections.pdf](#)

Please see the attached. Best, Shannon

Shannon Anderson
Powder River Basin Resource Council
934 N. Main St., Sheridan, WY 82801
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sanderson@powderriverbasin.org
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Shannon Anderson (Wyo. Bar # 6-4402)
Powder River Basin Resource Council
934 N. Main St., Sheridan, WY 82801
(307) 672-5809
sanderson@powderriverbasin.org

**BEFORE THE ENVIRONMENTAL QUALITY COUNCIL
STATE OF WYOMING**

IN RE BECKTON 2 SMALL MINE)
)
TFN 6 6-236) **DOCKET 17-4805**

**POWDER RIVER BASIN RESOURCE COUNCIL’S WITHDRAWAL OF OBJECTIONS
AND REQUEST FOR HEARING**

The Powder River Basin Resource Council (“Resource Council”) hereby withdraws its objections and request for hearing in the above-captioned matter. The Resource Council engaged in a productive conversation with the DEQ and the permit applicant, Mullinax Concrete, this afternoon, and based on representations made at the meeting, our organization no longer wishes to participate in a hearing on the permit application.

Respectfully submitted this 29th day of August, 2017.

/s/ Shannon Anderson
Shannon Anderson
Powder River Basin Resource Council
934 N. Main St., Sheridan, WY 82801
(307) 672-5809
sanderson@powderriverbasin.org

CERTIFICATE OF SERVICE

I hereby certify that on August 29, 2017, I served a copy of the foregoing **WITHDRAWAL OF OBJECTIONS AND REQUEST FOR HEARING** on the following parties by electronic mail, and through the EQC's electronic filing system, which will send a notice of electronic filing to all counsel and parties of record.

Andrew Kuhlmann
Wyoming Attorney General's Office
andrew.kuhlmann@wyo.gov
Attorney for DEQ

Nathan Mullinax
Nathan@mullinax-inc.com

Daniel Reinke
danreinke@vcn.com

/s/Shannon Anderson
Shannon Anderson

From: Wyoming Reporting Services, Inc.
To: ["Jim Ruby"; csvec@hollandhart.com](#); ["Shannon Anderson"](#); ["Lynne Boomgaarden"](#); ["Jenny Wacker"](#); ["Clayton Gregersen"](#)
Subject: Brook Mine, LLC - E-Transcript File Delivery
Date: Wednesday, August 09, 2017 10:01:57 AM
Attachments: [Brook Mine, LLC.ptx](#)
[080117 EQC hrng brook mine.pdf](#)

Please find attached the E-Transcript and PDF of the EQC Hearing taken August 1, 2017 in the matter of Brook Mine.

Thank you,

Melissa DeMartin
Administrative Assistant
Wyoming Reporting Services, Inc.
307-635-4424

<http://info.legalsolutions.thomsonreuters.com/software/ebundle/viewer/default.aspx>

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1 BEFORE THE ENVIRONMENTAL QUALITY COUNCIL

2 STATE OF WYOMING

3 -----

4 IN RE BROOK MINE APPLICATION Docket No. 17-4802

5 -----

6

7 TRANSCRIPT OF HEARING PROCEEDINGS

8

9

10 PURSUANT TO NOTICE duly given to all parties
11 in interest, this matter reconvened for hearing on the
12 1st day of August, 2017, at the approximate hour of
13 3:01 p.m., at the Herschler Building, 122 West 25th
14 Street, Room 1699, Cheyenne, Wyoming, before the Wyoming
15 Environmental Quality Council, with Council Member David
16 Bagley, presiding, Chairperson Meghan Lally, Council
17 Member Tim Flitner, Council Member Deb Baumer and Council
18 Member Nick Agopian in attendance.

19 Mr. Ryan Schelhaas, Wyoming Attorney General's
20 Office, Attorney for the Council; Mr. Jim Ruby, Executive
21 Director to the Council; Mr. Joe Girardin, Business Office
22 Coordinator, were also in attendance.

23

24

25

1 A P P E A R A N C E S

2 For Brook Mine: MR. JEFFREY S. POPE
Attorney at Law
3 HOLLAND & HART, LLP
2515 Warren Avenue
4 Suite 450
Cheyenne, Wyoming 82001-3117

5 For Big Horn Coal MS. LYNNETTE J. BOOMGAARDEN
6 and Lighthouse Attorney at Law
Resources: CROWLEY FLECK PLLP
7 237 Storey Boulevard
Suite 110
8 Cheyenne, Wyoming 82009

9 For PRBRC: MS. SHANNON R. ANDERSON
Attorney
10 POWDER RIVER BASIN RESOURCE COUNCIL
934 North Main Street
11 Sheridan, Wyoming 82801
(Attending remotely)

12 For the Fishers: MR. JAY A. GILBERTZ
13 Attorney at Law
YONKEE & TONER, LLP
14 319 West Dow Street
P. O. Box 6288
15 Sheridan, Wyoming 82801
(Attending remotely)

16 For the DEQ: MR. ANDREW J. KUHLMANN
17 Senior Assistant Attorney General
MR. JAMES M. LAROCK
18 Assistant Wyoming Attorney General
WYOMING ATTORNEY GENERAL'S OFFICE
19 2424 Pioneer Avenue
Cheyenne, Wyoming 82002

20 ALSO PRESENT: MS. JILL MORRISON
21 MR. JEFF BARON
MR. ALAN EDWARDS

22

23

24

25

1 P R O C E E D I N G S

2 (Hearing proceedings commenced

3 3:01 p.m., August 1, 2017.)

4 CHAIRPERSON LALLY: Okay. I will call this
5 meeting to order, and we will enter executive session for
6 legal advice.

7 MR. SCHELHAAS: Can I have motion and
8 second to vote?

9 CHAIRPERSON LALLY: Okay.

10 COUNCIL MEMBER AGOPIAN: I'll move we go
11 into executive session.

12 COUNCIL MEMBER BAUMER: I'll second.

13 MR. SCHELHAAS: For legal advice.

14 COUNCIL MEMBER AGOPIAN: For legal advice.

15 COUNCIL MEMBER BAUMER: I'll second.

16 CHAIRPERSON LALLY: All those in favor?

17 COUNCIL MEMBER DR. BAGLEY: Aye.

18 COUNCIL MEMBER BAUMER: Aye.

19 CHAIRPERSON LALLY: Those opposed. Motion
20 passed.

21 (Hearing proceedings recessed

22 3:01 p.m. to 3:57 p.m.)

23 CHAIRPERSON LALLY: I'll call this meeting
24 back to order.

25 MR. GIRARDIN: We're early, so...

1 CHAIRPERSON LALLY: I said 4:00, but we're
2 all here.

3 COUNCIL MEMBER BAUMER: It's 3:57.

4 CHAIRPERSON LALLY: 3:57. Well it says
5 approximately 4:00 on the agenda. So we will go with that.

6 COUNCIL MEMBER DR. BAGLEY: I guess the
7 question is do we have everybody on the line that needs to
8 be.

9 CHAIRPERSON LALLY: Yeah, is everybody
10 online, Joe?

11 MR. GIRARDIN: I'm broadcasting, so you can
12 go.

13 CHAIRPERSON LALLY: Okay. So first we'll
14 state that we took no action in executive session. And I
15 will call this meeting back to order. It's 4:00 --
16 approximately 4:00, August 1, 2017. Meghan Lally, chair of
17 the EQC. This meeting is being held in room 1699 of the
18 Herschler Building, 122 West 25th Street, Cheyenne,
19 Wyoming.

20 Present today from the council is Tim Flitner,
21 Meghan Lally, Nick Agopian, Deb Baumer and Rich Fairservis
22 [sic].

23 COUNCIL MEMBER DR. BAGLEY: And me. And --

24 CHAIRPERSON LALLY: And Dave Bagley.

25 Also present for the council are Jim Ruby,

1 executive officer, and Joe Girardin, council business
2 coordinator, and Ryan Schelhaas from the Attorney General's
3 Office.

4 I will turn the gavel over to Dr. Bagley at this
5 time as the hearing officer in the Brook matter.

6 COUNCIL MEMBER DR. BAGLEY: Thank you,
7 Madam Chair.

8 Good afternoon. It's 4 p.m., August 1, 2017. I
9 am Dr. David Bagley, the hearing officer in Docket 17-4802
10 in regards Brook Mine, LLC.

11 This meeting is being held in Room 1699 of the
12 Herschler Building, 122 West 25th Street, Cheyenne,
13 Wyoming. Joining me from the council are Tim Flitner,
14 Meghan Lally, Nick Agopian and Deb Baumer. Council Members
15 Fairservis and Degenfelder have recused themselves due to
16 conflicts.

17 Parties present today in person or on the phone
18 are -- and I will do as we've done in previous sessions of
19 this hearing, ask for you to identify yourself when I
20 identify your organization.

21 From Brook Mine, LLC.

22 MR. POPE: Jeff Pope and Carri Svec.

23 COUNCIL MEMBER DR. BAGLEY: Thank you.

24 From DEQ.

25 MR. KUHLMANN: Andrew Kuhlmann and

1 James LaRock.

2 COUNCIL MEMBER DR. BAGLEY: Thank you.

3 Powder River Basin Resource Council.

4 MS. MORRISON: Shannon Anderson is on
5 the --

6 MR. GIRARDIN: Yeah, they can't talk.

7 MS. MORRISON: -- watching, but --

8 MR. GIRARDIN: Yeah, they can't talk.

9 MS. MORRISON: So Jill Morrison is here.

10 COUNCIL MEMBER DR. BAGLEY: Okay. Great.

11 Thank you.

12 Big Horn Coal.

13 MS. BOOMGAARDEN: Lynn Boomgaarden on
14 behalf of Big Horn Coal. Thank you.

15 COUNCIL MEMBER DR. BAGLEY: And on behalf
16 of the Fishers.

17 MR. GIRARDIN: He's online.

18 COUNCIL MEMBER DR. BAGLEY: Jay Gilbertz
19 online.

20 The first thing I need to do is handle the
21 motions to strike that we've received. There was a
22 motion -- DEQ and Brook moved to strike the PRBRC
23 supplemental expert report. And there was also a motion by
24 the Fishers and PRBRC to strike the DEQ comment to proposed
25 permit conditions and Brook Mine's joinder in the DEQ

1 comments.

2 Having reviewed the record, I find that, one, the
3 supplemental expert report should be stricken from the
4 record. The motions of DEQ and Brook are granted. And,
5 two, the DEQ comment on proposed permit conditions and
6 Brook Mine joinder should both be stricken from the record.
7 The motions of the Fishers and PRBRC are granted.

8 I would like to remind legal counsel for DEQ,
9 Brook and PRBRC that the council is authorized under
10 35-11-112(a) (vi) to impose sanctions under Rule 11 of
11 Wyoming Rules of Civil Procedure. And some of the -- the
12 order I thought was very clear that went out. And some of
13 the things these -- all these things being submitted after
14 the fact were just simply inappropriate.

15 At this time I do not recommend that the council
16 impose sanctions, but just to let folks know, please follow
17 the rules as we described them in the order.

18 Now we'll continue on. And I'm going to ask each
19 council member if they've had time to review all the
20 evidence, since not all council members were able to be at
21 all the hearings.

22 Ms. Baumer, have you had sufficient time to
23 review the evidence in this matter?

24 COUNCIL MEMBER BAUMER: I have. I have
25 read the transcripts, reviewed all the evidence, and I'm

1 prepared.

2 COUNCIL MEMBER DR. BAGLEY: Thank you.

3 Mr. Flitner, have you had sufficient time to
4 review the evidence in this matter?

5 COUNCIL MEMBER FLITNER: Yes.

6 COUNCIL MEMBER DR. BAGLEY: Chair Lally,
7 have you had sufficient time to review the evidence in this
8 matter?

9 CHAIRPERSON LALLY: Yes.

10 COUNCIL MEMBER DR. BAGLEY: And I know you
11 were there with me, Mr. Agopian, but I'll ask you anyway.
12 Have you had sufficient time to review the evidence in this
13 matter?

14 COUNCIL MEMBER AGOPIAN: The great fortune
15 of spending 10 days with you, Mr. Bagley.

16 COUNCIL MEMBER DR. BAGLEY: And I also have
17 had sufficient time to review the evidence in this matter.
18 So the council is ready to proceed.

19 Do I have a motion affirming DEQ's decision that
20 the Brook Mine, LLC application was complete and suitable
21 for publication and not deficient under 35-11-406(h) and
22 (j)?

23 COUNCIL MEMBER AGOPIAN: So moved.

24 COUNCIL MEMBER DR. BAGLEY: Do I have a
25 second?

1 CHAIRPERSON LALLY: Second.

2 COUNCIL MEMBER DR. BAGLEY: Thank you.

3 So it's been moved and seconded. And what I'd
4 like to do is provide -- I normally like to go last with my
5 comments, but I'm going to go first, since I'm the hearing
6 officer, so I get to pick who gets to speak.

7 And I only have 30 pages of comments. I felt
8 that after seven days of listening to lawyers, they get a
9 chance to listen to me. No, it's not 30 days [sic]. That
10 was supposed to be a joke. I'm glad somebody laughed.

11 Let me give my comments on this. And then, of
12 course, I will ask every council member for their thoughts
13 and comments, and then we'll circle back around, discuss
14 the -- on the motion -- discussion on the motion.

15 I will vote against the motion. The reason that
16 I will vote against the motion is that application has
17 deficiencies. DEQ determination under 406(h) that the
18 application is suitable for publication was premature.
19 Before I propose a remedy in my comments, I will briefly
20 summarize my reasoning.

21 Based on the evidence I find under 406(n) that
22 Brook Mine has not met their burden to prove this mining
23 operation, one, will adequately provide reclamation. And I
24 am worried specifically about subsidence. Two, that there
25 will not be material damage to the hydrologic balance

1 outside the permit area. Or, three, that alluvial valley
2 floors will not be damaged.

3 But these are 406(n) considerations, and I can
4 hear the objections already, that the council has no
5 authority to consider 406(n). That is hogwash.
6 Determining that an application has no deficiencies under
7 406(h) when a 406(n) determination has not been made is a
8 flaw in the administration of the law. Clearly within the
9 council's authority, as specified in 35-11-112(a)(iii), the
10 council shall conduct hearings in any case contesting the
11 administration or enforcement of any law, rule, regulation,
12 standard or order issued or administered by the Department
13 or any division thereof.

14 I can readily show, but I won't, to save you
15 the -- another boring discussion, but I can readily show
16 that unless 406(n) is considered prior to 406(h)
17 determination, a completely illogical outcome of the law
18 could be achieved. To wit: I could show you is that the
19 director may have to deny a permit that nobody contested
20 solely because the 406(h) determination was made prior to
21 the 406(n) determination. I would also argue that the
22 legislators did not intend for the law to lead to this sort
23 of legal technicality and would expect the administration
24 of the law to be conducted so as to avoid such silliness.
25 Therefore, to avoid illogical outcomes, an application

1 should be considered deficient by definition if the 406(n)
2 determination has not been made.

3 Now, I am not going to push further on 406(n),
4 but I mention it at this point because that will be part of
5 the remedy I propose. So to clean this up legally, for
6 those who would want to object, I can -- based on the
7 evidence, I find under 3-11-406(b), that the Brook Mine
8 application has deficiencies in five areas. The first area
9 is Item 2, plans for surface gradient to a contour suitable
10 for proposed use after reclamation is completed and
11 proposed method of accomplishment. Specifically, the
12 subsidence control plan concludes that there will be no
13 subsidence, but this is based on insufficient analysis of
14 the site. I do not believe that conclusion is merited
15 based on the evidence. Subsidence itself is not forbidden,
16 but how can plans to accomplish a surface gradient contour
17 be developed when the future surface gradient contour does
18 not consider subsidence?

19 The second deficiency is Item 6, an estimate of
20 the total cost of reclaiming the affected lands as outlined
21 in the written proposal computed in accordance with
22 established engineering principles. We heard testimony
23 about reclamation cost estimates for the first year of
24 activity. As I read this part of 406(b), I see the words
25 "total cost of reclaiming affected lands." That I believe

1 is missing.

2 The third deficiency, Item 13. The procedures
3 proposed to avoid constituting a public nuisance,
4 endangering the public safety, human or animal life,
5 property, wildlife and plant life in or adjacent to the
6 permit area. And I'll end it there, that quote.

7 I am -- in particular, I am concerned with
8 traffic generated by the mine. I understand that DEQ does
9 not regulate traffic issues, but unless there's evidence of
10 coordination with WYDOT and the affected county included in
11 the mine plan, I cannot be convinced that there will not be
12 a public nuisance or risk to public safety from the traffic
13 leaving and entering this facility.

14 Fourth deficiency, Item 17, a blasting plan which
15 shall outline the procedures and standards by which the
16 operator of a surface coal mine will meet the provisions of
17 Wyoming Statute 35-11-415(b)(xi). Here I am concerned that
18 no reasonable limits on blasting schedule have been
19 presented in the mine plan. Without those limits in the
20 plan, blasting could occur at any time or day and that
21 seems unacceptable to me.

22 And the fifth deficiency is Item 18. For surface
23 coal mining operations, a plan to minimize the disturbances
24 to the prevailing hydrologic balance at the mine site and
25 in associated off-site areas and to the quality and

1 quantity of water in surface and groundwater systems both
2 during and after mining operations and during reclamation.

3 The evidence DEQ presented predicted that there
4 will be impacts to wells in the area. And some cases with
5 drawdowns on the order of feet. That is potentially
6 enormous impact for the hydrologic balance in a subsurface
7 as complicated as this one. The plan must include
8 additional detail in those areas identified as having the
9 largest potential impacts.

10 Alluvial valley floors fit into this. Alluvial
11 valley floors depend extensively on the hydrologic balance
12 results, and we will see there will be impacts. It was
13 presented in the evidence. More information and planning
14 is needed to address the potential for harm of alluvial
15 valley floors.

16 If you notice a similarity in my five
17 deficiencies to my 406(n) concerns, that is because, in my
18 opinion, the law is logically intended to have 406(n)
19 completed before a 406(h) determination is made. It just
20 does not specifically state that.

21 Arguments were made that a complete application
22 is really all that we need to consider. But the contents
23 of the application cannot have deficiencies as defined in
24 35-11-103(e)(xiv). Arguments have been made that the
25 council should accept the DEQ's determination of no

1 deficiencies in their suitable for publication
2 determination. The other alternatives they have under
3 406(h) were to deny the application or to identify
4 deficiencies themselves.

5 I want to be clear. I highly respect the
6 professionalism and expertise of the DEQ staff. DEQ has
7 done a thorough job reviewing this application. Based on
8 the evidence, though, I disagree with their conclusion that
9 the application was suitable for publication. There are
10 deficiencies, as I have indicated.

11 The evidence indicates, however, that DEQ has not
12 made their 406(n) determination. I don't know why, and I
13 won't speculate. But DEQ does not have the burden of proof
14 under that anyway. Under 406(n) Brook Mine has the burden
15 of proof.

16 Now a couple of other comments before I finally
17 propose my remedy. As I sat through seven days of
18 testimony on this case, I became more and more irritated by
19 the lack of public input in this application process to
20 date. I cannot find any legal requirements and none were
21 brought forward by the parties that require more
22 opportunities for public input. So as far as I can tell,
23 no laws have been broken and everything has been completely
24 legal. But I think common sense has been violated. Many
25 of the concerns raised by the parties could have been

1 readily addressed had Brook Mine held public meetings to
2 provide information and to answer questions during the
3 application process. This would have helped both Brook
4 Mine and DEQ to identify, examine and potentially address
5 areas of potential concern before a formal suitable for
6 publication determination was made. This would have also
7 helped members of the public learn about a new mining
8 method in Wyoming, as well as learn about issues related to
9 blasting, subsidence, hydrologic balances, the things we
10 heard about in the evidence.

11 I am not naive. I know that public information
12 meetings may not have resolved all the concerns, and we
13 probably would still have been in a contested case hearing.
14 But I would have had much more confidence that the concerns
15 had been thoroughly examined and evaluated, and also there
16 would be documentation of what Brook Mine and DEQ did
17 specifically to address concerns raised by the public.
18 Brook Mine would have basically built the material
19 necessary to achieve its burden of proof as part of this
20 application process through that. Instead, I found that
21 the process was opaque to the public and evidence is not
22 available at this time to address the deficiencies that I
23 have identified.

24 So, finally, now, my proposed remedy. Again,
25 this is just mine. You'll hear from other council members.

1 One, I recommend that the council members -- that we vote
2 down the current motion. Two, I would propose that we have
3 a motion that the application has deficiencies under
4 35-11-406(h) and is returned to DEQ to address the
5 deficiencies. A list of deficiencies will be contained in
6 our order. Three, a new suitable for publication
7 determination can be made after, A, Brook Mine has held at
8 least one public information meeting; and, B, Brook Mine
9 has addressed the deficiencies to DEQ's standards; and, C,
10 Brook Mine has addressed comments that arise from public
11 information meetings -- meeting or meetings; and finally,
12 D, the administrator has made the necessary 35-11-406(n)
13 findings.

14 Then four, once the new suitable for publication
15 determination under 35-11-406(h) has been made under the
16 conditions noted the procedures of 35-11-406(j) and (k)
17 will be followed with formal public notification and
18 opportunity for formal objections.

19 Five, if we end up in another contested case
20 hearing, it will be as short as possible. This will not
21 become an infinite loop.

22 And six, I think that we, as a council, would
23 tell the director of the DEQ that he neither issue nor deny
24 the permit within 15 days of receipt of our findings of
25 fact and decision because we would have found that the

1 suitable for publication determination under 35-11-406(h)
2 was premature and the deficiencies are still being
3 addressed.

4 So those are my comments. I thank you all for
5 staying awake through those, and I'll now work my way
6 through the council.

7 Councilman Flitner.

8 COUNCIL MEMBER FLITNER: Oh, okay. Well,
9 first of all, I guess I feel somewhat more confident in the
10 way I was thinking. I always worry about missing things
11 when I'm not here in person. I don't like reading
12 transcripts. I think you miss -- miss a lot of what's
13 going on, so -- but I feel better that I came almost to the
14 exact same conclusion that Presiding Officer Bagley found.
15 Three of those I have identified. One I don't know that I
16 agree with. And the fourth one, I dismissed but agree with
17 him today.

18 I also feel strongly about his common sense
19 comment. I feel it's just been absurd that we spent seven
20 days on this when really what it comes down to are the
21 issues that Dr. Bagley has verbalized, all of which are
22 very solvable if the people would have just been talking to
23 each other. And it's not like you didn't have time, even
24 after this process started.

25 I've voiced concerns about the alluvial water

1 early on, first day of the hearing. Some of the other
2 things we -- we knew these were issues. They should have
3 been worked on. I just feel like from -- from the very
4 beginning that this thing was headed down -- down paths
5 that could have been avoided.

6 And I think that the DEQ has a little bigger
7 responsibility making sure that we don't come to a
8 seven-day hearing. I realize you have your reasons for
9 doing what you do, and I don't always understand those, but
10 I think maybe you should try a little harder. And I'll use
11 the example of the -- what were we going to have -- the
12 optional.

13 CHAIRPERSON LALLY: Informal conference.

14 COUNCIL MEMBER DR. BAGLEY: Informal
15 conference.

16 COUNCIL MEMBER FLITNER: Informal
17 conference.

18 Who knows, maybe you could have cut this hearing
19 down by a couple days by having that conference. Maybe
20 there would have been some information that was brought to
21 light there that could have helped solve some of these
22 problems later. Because I didn't see this as being a
23 problem that was all that far apart, and it looks really
24 solvable. And I think Dr. Bagley's pointed that out.

25 So I guess I'm in complete concurrence. I

1 think -- I mean, I'm going to vote against it and I agree
2 with almost everything that you said. As a matter of fact,
3 it didn't leave much left to say, so I appreciate the time
4 I spent on it and you've obviously been thorough. And I
5 appreciate -- as one who has missed a lot of this hearing,
6 so I appreciate that. So that's all I've got.

7 COUNCIL MEMBER DR. BAGLEY: Councilman
8 Agopian.

9 BOARD MEMBER AGOPIAN: You know, at this
10 point I'm inclined to vote in favor of the motion, that the
11 permit is complete. At no time did we hear from the DEQ
12 that they had made the determinations under (n), so I don't
13 have any reason to believe that that's before us. We
14 haven't seen where they held themselves out that (n) was
15 there. I believe that is something that the DEQ, either
16 administrator or the director, prior to approving the
17 permit, the decision has only been made that it's complete.
18 I find, based on what's been presented by the permit
19 applicant and DEQ, that the permit was complete.

20 While I too share with you your feelings about
21 some of these things maybe could have been resolved, I
22 don't know that they would have been. It's disappointing,
23 extremely disappointing, that the permit applicant has
24 shown no record of public engagement for a mine site
25 located at the base of the Big Horn Mountains within close

1 proximity to many homes. Very disappointing to see that.
2 But at no time did I hear or see anything in the statute or
3 rules that requires it. And so I certainly believe that
4 would be well outside this council's purview and the
5 jurisdiction of the DEQ to require that, something that's
6 not in the rules and something that's not in the statutes.
7 But, again, I'm disappointed it didn't occur. I think that
8 it certainly answers a lot of questions. Doing business in
9 Wyoming requires to be a -- requires you to be a good
10 neighbor. And this would have been the most simple way to
11 show the community where a large-scale mine is going in,
12 that they are a good neighbor. So it's disappointing not
13 to see that.

14 And so with that, I am inclined to move the
15 permit forward to the administrator for decision on the
16 merits.

17 COUNCIL MEMBER DR. BAGLEY: Thank you.

18 Chair Lally.

19 CHAIRPERSON LALLY: First I'm going to echo
20 what everybody else says. The public acts -- or the public
21 comment on this was very lacking. Several of the members
22 of the public that came and testified in front of the
23 council said they weren't opposed to the mine. They just
24 hadn't -- nobody had told them anything and they were
25 opposed to not knowing. Many of them were miners

1 themselves. So, you know, the lack of opportunity for the
2 public to comment on this is troubling, and I think maybe
3 there needs to be a look at why that was able to happen.

4 So into the meat of my comments. I have a few
5 concerns. One is something that struck me is the -- the
6 new mining technique was supposed to limit the amount of
7 blasting. I mean, that was part of what the -- why they
8 wanted to do it that way. And then Brook said that they
9 were going to go ahead and publish that they could blast
10 any time they wanted. Seems to me, being a good neighbor,
11 there needs to be restrictions on, you know, notice.
12 That's why it was a -- in the law it says you need to have
13 30 days written notice for blasting. And then all the
14 sudden they're saying, you know, this isn't the Powder
15 River Basin. This is the Big Horn Basin. It has a
16 different method of mining. You need to have a different
17 method of blasting notice.

18 And then another concern I have is the ability,
19 if Ramaco does damage water wells, for them to possibly
20 provide water long-term to these properties based on their
21 corporate structure because they've just -- they've
22 utilized a method that oil and gas has used for a long
23 time, oil and gas and coal, to have subsidiary companies
24 run the -- run the actual operations. That means that if
25 they decide to close the mine, there's no remedy for those

1 people to continue to get water. And then also lack of
2 access does not excuse lack of data. There was some
3 concern about because they didn't have access to a portion
4 of property, they couldn't get data. We -- we issued an
5 order in lieu of consent. Because of that, that data needs
6 to be gathered before the application is complete.
7 However, using the legal argument that lack of information
8 makes the thing incomplete and then denying access is sort
9 of dirty pool.

10 So under those circumstances, which is (b) and
11 not (n), I will vote that it is not complete. However, I
12 do think that the council does have the ability to consider
13 (n) based on the fact that this is the last chance for the
14 public to have any input at all in the application. Thank
15 you.

16 COUNCIL MEMBER DR. BAGLEY: Thank you.

17 Council Member Baumer.

18 COUNCIL MEMBER BAUMER: Thank you.

19 Well, I wrote up eight pages of notes. And, like
20 Dr. Bagley, I won't bore you with all of them. But I also
21 intend to vote against this motion. I think there are
22 deficiencies in this application, and I just feel like I
23 can't in good faith approve this mine without the
24 hydrologic assessment, without that information. We don't
25 have any of that evidence, and nobody got -- gets to

1 comment on that evidence if we exclude (n), and I don't
2 think that's the way this thing is supposed to go. I think
3 (n) applies. I think we have solid case law that tells us
4 it applies in the Grams case. And I think we need to apply
5 it and it's not there. It's -- Grams is controlling and
6 directly on point, if you ask me.

7 I was bothered by the technically adequate
8 standard that was argued that this council should apply,
9 and I don't find those words anywhere in any part of the
10 statutes. And so I don't think that's our standard, that
11 it's technically adequate. It needs to be complete and
12 it's not. Without the (n) assessments, it's not complete.

13 And I agree with you, Dr. Bagley, with what you
14 stated on the record as the deficiencies. I have written
15 those deficiencies as well. And I think they're
16 deficiencies. They're not minor. And they're not
17 something that we can condition. They need to be
18 completed. I don't think they're subject to conditions.

19 So for those reasons, I intend to vote against
20 the motion as well.

21 COUNCIL MEMBER DR. BAGLEY: All right.

22 COUNCIL MEMBER BAUMER: Thank you.

23 COUNCIL MEMBER DR. BAGLEY: Thank you.

24 Any other comments from council members? So we
25 will take a roll call vote. Remind you the motion is to

1 affirm DEQ's decision that the Brook Mine, LLC application
2 was complete and suitable for publication and not deficient
3 under 35-11-406(h) and (j).

4 Councilman Flitner.

5 COUNCIL MEMBER FLITNER: Against.

6 COUNCIL MEMBER DR. BAGLEY: Chair Lally.

7 CHAIRPERSON LALLY: No.

8 COUNCIL MEMBER DR. BAGLEY: Councilman
9 Agopian.

10 BOARD MEMBER AGOPIAN: Aye. For.

11 CHAIRPERSON LALLY: Council Member Baumer.

12 COUNCIL MEMBER BAUMER: No.

13 COUNCIL MEMBER DR. BAGLEY: I vote no as
14 well.

15 So that motion has failed.

16 So I would like another motion so that we can
17 finish this up and -- does anyone have a motion out there?

18 COUNCIL MEMBER AGOPIAN: Well, is it a
19 motion to dismiss? Because I don't know what else is
20 before the council.

21 COUNCIL MEMBER BAUMER: Can we use your
22 language?

23 COUNCIL MEMBER DR. BAGLEY: If you'd like
24 to. Here's what I've written.

25 COUNCIL MEMBER BAUMER: All right. I'll

1 throw it out there. I move that the council deny the
2 application -- both the application -- vote against the
3 application because it has deficiencies under 35-11-406(h),
4 and should be returned to DEQ to address the deficiencies.
5 A list of deficiencies will be contained in our order. A
6 new suitable for publication determination can be made
7 after, A, Brook Mine has held at least one public
8 information meeting; and, B, Brook Mine has addressed the
9 deficiencies to DEQ's standards; and, C, Brook Mine has
10 addressed comments that arise from the public meetings;
11 and, D, the administrator has made the necessary
12 35-11-406(n) findings.

13 Once the new suitable for publication
14 determination under 35-11-406(h) has been made under the
15 conditions noted, the procedures of 35-11-406(j) and (k)
16 will be followed with formal public notification and
17 opportunity for formal objections.

18 If there is another contested case hearing, it
19 will be as short as possible. We don't need to put that in
20 there. And I'll leave out this is not a -- an infinite
21 loop. So none of that.

22 The director need neither issue or deny the
23 permit within 15 days of receipt of our findings of fact
24 and decision because we have found that the, quote,
25 suitable for publication determination under 35-11-406(h)

1 was premature and that deficiencies still need to be
2 addressed.

3 COUNCIL MEMBER DR. BAGLEY: Is there a
4 second?

5 COUNCIL MEMBER FLITNER: Could you repeat
6 that?

7 I'll second it.

8 COUNCIL MEMBER DR. BAGLEY: All right. So
9 now we'll have discussion on that.

10 Go ahead. Start with you, Councilman Agopian.

11 BOARD MEMBER AGOPIAN: I guess I'm confused
12 on the nature of the motion. We -- the motion to approve
13 failed. It seems like the permit isn't going forward. Is
14 there -- I'm confused as to what action the council's
15 seeking to take by voting down the completeness of the
16 permit. It's already determined that it's not complete.

17 COUNCIL MEMBER BAUMER: I feel like what we
18 need to do is actually have them resubmit with
19 consideration of the deficiencies --

20 CHAIRPERSON LALLY: Not to us.

21 COUNCIL MEMBER BAUMER: -- that the
22 majority have found.

23 CHAIRPERSON LALLY: Not to us.

24 COUNCIL MEMBER BAUMER: No, not to us.

25 But under (j), is it?

1 COUNCIL MEMBER DR. BAGLEY: (h), I think.

2 COUNCIL MEMBER BAUMER: (h). I feel like
3 with the deficiencies, if the deficiencies are addressed --

4 BOARD MEMBER AGOPIAN: So I guess --

5 COUNCIL MEMBER BAUMER: -- the permit may
6 be issued.

7 COUNCIL MEMBER AGOPIAN: So my comments, I
8 guess -- I'll leave them here. I've already identified my
9 feelings or my belief in whether deficiencies exist, and I
10 don't believe it's appropriate that the council at this
11 point add -- while I think that it would be very valuable,
12 don't get me wrong, very valuable to have public comments
13 and to have a proactive stakeholder engagement in the town
14 of Ranchester, I think it would be. I don't think that is
15 appropriate for us to require that now, outside the bounds
16 of the statute and outside the rules.

17 COUNCIL MEMBER DR. BAGLEY: Okay. Thank
18 you.

19 CHAIRPERSON LALLY: I'm wondering if we
20 have the authority.

21 COUNCIL MEMBER DR. BAGLEY: Well, the
22 motion can have amendments made to them.

23 Councilman Flitner.

24 COUNCIL MEMBER FLITNER: Yeah, I do agree
25 with Nick on that point. I think that, you know, there was

1 plenty of time for people to comment. Nobody kept them
2 away. They all had that opportunity. You know, like you
3 say, and I agreed with you earlier, the law was followed.
4 Maybe some people didn't act on it. So to require that
5 public comment I think might be a little bit of an
6 overreach.

7 I was wondering if there was a way instead of
8 specifically putting the things we want in a motion, would
9 it be better to just remand the -- the -- this back to the
10 DEQ with recommendations that are separate from the motion?
11 And that way they know what it's going to take to get it
12 past this, but we haven't limited to -- or ourselves I
13 guess, as well -- to those precise motions. Because these
14 things have a tendency to morph a little bit, and I don't
15 want that to come back and say, well, you said if this was
16 all taken care of, this was a done deal. We hope that to
17 be the case, but you can't guarantee it. So maybe a
18 recommendation would give -- give them the latitude to
19 address other problems as they come up and not just those
20 specifically, or maybe those -- you know, for some reason
21 maybe some of those would go away or whatever. But it
22 would allow some flexibility. So just the motion to remand
23 it, accompanied by our recommendations that were listed.
24 Is there a way maybe to do that?

25 COUNCIL MEMBER DR. BAGLEY: Yeah, I think

1 we can -- we can vote down this motion and then propose
2 that motion.

3 COUNCIL MEMBER FLITNER: If you're
4 agreeable to it.

5 COUNCIL MEMBER DR. BAGLEY: That's more --
6 that's more -- that's more than just amending something
7 out. It's like basically -- so, yeah, that's how we can
8 proceed. We can vote this down and bring forward a new
9 motion.

10 COUNCIL MEMBER FLITNER: Because -- and, I
11 guess, to clarify. I've always felt like on a practical
12 basis, this is a good project or could be. And early on, I
13 think there was a lot of sentiment this was something new
14 and people kind of got excited about. And so, you know,
15 nobody's excited about putting the skids to a project
16 that -- that this is how -- how sometimes things are -- are
17 learned. And this process looked like a good one, but
18 there were misgivings early on and they never really had
19 been addressed to our satisfaction. And I guess that's
20 really what we want to do is give you an avenue to get to
21 where you need to get because you didn't get there by
22 yourselves. And we're all part of it now and we're hanging
23 our names and integrity on as well. So now we're your
24 partners too. But we have things we'd like to get
25 accomplished as well. And one of these is getting this

1 done, so...

2 COUNCIL MEMBER DR. BAGLEY: So I've been
3 informed parliamentarily [sic], we can -- if the seconder
4 and motioner both withdraw the motion, then we don't vote
5 on it and the motion can move forward.

6 COUNCIL MEMBER BAUMER: I'll withdraw the
7 motion.

8 COUNCIL MEMBER DR. BAGLEY: All right.

9 COUNCIL MEMBER FLITNER: I'll withdraw the
10 second.

11 COUNCIL MEMBER DR. BAGLEY: All right. So
12 that motion has been withdrawn by both the seconder and
13 mover.

14 Do I have another motion?

15 CHAIRPERSON LALLY: Can we can get back
16 to --

17 COUNCIL MEMBER FLITNER: Come on, Deb.

18 COUNCIL MEMBER DR. BAGLEY: So let me
19 provide the answer to Councilman Agopian's question. We
20 have denied this, but we haven't given anybody any guidance
21 of where it should go. So I believe a motion is necessary.
22 And I think you were on -- you're on the right track, Tim,
23 where we say now this is what needs to happen next, but
24 give it as broad a view as possible, I think is what you
25 were saying.

1 COUNCIL MEMBER FLITNER: Right. Right.

2 COUNCIL MEMBER DR. BAGLEY: So we need to
3 say, though, I think, okay, send it back to DEQ with the --
4 the deficiencies and we will list and continue the 406(h)
5 determination. I think that's what -- something like that.

6 CHAIRPERSON LALLY: Take us back through
7 public comment.

8 COUNCIL MEMBER DR. BAGLEY: So do you have
9 a sample?

10 COUNCIL MEMBER FLITNER: I would make a
11 motion to remand it back to the DEQ with direction as
12 outlined in an order. Would that work? And then we can
13 put in your -- your -- what was part of your motion in the
14 order.

15 BOARD MEMBER AGOPIAN: We'll still have the
16 ability to vote. I guess we have to move the motion for
17 discussion.

18 COUNCIL MEMBER DR. BAGLEY: Yeah.

19 COUNCIL MEMBER AGOPIAN: So I'll second.

20 CHAIRPERSON LALLY: Second.

21 COUNCIL MEMBER DR. BAGLEY: All right.

22 Thank you.

23 So we now have a motion we'll send it back to DEQ
24 for their examination and we'll have things in the
25 motion -- written in the order which has to also be

1 approved by the council.

2 BOARD MEMBER AGOPIAN: So discussion now?

3 COUNCIL MEMBER DR. BAGLEY: Go ahead.

4 BOARD MEMBER AGOPIAN: That's all I want to
5 be clear about. We just approved -- we're moving a motion
6 to remand with direction at this point, which is a blank
7 slate. We have a guidance based on your comments and what
8 council thinks is --

9 COUNCIL MEMBER DR. BAGLEY: Right. We
10 would have --

11 COUNCIL MEMBER AGOPIAN: -- deficient.

12 COUNCIL MEMBER DR. BAGLEY: Right.

13 COUNCIL MEMBER AGOPIAN: But as members.

14 CHAIRPERSON LALLY: We still --

15 BOARD MEMBER AGOPIAN: We still have the
16 right to vote against what those deficiencies might be once
17 they're articulated on paper.

18 COUNCIL MEMBER BAUMER: Do we have to do
19 that right now, or can we articulate those on paper and
20 then have a vote on that?

21 CHAIRPERSON LALLY: Vote on it at the next
22 meeting.

23 MR. RUBY: You'll have to vote to approve
24 the order. Yeah.

25 COUNCIL MEMBER BAUMER: Okay.

1 MR. RUBY: And so you can certainly -- as
2 that -- because that order will go out to you before, and
3 certainly all of you can say I want this. I want that. I
4 don't want this. I don't want that.

5 COUNCIL MEMBER BAUMER: Okay.

6 MR. RUBY: Just as you would in any other
7 kind of negotiations on what your order would say. And
8 then at some point we will reach a -- a vote on the order,
9 and it will be approved in some form and sent out to the
10 parties.

11 COUNCIL MEMBER FLITNER: Do we hash that
12 out now?

13 COUNCIL MEMBER DR. BAGLEY: No. What I'm
14 hearing is we don't have to hash that out now.

15 COUNCIL MEMBER BAUMER: So we're looking --
16 who --

17 COUNCIL MEMBER AGOPIAN: Do we want to hash
18 that out now?

19 COUNCIL MEMBER BAUMER: Who is going to put
20 the list of deficiencies together if we're not going to
21 talk about it now?

22 COUNCIL MEMBER FLITNER: I was under the
23 understanding that those were -- that's pretty much it. I
24 mean, I agree with Nick on the -- maybe we can take that
25 one out, or -- I think we can hash this thing out in

1 15 minutes and then they'd have their direction right now
2 today, if you guys are not opposed to that.

3 CHAIRPERSON LALLY: I mean, I --

4 BOARD MEMBER AGOPIAN: I think that's
5 reasonable.

6 COUNCIL MEMBER DR. BAGLEY: Sure. That
7 works for me.

8 CHAIRPERSON LALLY: Do we still have a
9 motion on the floor?

10 COUNCIL MEMBER BAUMER: So is the motion to
11 deny the permit due to deficiencies that we articulate and
12 remand to DEQ to consider the deficiencies and proceed
13 under Section (h), is that --

14 CHAIRPERSON LALLY: Yes.

15 COUNCIL MEMBER FLITNER: No, I don't --

16 COUNCIL MEMBER BAUMER: What is it?

17 COUNCIL MEMBER DR. BAGLEY: I don't think
18 we used the words "deny the permit."

19 CHAIRPERSON LALLY: No. We --

20 COUNCIL MEMBER FLITNER: The motion said
21 remand. At least that's what I said.

22 COUNCIL MEMBER BAUMER: Remand, yes.

23 COUNCIL MEMBER FLITNER: I don't know
24 how --

25 COUNCIL MEMBER BAUMER: So the permit

1 isn't --

2 CHAIRPERSON LALLY: -- denied.

3 COUNCIL MEMBER BAUMER: -- denied. It's

4 remanded --

5 CHAIRPERSON LALLY: To correct

6 deficiencies.

7 COUNCIL MEMBER BAUMER: -- to correct

8 deficiencies.

9 CHAIRPERSON LALLY: Yeah. None of us are
10 denying --

11 COUNCIL MEMBER BAUMER: Yeah.

12 CHAIRPERSON LALLY: -- that there might
13 need to be a mine. We're just denying it's ready.

14 COUNCIL MEMBER BAUMER: Yeah.

15 CHAIRPERSON LALLY: Is that right?

16 COUNCIL MEMBER BAUMER: I -- I wasn't
17 paying close enough attention to how you started that
18 motion.

19 COUNCIL MEMBER FLITNER: Really?

20 COUNCIL MEMBER BAUMER: You started it with
21 the word "remand."

22 COUNCIL MEMBER FLITNER: I might have
23 changed a time or two.

24 COUNCIL MEMBER DR. BAGLEY: So one of
25 the -- the motion we have right now is -- is -- it is

1 general, but it does provide us the flexibility to make
2 sure that what's in the order, the council is happy about
3 and we don't happen to miss something. And we will get a
4 chance to all look at the order. So I might suggest, if we
5 approve that order, if the -- approve that motion, and if
6 the council wants to discuss potential deficiencies that
7 might be included in that order but not in part -- but not
8 make a formal motion about that, then that information
9 is -- is -- we've captured it. We can do some of that
10 discussion now, which is always best in public anyway.
11 Plus the people who have to help us write the order will
12 have some ideas. But that doesn't -- if we put that into a
13 motion, then we lock ourselves in. And I think that's what
14 you were trying to avoid in the first place.

15 So if we approve the motion and then we discuss
16 potential deficiencies, argue about them, whatever, for a
17 while, then -- but not make a motion on that.

18 CHAIRPERSON LALLY: Okay.

19 COUNCIL MEMBER DR. BAGLEY: That may give
20 us the best opportunity going forward.

21 CHAIRPERSON LALLY: And then Nick was --
22 Nick's question, I believe, was if we issue an order, can
23 he vote against it because he didn't agree with the
24 original idea behind the order.

25 MR. RUBY: Yeah.

1 COUNCIL MEMBER FLITNER: He has the
2 same --

3 BOARD MEMBER AGOPIAN: I wouldn't want to
4 presume how I would vote.

5 CHAIRPERSON LALLY: Right. No. That was my
6 understanding of your question.

7 COUNCIL MEMBER FLITNER: That would be a
8 separate --

9 CHAIRPERSON LALLY: I'm not presuming
10 you're voting --

11 COUNCIL MEMBER AGOPIAN: I know.

12 THE REPORTER: One at a time.

13 BOARD MEMBER AGOPIAN: I know. But, yeah,
14 we can move -- I seconded the motion. We can have the
15 vote, so forth.

16 COUNCIL MEMBER DR. BAGLEY: Yeah. Any
17 other discussion on that motion? I think it's a good
18 motion, and it -- it then allows us to discuss some general
19 deficiencies but not -- what the order will handle
20 separately.

21 So -- all right. Got to do a roll call vote.
22 I'll call that.

23 Councilman Flitner.

24 COUNCIL MEMBER FLITNER: Aye.

25 COUNCIL MEMBER DR. BAGLEY: Chair Lally.

1 CHAIRPERSON LALLY: Aye.

2 COUNCIL MEMBER DR. BAGLEY: Council Member
3 Baumer.

4 COUNCIL MEMBER BAUMER: Aye.

5 COUNCIL MEMBER DR. BAGLEY: Council Member
6 Agopian.

7 BOARD MEMBER AGOPIAN: No.

8 COUNCIL MEMBER DR. BAGLEY: I vote aye as
9 well. So that motion has been passed.

10 And what we'll do, then, the last little bit
11 here, open it up for council member -- council discussion
12 to perhaps suggest some ideas of what you may have
13 considered a deficiency. We will not be voting on those,
14 getting those into a motion, but just to discuss those. If
15 someone brought up an idea that you thought was bad, say
16 so. If you have another one you want to add. Just to get
17 some ideas. We'll kind of do that one at a time, like --
18 but we won't have a motion on that.

19 So we'll go ahead and start with Councilman
20 Flitner.

21 COUNCIL MEMBER FLITNER: Maybe it would be
22 helpful if you read those, because -- I mean, I can't think
23 of every one of them off the top of my head, but I remember
24 hearing when read that I agreed with most of it. And maybe
25 we can peel out the ones there's some disagreement on first

1 and take the rest of them and put them aside, the ones we
2 all agree on, and then at least everybody kind of have a
3 starting point.

4 CHAIRPERSON LALLY: Yeah, what the list
5 that you had?

6 COUNCIL MEMBER FLITNER: Most of those I
7 think, as I remember hearing them read, were kind of right
8 along the lines of what I was thinking before this thing
9 started today.

10 COUNCIL MEMBER DR. BAGLEY: Sure. I'll
11 give you the briefer version. A deficiency -- I felt there
12 was a deficiency in the plans for the surface gradient
13 because of the subsidence control plan, simply assuming no
14 subsidence. And so I didn't feel you could reclaim
15 something if you didn't know what it was going to look
16 like.

17 COUNCIL MEMBER BAUMER: Should we talk
18 about each one of these as you're --

19 COUNCIL MEMBER DR. BAGLEY: Sure.

20 COUNCIL MEMBER BAUMER: So we don't have to
21 remember all.

22 COUNCIL MEMBER DR. BAGLEY: Yeah.

23 COUNCIL MEMBER BAUMER: I had written
24 subsidence control plan was not complete, and so I agreed
25 with it just more generally that the subsidence control

1 plan was deficient.

2 COUNCIL MEMBER FLITNER: Agreed.

3 CHAIRPERSON LALLY: I agree that they
4 didn't address it properly, but I'm not sure how they can
5 decide what's subsidence related to the mine and what's
6 continuing subsidence related to other -- because if you
7 look at the landscape around there, it's pretty subsided
8 anyway. So I'm not sure how they can address that, but
9 saying there's not going to be any subsidence is probably
10 not the proper way to do it, but --

11 COUNCIL MEMBER FLITNER: Right.

12 COUNCIL MEMBER DR. BAGLEY: I thought
13 about this from an engineering standpoint. And I think the
14 one -- I don't think the subsidence control plan for the
15 entire site needs to be done today. But I would like --
16 there's -- there was not enough data collected on the
17 initial site where you're going to start first.

18 COUNCIL MEMBER BAUMER: On the TR-1.

19 COUNCIL MEMBER DR. BAGLEY: Right. And
20 they said it would be in the ground control plan. And
21 that's fine, except the ground control plan does not
22 specifically address long-term subsidence. It addresses
23 collapsing on people doing the mining at that time. And
24 so, you know, I'm just spitballing and people can -- you
25 know, I don't know how we would include it. And we may not

1 include it with this kind of detail because if it goes
2 back, DEQ will have it assigned. But I would think some
3 additional data related to where they want first to go, and
4 showing -- and additional data may confirm that they really
5 don't really expect subsidence. It just wasn't enough
6 data, I don't think. And if they could show for that as --
7 say, for that first part before they move on.

8 COUNCIL MEMBER BAUMER: I had written down
9 more sampling should be done in the TR-1 area. And it may
10 confirm what they suspect is there, but I don't think their
11 sampling was sufficient in the TR-1 area.

12 COUNCIL MEMBER FLITNER: We don't -- I
13 think the point is we don't need to tell them what to do.

14 COUNCIL MEMBER BAUMER: Right.

15 COUNCIL MEMBER DR. BAGLEY: No.

16 COUNCIL MEMBER FLITNER: That's their job.
17 We need to tell them these are where we have the questions.

18 COUNCIL MEMBER BAUMER: The subsidence
19 control plan.

20 COUNCIL MEMBER FLITNER: One of the issues
21 that we are unsure about is subsidence control plan. Bring
22 us some information and convince us. That's what we're
23 saying. Not -- we're not giving them direction on how to
24 fix it.

25 COUNCIL MEMBER BAUMER: No.

1 COUNCIL MEMBER FLITNER: We're saying show
2 us you made attempt to address it.

3 COUNCIL MEMBER BAUMER: Right.

4 COUNCIL MEMBER DR. BAGLEY: Right.

5 Any other questions or thoughts on that one?

6 Do you have any thoughts, Nick? Or should we
7 just jump in when you're ready --

8 BOARD MEMBER AGOPIAN: I don't have any
9 comments at this time about the mine's intended not to
10 subside. And there's every indication that the mine --
11 that Brook Mine would be responsible if subsidence were to
12 occur. So I don't foresee any issues.

13 COUNCIL MEMBER DR. BAGLEY: Okay. So the
14 second one I had was that an estimate of the total cost of
15 reclamation was -- was not presented. We heard testimony
16 about the reclamation cost estimates for the first year,
17 but not for the total cost of reclaiming the affected
18 lands. That was -- I felt that was a deficiency. That's
19 just me. Is there any discussion on that?

20 COUNCIL MEMBER FLITNER: I'm in the middle
21 on that. I can go either way, so no comment from me.

22 COUNCIL MEMBER BAUMER: I sort of felt like
23 DEQ would handle that, but --

24 CHAIRPERSON LALLY: As long as they bond on
25 the disturbed lands.

1 COUNCIL MEMBER BAUMER: Yeah.

2 COUNCIL MEMBER DR. BAGLEY: Okay.

3 CHAIRPERSON LALLY: That's really my only
4 concern.

5 COUNCIL MEMBER BAUMER: And I feel like
6 that's in the permit, that they have every intention of
7 making sure that it's okay. But I'm -- I'm in the middle
8 on it as well. You know, it's not a deal breaker for me,
9 so...

10 COUNCIL MEMBER DR. BAGLEY: So what I'm
11 hearing folks don't really consider that a major deficiency
12 because it's going to be covered by bonding and things
13 anyway. Okay. And that's -- that's fair. I'll cross that
14 one out.

15 The third one was I was concerned about
16 procedures proposed to avoid constituting a public nuisance
17 and endangering public safety, and that was specifically
18 worried about the traffic generated by the mine and whether
19 there was evidence. I know that DEQ doesn't regulate that,
20 but any evidence that coordination with WYDOT and the
21 County had been -- had gone on that issue.

22 COUNCIL MEMBER BAUMER: Doesn't -- I mean,
23 somebody else would issue road permits and things, correct?
24 The County would have to be involved in all of that. Is
25 that outside of our --

1 CHAIRPERSON LALLY: I think so.

2 COUNCIL MEMBER FLITNER: That was the only
3 one that I -- of the five that I didn't -- that I was
4 telling you that I disagreed with.

5 COUNCIL MEMBER DR. BAGLEY: Okay.

6 COUNCIL MEMBER FLITNER: Again, that was --
7 hopefully the mine plan will take care of a lot of that
8 and -- that's where I am on that one.

9 COUNCIL MEMBER DR. BAGLEY: I guess my
10 point was I didn't feel the mine plan had taken care of
11 that, and it's a public nuisance. We saw this a couple
12 years ago with the gravel pit.

13 COUNCIL MEMBER FLITNER: That's true.
14 Okay.

15 COUNCIL MEMBER DR. BAGLEY: But your
16 comment's still totally valid. Just arguing with you for
17 fun.

18 CHAIRPERSON LALLY: Again, I don't find
19 any -- that's outside the purview of --

20 THE REPORTER: Purview of --

21 CHAIRPERSON LALLY: This, I think is what I
22 said.

23 COUNCIL MEMBER DR. BAGLEY: Nick?

24 BOARD MEMBER AGOPIAN: No comments.

25 COUNCIL MEMBER DR. BAGLEY: All right. So

1 there wasn't real agreement on that one either. I'll go
2 ahead and get that one out.

3 Blasting plan, which shall outline the procedures
4 and standards. And I was concerned specifically about
5 limits on the blasting schedule that have basically the --
6 the plan is written that they would blast -- they had
7 ability to blast at any time, any day or any time of day.

8 COUNCIL MEMBER FLITNER: I totally agree
9 with that one. I don't know that comment -- or this
10 council's ever been in the habit of issuing permits that
11 don't have those kinds of things in there. I mean, even
12 gravel crushing have to have operational hours. I think
13 that is one of the things that the DEQ just missed. I
14 mean, that's a red flag that they weren't paying very close
15 attention. Got to have those things.

16 COUNCIL MEMBER BAUMER: I think in light of
17 all the homeowners that are so close --

18 COUNCIL MEMBER FLITNER: Yeah.

19 COUNCIL MEMBER BAUMER: -- it just is
20 necessary.

21 CHAIRPERSON LALLY: I've already made my
22 comments on that. I think there need to be limits based on
23 when they're actually blasting.

24 COUNCIL MEMBER DR. BAGLEY: Nick?

25 BOARD MEMBER AGOPIAN: I thought the Brook

1 Mine presented some valid reasons as to why they would like
2 discretion to blast that's appropriate. There's no
3 evidence to suggest they were going to do so in a way that
4 intentionally sought to harm any of the landowners.

5 COUNCIL MEMBER DR. BAGLEY: Okay. Thank
6 you.

7 And the fifth one was related to disturbances of
8 the prevailing hydrologic balance at the mine site, and in
9 associated off-site areas. And -- to the quality and
10 quantity of water surface groundwater systems, both during
11 and after mining operations and during reclamation. And my
12 concern there was that we -- there's already prediction
13 there will be impacts to wells, that alluvial valley floors
14 fit into this because they're part of the hydrologic
15 balance.

16 COUNCIL MEMBER FLITNER: I agree. I think
17 that's a difficult one, and I don't think you can really --
18 if you're going to err, err on the side of just a little
19 more data. I do appreciate the fact that they relied
20 heavily on 23 years of data from the old mine, and I think
21 that -- that needs to be said. I mean, I want to give them
22 credit for that. I don't want them to think they just
23 didn't do anything. That's not true. They researched it
24 pretty well. But I think there needs to be some more
25 recent stuff, just something to make us a little more

1 comfortable on that.

2 COUNCIL MEMBER DR. BAGLEY: Meghan?

3 CHAIRPERSON LALLY: Based on the data,
4 there's not going to be significant impacts in terms of
5 water amounts. However, you know, another drought comes
6 and somebody's well goes dry, you know, that leaves them in
7 a bad situation after 5 feet of drawdown or a hundred feet
8 of drawdown or whatever. My biggest concern is that they
9 have a way to remedy that that lasts beyond the life of the
10 mine because those people don't have a well after that, and
11 there has to be a way for that to be funded. And a company
12 that only has \$250,000 in assets, you know, where does that
13 leave the homeowners at the end of the day?

14 COUNCIL MEMBER BAUMER: And I wrote just
15 generally that the hydrologic assessment was deficient.
16 And I wrote that because of the TR-1 area. But I don't
17 think we need to -- I agree with Tim that we don't need to
18 be saying you have to do something in this little portion
19 but not anywhere else. I just felt like it was deficient.
20 The assessment wasn't done in certain areas, and I felt
21 like it needed to be.

22 COUNCIL MEMBER DR. BAGLEY: Council member?

23 COUNCIL MEMBER AGOPIAN: I don't have any
24 comments.

25 COUNCIL MEMBER DR. BAGLEY: Okay. Those

1 are the five I identified. And through this discussion I
2 went ahead and taken out the total cost and the public
3 nuisance ones, left the other three in.

4 Are there any others the folks want to bring
5 forward for discussion?

6 COUNCIL MEMBER BAUMER: No. I think some
7 other things that I had concerns about weren't really
8 deficiencies. They were just conditions that I would put
9 on it. Like if homeowners within a half a mile wanted
10 seismon -- seismic monitoring, they would be provided that.

11 CHAIRPERSON LALLY: I think that's --

12 COUNCIL MEMBER BAUMER: And pre-blast
13 surveys. But I don't think those are deficiencies. I
14 think those are more conditions that I would have added
15 should the -- had the permit been granted.

16 COUNCIL MEMBER DR. BAGLEY: Any others?

17 CHAIRPERSON LALLY: The only other one was
18 lack of data, which goes back to all the other pieces,
19 so...

20 COUNCIL MEMBER DR. BAGLEY: Okay. Well,
21 thank you very much for those comments. We've already
22 passed our motion.

23 So the council will prepare its findings of
24 facts, conclusions of law and order for approval within the
25 statutory 60 days from the close of this hearing. And I

1 hereby now close the hearing at this time.

2 Madam Chair, return the gavel to you.

3 CHAIRPERSON LALLY: Thank you, Dr. Bagley.

4 I think we will take a five-minute break and then
5 we'll return. We will go into executive session for
6 personnel, so we'll need a motion when we get back in a few
7 minutes. So the council can assemble and everybody can
8 take care of personal needs.

9 Thank you all for coming.

10 (Hearing proceedings concluded

11 4:57 p.m., August 1, 2017.)

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C E R T I F I C A T E

I, KATHY J. KENDRICK, a Registered Professional
Reporter, do hereby certify that I reported by machine
shorthand the foregoing proceedings contained herein,
constituting a full, true and correct transcript.

Dated this 7th day of August, 2017.


KATHY J. KENDRICK
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From: Jeffrey S. Pope
To: [Shannon Anderson](#); [Isaac Sutphin](#)
Cc: lboomgaarden@crowleyfleck.com; cgregersen@crowleyfleck.com; jgilbertz@yonkeetoner.com; andrew.kuhlmann@wyo.gov; james.larock@wyo.gov; [Jim Ruby](mailto:Jim.Ruby); ryan.schelhaas@wyo.gov; [Thomas Sansonetti](#)
Subject: RE: Upcoming Ramaco Meetings
Date: Monday, August 07, 2017 11:24:02 AM

Shannon,

Thank you for your email. We will not communicate ex parte with the EQC.

Jeff

From: Shannon Anderson [mailto:sanderson@powderriverbasin.org]
Sent: Monday, August 7, 2017 8:37 AM
To: Jeffrey S. Pope <JSPope@hollandhart.com>; Isaac Sutphin <INSutphin@hollandhart.com>
Cc: lboomgaarden@crowleyfleck.com; cgregersen@crowleyfleck.com; jgilbertz@yonkeetoner.com; andrew.kuhlmann@wyo.gov; james.larock@wyo.gov; Jim Ruby <jim.ruby@wyo.gov>; ryan.schelhaas@wyo.gov
Subject: Upcoming Ramaco Meetings

Jeff & Isaac,

We are wondering if you could elaborate on your client's quote in this article about meetings. We know you will respect the restrictions on ex parte communications with the EQC and its staff, but just wanted clarification about the "various" regulatory agencies your client will be meeting with.

The Wyoming council has 60 days to publish its findings. "There is still some confusion about what precise concerns and remedies are on the table," Ramaco's Atkins said. He expects to have "greater clarity" over the next few days after meeting with staff at various Wyoming regulatory agencies.

Thank you, Shannon

Shannon Anderson
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Follow us at <https://twitter.com/PRBResCouncil>

Wyoming panel temporarily blocks new PRB mine: Update

Adds comments from the Wyoming DEQ

Washington, 2 August (Argus) — Wyoming regulators have blocked temporarily the development of a controversial new mine in the Powder River basin (PRB).

The Environmental Quality Council yesterday voted 4-1 to send Ramaco's permit application for its Brook mine back to the state Department of Environmental Quality (DEQ) for revision, over concerns that the proposal does not adequately address the project's potential environmental effects.

Ramaco is still feeling "very positive and remain(s) confident that the mine permit will ultimately be approved," chief executive Randall Atkins said today.

But the council warned that the company has not yet met its "burden to prove that this mining operation will adequately provide reclamation," member David Bagley (D) said, noting that he is specifically worried about subsidence, or the development of sinkholes, near the mining site.

The proposed permit also fails to demonstrate that the operations will not cause damage to "alluvial valley floors" or hydrologic systems outside the permit area, Bagley added.

Bob LeResche, chair of the Powder River Basin Resource Council — a conservation group that has opposed the project — praised the council's decision.

The application "did not adequately protect public health and safety, land and water," he said. By advancing Ramaco's mining plan, the DEQ did not properly "represent the citizens of the state" and "they were pretty soundly rebuked."

The DEQ had deemed Ramaco's application technically complete but sent it to the state environmental council for review after LeResche's group filed a [complaint](#) asking for a face-to-face meeting about the proposal.

"We felt it was important to put this in front of an impartial group," said DEQ public information officer Keith Guille.

Ramaco started the process to develop Brook mine in 2014, when prompt quarter prices for PRB 8,800 Btu/lb coal averaged \$12.58/short ton and the basin produced 418.2mn st (379.4mn metric tonnes) of sub-bituminous coal. Last year, the prompt quarter price averaged \$10.45/st, while output fell to 319.2mn st, the lowest level in at least 13 years.

Weaker market conditions caused Ramaco to explore other options for Brook mine's coal. The company is now [planning](#) to develop a mine-mouth manufacturing site and research park that would help develop cost-effective technologies to use coal to create products like carbon fiber, activated carbon and building materials.

Council member Tim Flitner (R) said the Brook mine has the potential to be "a good project" but noted that Ramaco Carbon's plan has not addressed earlier "misgivings" about negative environmental impacts of the development.

LeResche questioned the economic wisdom of the new proposal.

Similar projects have been tried in recent years, drawing significant federal grant money without getting results, he said.

The Wyoming council has 60 days to publish its findings. "There is still some confusion about what precise concerns and remedies are on the table," Ramaco's Atkins said. He expects to have "greater clarity" over the next few days after meeting with staff at various Wyoming regulatory agencies.

Guille, of the DEQ, said he could not speculate on how long the permitting process might take.

"This isn't something that's put together within an afternoon — it takes years, months," he said. "But ultimately we've got something of an application here, it's not a complete start-over."

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From: Andrew Kuhlmann
To: [Jim Ruby](#)
Cc: [Lynne Boomgaarden](#); [Clayton Gregersen](#); [Jay Gilbertz](#); [Shannon Anderson](#); [Jeff Pope](#); [James LaRock](#)
Subject: DEQ's Proposed Findings of Fact, Conclusions of Law, and Decision
Date: Monday, August 07, 2017 11:22:33 AM
Attachments: [2017-7-24 DEQ Proposed FoFs, CoLs, and Decision.docx](#)

Jim,

Attached is a Word version of DEQ's Proposed Findings of Fact, Conclusions of Law and Decision.

Thanks,
Andrew

--

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**BEFORE THE ENVIRONMENTAL QUALITY COUNCIL
STATE OF WYOMING**

IN RE BROOK MINE APPLICATION)	
)	
TFN 6 2-025	)	Docket 17-4802 (Consolidated)

DEPARTMENT OF ENVIRONMENTAL QUALITY'S
PROPOSED FINDINGS OF FACT, CONCLUSIONS OF LAW, AND DECISION

The State of Wyoming, Department of Environmental Quality ("Department"), through its undersigned counsel, hereby offers these proposed findings of fact, conclusions of law, and decision:

I. APPEARANCES

On May 22 through 26 and June 7 and 8, 2017, the parties, Brook Mining Company LLC ("Brook"), the Department, Mary Brezik-Fisher and David Fisher (the "Fishers"), Big Horn Coal Company ("Big Horn"), and the Powder River Basin Resource Council ("PRBRC"), appeared before the Environmental Quality Council ("Council") for a contested case hearing in the above-entitled matter. Present for the Council were Hearing Officer and Chairman Dr. David Bagley, Vice-Chairman Meghan Lally, and councilmembers Tim Flitner, Nick Agopian, and Deb Baumer. Councilmembers Rich Fairservis and Megan Degenfelder recused themselves.

Present at the hearing for Brook Mine were attorneys Tom Sansonetti, Isaac Sutphin, and Jeff Pope of Holland & Hart. Present for the Department were attorneys Andrew Kuhlmann and James LaRock. Present for the Fishers was attorney Jay Gilbertz of Yonkee & Toner. Present for Big Horn were attorneys Lynne Boomgaarden and Clayton Gregersen of Crowley Fleck. Present for PRBRC was attorney Shannon Anderson.

Present and testifying for Brook Mine was Jeff Barron and Kenneth Woodring. Present and testifying Department employees were Bj Kristiansen, Matt Kunze, Dr. Muthu Kuchanur, Doug Emme, and Carol Bilbrough. Mary Brezik-Fisher testified for herself. Present and testifying for Big Horn were Jordan Sweeney and Joe Gerlach. Present and testifying for PRBRC were Mickel Wireman, Dr. Gennaro Marino, and landowners near the proposed mine: John Buyok, Brooke Collins, Anton Bocek, and Gillian Malone. The following exhibits were admitted into evidence: Brook exhibits 1, 2, 6a, 6b, and 10 through 13; Department exhibits 1 through 36; Fishers' exhibits 1 through 26; Big Horn exhibits 1 through 19; and PRBRC exhibits 1 through 95.

The Council, having heard and considered all the evidence and the whole record in this case and being fully advised, and pursuant to the Wyoming Administrative Procedure Act, Wyoming Statute § 16-3-110, finds and concludes as follows:

II. JURISDICTION

1. This case arises from a dispute concerning objections filed against a permit application under Wyoming Statute § 35-11-406(k) of the Wyoming Environmental Quality Act ("Act"). In this case, the objectors to the permit application (the Fishers, Big Horn, and PRBRC) have advanced several arguments asserting that Brook Mine's surface coal mine permit application contains deficiencies. *See* Wyo. Stat. Ann. § 35-11-103(e)(xxiv) (defining "deficiency"). Brook Mine and the Department contend that the permit application contains no deficiencies.

2. Under Wyoming Statute § 35-11-406(k), the Council held a public hearing in this matter to resolve objections filed to Brook’s surface coal mine permit application after the Director found that an informal conference was not preferable. The Council must make a decision on the objections within 60 days after its hearing. Wyo. Stat. Ann. § 35-11-406(p).

3. This matter is properly before the Council and subject to the Council’s jurisdiction. The Council is required to resolve the objections. Wyo. Stat. Ann. § 35-11-406(k) and (p).

III. FINDINGS OF FACT

A. Course of Proceedings

4. During the comment period for the Brook Mine permit application, the Fishers, Big Horn, and PRBRC sent objections to the Department. (Exs. PRBRC 1, BHC 3, and Fishers 26.) All three objectors requested an informal conference with the Director on their objections. (*See id.*) After the Director decided not to hold an informal conference, the Council set, and then later vacated, a contested case hearing under Docket 17-4801. *Order Vacating Contested Case H’rg and Setting Oral Argument* (Docket 17-4801). The Council ultimately dismissed that docketed matter. *Order of Dismissal* (Docket 17-4801).

5. Subsequently, the three objector parties filed petitions with the Council to hold a contested case to resolve their objections. *Objector Big Horn Coal Co.’s Petition* (Docket 17-4802); *Objector Fishers’ Petition* (Docket 17-4803); and *PRBRC’s Petition* (Docket 17-4804). The Council consolidated Dockets 17-4802, 17-4803, and 17-4804, and set a single hearing to resolve all three sets of objections. *Order of Consolidation and Schedule* (Docket 17-4802). Prior to the contested case hearing, the Council heard and denied Brook’s motions to dismiss the three petitions. *Council H’rg Tr.* (Mar. 22, 2017). Also, the Council granted the Department’s motion to dismiss the part of PRBRC’s petition appealing the Director’s decision not to hold an informal

conference. The Council granted that motion because the Council could not grant PRBRC the relief it requested under that claim. *Id.*

B. Witnesses

6. Each party presented witnesses at the contested case hearing.

7. **The Department's Witnesses.** The Department's first witness, Bjarne "Bj" Kristiansen, is the assistant district supervisor for District III of the Department's Land Quality Division ("Division"). (Tr. at 38-39.) He is a licensed professional geologist in Wyoming and is the Department's coordinator for the permit application. (Tr. at 40 and 48.) He testified generally about the application's content, geology, subsidence, and alluvial valley floor ("AVF") issues.

8. The Department's second witness, Matt Kunze, is a natural resource program principal at the Division. (Tr. at 392) He is primarily responsible for preparing cumulative hydrologic impact assessments ("CHIAs"), but also assists with technical reviews of surface water aspects of permit applications. (Tr. at 393.) He reviewed sections of this permit application. (*Id.*) He generally testified to surface water quantity and quality issues. (Tr. at 393-451.)

9. The Department's third witness, Dr. Muthu Kuchanur, is a geology supervisor for the Division's support services. (Tr. at 458-59.) He has a Ph.D. in environmental engineering, is a professional engineer licensed in Wyoming, and specializes in groundwater modeling. (Tr. at 458-60.) He reviewed the Brook Mine groundwater model and groundwater related parts of Appendix D6. (Tr. at 460-461.) He generally testified to groundwater issues and the groundwater model.

10. The Department's fourth witness, Doug Emme, is the blasting program principal at the Division. (Tr. at 577-78.) He trains and certifies blasters in the State of Wyoming, investigates blasting complaints, and inspects mine sites for compliance with blasting rules and regulations. (Tr. at 578-80.) He generally testified to issues related to blasting and Brook's reclamation bond.

11. **Brook Mine's Witnesses.** Jeff Barron was Brook Mine's first witness. (Tr. at 645-646.) He is an engineer for Western Water Consultants and is licensed in Wyoming and Montana. (Tr. at 646 and 649.) He prepared the Brook Mine permit application. (Tr. at 650.) He generally testified to the application's contents and his experience with permitting.

12. Brook Mine's second witness, Kenneth Woodring, is the senior operating adviser for the Brook Mine. (Tr. at 809.) He helped prepare the permit application. (Tr. at 815-816.) He generally testified about highwall mining and the development of the permit application.

13. **Big Horn's Witnesses.** Jordan Sweeney was Big Horn's first witness. (Tr. at 834.) He is the regulatory affairs manager for Lighthouse Resources (Big Horn's parent company) and the general manager of the Big Horn Mine (Tr. at 835-36.) He generally testified to Big Horn's concerns and requested permit conditions.

14. Big Horn's second witness, Paul Joseph Gerlach, testified as an expert witness in hydrology and hydrogeology related to coal mine permitting. (Tr. at 902 and 907; Ex. BHC 9.) He is president of Aqua Terra Consulting and is a licensed professional geologist in Wyoming. (Tr. at 902 and 906; Ex. BHC 8.) He helped prepare Big Horn's objection letter. (Tr. at 910.) He generally testified about hydrologic issues related to the permit application.

15. **PRBRC's Witnesses.** The first three witnesses PRBRC called are landowners near the proposed mine: John Buyok, Brooke Collins, and Anton Bocek. (Tr. at 1010, 1068, and 1088.) PRBRC's fourth witness was Gillian Malone, who recreates in the area. (Tr. at 1115.) The witnesses expressed concerns about the proposed mine's potential impacts with regard to water, subsidence, blasting, traffic, and recreation.

16. PRBRC's fifth witness, Dr. Gennaro Marino, is president and chief engineer of Marino Engineering Associates and was called as an expert in geotechnical engineering. (Tr. at

1191-92 and 1198.) He is a licensed professional engineer in Wyoming and multiple other states. (Tr. at 1193.) He wrote a report for PRBRC. (Tr. at 1199-1200; Exs. PRBRC 1, 12, 13, and 14.)

17. PRBRC's sixth witness, Dr. Carol Bilbrough, is program manager for the Division's support services and was superficially involved in the permit application. (Tr. at 1298-1300.)

18. PRBRC's seventh witness, Sue Spencer, is a professional geologist licensed in Wyoming. (Tr. at 1314 and 1323.) She testified that Mr. Wireman's expert report and testimony met the standards of a Wyoming professional geologist. (Tr. at 1323.)

19. PRBRC's eighth and final witness, Mickel Wireman, is a groundwater analyst specializing in legacy mining hydrology. (Tr. at 1327, 1329-32.) He is not a licensed professional geologist in Wyoming. (Tr. at 1323, 1461.) He testified about the coal seams' hydrology and the data and analyses he would have collected and performed had he characterized the site.

20. **Fishers' Witness.** Mary Brezik-Fisher lives near the proposed mine. (Tr. at 1133-34.) She stated similar concerns to PRBRC's landowner witnesses.

C. Description of Brook Mine Permit and Process

21. **Description of Proposed Mine.** The Brook Mine would be located about eight miles north of the City of Sheridan, Wyoming. (Tr. at 49.) Most of the mine would lie north of the Tongue River and Interstate 90, with the southeastern portion of the permit area sitting adjacent to the Tongue River. (E.g., Ex. DEQ 12-139; Tr. at 49.) The Brook Mine permit area would cover around 4,550 acres. (Ex. DEQ 1-051; Tr. at 50.) The proposed mine would annually produce about 2 million tons of coal. (Tr. at 276-77.) The mine has a predicted life of 12 to 13 years. (Tr. at 51.)

22. **Description of Permit Application.** The permit application consists of 12 volumes. (Exs. DEQ 1 through 12; Tr. at 61.) Volumes I, IA, and II contain appendices A, B, C,

and E, and deal with adjudication, legal aspects of the permit area, landowner interrelationships, and related maps. (Exs. DEQ 1 through 3; Tr. at 62.) Volumes III through X contain appendices D1 through D11, which discuss baseline information on land use, history, archaeological resources, climatology, topography, geology, overburden, hydrology, soil resources, vegetation inventory, wildlife, wetlands, and AVFs. (Exs. DEQ 4 through 11; Tr. at 62-64.)

23. **Mine Plan.** The permit application also contains a mine plan. (Ex. DEQ 12; Tr. at 64.) Among other things, the mine plan includes maps identifying the affected areas and features of the mine. (Ex. DEQ 12-129 to -147.) It also describes the mining sequence and mining methods used at the proposed mine. (Tr. at 121; Ex. DEQ 12-028.) Mr. Kristiansen testified that, generally, mining will proceed moving westward from the east side of the proposed permit area. (Tr. at 121-22; Ex. DEQ 12-129 and -134.) The first area to be mined is called the TR-1 trench and it is located in the southeast corner of the proposed permit area. (Tr. at 121; Ex. DEQ 12-129.)

24. The proposed mine would predominantly use a method known as “highwall mining,” which is similar to auger mining and regulated as such. (Ex. DEQ 12-035; Tr. at 50 and 117-19.) Mr. Kristiansen and Mr. Barron testified that highwall mining begins by digging a box cut down to the coal seam. (Tr. at 50-51 and 654.) A remotely-operated highwall miner unit then mines tunnels up to 2,000 feet into “panels” of the exposed coal seam perpendicular to the trench. (Tr. at 50-51, 118-19, 125-26, and 654-55.) Walls (or “webs” or “pillars”) of coal are left unmined between the tunnels to provide support and prevent subsidence, with wider “barrier pillars” periodically placed to offer extra safety between sets of tunnels. (Tr. at 50-51, 120, 656, and 819.) The mine plan estimates that this method will recover 40% to 65% of the coal. (Ex. DEQ 12-035.)

25. **Reclamation Plan.** The permit application also contains a reclamation plan, which the Department uses to enforce reclamation of the permit area to achieve the post-mine land use.

(Tr. at 175-76; Ex. DEQ 13.) The Brook Mine's post-mine land uses will mostly be agricultural, primarily grazing. (Tr. at 176; Ex. DEQ 13-014.) The reclamation plan discusses post-mining grading, revegetation, and facility disposal. (Ex. DEQ 13-016 to -018, -023 to -041, -074, and -075.) The plan states the reclamation schedule and sequence. (Ex. DEQ 13-075, -076, and -114.)

26. Rather than disturbing the TR-1 area in years 1 and 2 and waiting to reclaim it until between years 12 and 16, Big Horn requested that Brook be required to reclaim the area immediately after mining and not use the pit as a water source. (Ex. BHC 3-008 and -009; Tr. at 859.) Mr. Kristiansen stated that reclaiming the pit immediately would pinch off a major water source for dust suppression, and that the pit would be reclaimed eventually. (Tr. at 192-93.)

27. **Permit Application Process.** Mr. Kristiansen testified that Brook filed the permit application in October of 2014, and the Division found that the application was complete on November 3, 2014. (Tr. at 52.) The Division then began their technical review and comment process. (*Id.*) The application had six rounds of comments and responses before the Division determined the application was suitable for publication. (Tr. at 45 and 58; Ex. DEQ 34.)

28. Mr. Kristiansen worked with other Department employees and agencies with expertise in different subjects to review the permit application. (Tr. at 53-54.) Alan Edwards, the Department's deputy director, acted as the Division's Administrator for the application. (Tr. at 55.)

29. In December of 2016, the Division determined that the application was suitable for publication and notice of the public comment period was published. (Tr. at 52-53.) The objectors filed timely objections before January 27, 2017. (Exs. BHC 3, Fishers 26, and PRBRC 1.)

D. Overlapping Permits

30. In the TR-1 area, Brook Mine's proposed permit boundary will overlap with Big Horn's existing permit boundary. (Ex. DEQ 13-075.) Mr. Kristiansen testified that overlapping

permits are not uncommon and that the Department regulates each mine in the overlap area so that the party responsible for the reclamation liability provides a bond for that liability. (Tr. at 154-55 and 189.) He testified that Brook will have to bond for everything they do in that area. (Tr. at 188-89; Ex. DEQ 13-075.) The reclamation plan states that each party must separately and fully bond the areas disturbed by their mining activities and the final party to disturb an area will have final responsibility to reclaim that disturbance. (Ex. DEQ 13-075.) The mine plan includes a statement, “Agreements between the permittees are located in the Adjudication File.” (Ex. DEQ 12-088.)

31. In its objection letter, Big Horn notes that it has not consented to overlapping permit boundaries. (Ex. BHC 3-002.) Mr. Sweeney testified that the application does not actually contain any agreement between Big Horn and Brook addressing operations and reclamation in the overlap area. (Tr. at 865-66 and 868-69; Ex. BHC 7.) Big Horn requested a permit condition to amend the application to specify Big Horn’s and Brook’s respective responsibilities on the lands in both of their permits. (Ex. BHC 5-003.) Big Horn also requested a change to the Mine Plan to reflect that a joint-use agreement does not exist between Big Horn and Brook. (*Id.*)

E. Surface Water Issues

32. **Surface Water Baseline Information.** The permit application contains several sections detailing baseline surface water quantity and quality data. Appendix D6 includes a narrative describing the hydrological baseline. (Ex. DEQ 6-011 to -022.) The permit application notes that two monitoring stations each on Slater Creek and Hidden Water Creek were used to collect baseline data. (Ex. DEQ 6-017 to -019.) It also includes several tables, exhibits, and addenda containing data and analysis of the baseline hydrology. (Exs. DEQ 6-038 to -057, -086 to -089, -092 to -094, and -165 to -236.)

33. The objectors generally allege that this baseline data is not adequate. In particular, PRBRC alleged in its objection letter that monitoring stations should have been operated longer and that Appendix D6 should include more hydraulic conductivity data. (Ex. PRBRC 1, at 8.)

34. Mr. Kunze testified about the permit application's baseline hydrology. Mr. Kunze testified that Brook collected baseline data according to Guideline 8, the Division's guideline on baseline surface water monitoring. (Tr. at 394-45, Ex. DEQ 22.) Beyond what Guideline 8 recommends, Brook submitted additional data from a USGS peak flow gauge on Slater Creek and data collected by the Big Horn mine on Hidden Water Creek. (Tr. at 396, Ex. DEQ 6-039.)

35. **Surface Water Monitoring Stations.** The permit application commits to two monitoring stations each on Slater Creek and Hidden Water Creek. (Ex. DEQ 12-062 (citing Ex. DEQ 6-017 to -019).) In addition, the application commits to using two USGS gaging sites on the Tongue River: one at Monarch, and one near the Wyoming-Montana state line. (Ex. DEQ 12-112.)

36. PRBRC requested in their objection letter that water quality sampling stations be established on the Tongue River near the upstream and downstream boundaries of the permit area. (Ex. PRBRC 1, at 8.) Ms. Brezik-Fisher also objected to the way the Tongue River would be monitored. (Tr. at 1162-63); (Ex. Fisher 26, at 3.)

37. At the hearing, Mr. Kunze testified that he did not consider additional monitoring stations on the Tongue River to be required by the Act or the Division's coal rules and regulations ("*Coal Rules*"). (Tr. at 411.) However, he recommended that, rather than use the USGS gaging sites on the Tongue River as proposed, the mine use new monitoring stations. (Tr. at 411-12.) Two monitoring stations would be installed on the Tongue River near the upstream and downstream edges of the permit boundary and one station would go on Goose Creek. (Tr. at 411-12.)

38. **Hydrologic Control Measures.** The permit application commits to several hydrologic control measures to prevent impacts to surface water quality and quantity in Mine Plan section MP.5. The mine plan details the use, design, and location of sedimentation impoundments (or “sediment ponds”), flood control reservoirs, and diversions. (Ex. DEQ 12-039 to -052; DEQ 12-163 to -082.) The mine plan also discusses the use of alternative sediment control measures (“ASCMs”). (Ex. DEQ 12-149 to -162.) Finally, the mine plan describes a 100-foot buffer around Slater Creek that is designed to protect it from impacts from mining. (Ex. DEQ 12-139.)

39. Several objectors alleged in general their concerns about impacts to surface water quantity and quality. In particular, Mr. Gerlach wrote in his expert report that Mine Plan section MP.5 does not provide an alternative plan to control surface water flows if groundwater inflow exceeds the design capacities of the hydrologic control measures. (Ex. BHC 9-005.)

40. Mr. Kunze testified that a licensed professional engineer must design and supervise the construction of sediment ponds, flood control reservoirs, and diversions. (Tr. 401-03.) He testified that sediment ponds must be designed in accordance with Guideline 13, the Division’s guideline on sediment pond design. (Tr. at 401.) He testified that ASCMs must be designed in accordance with Guideline 15, the Division’s guideline on ASCM design. (Tr. at 405-07.)

41. Mr. Kunze testified that ASCMs will not be the sole method of hydrologic control within half a mile of Class II streams as designated by the Water Quality Division. (Tr. at 405-07.) The Water Quality Division has designated Tongue River and Goose Creek as Class II streams. (Tr. at 405-07.) Mr. Kunze testified that sediment ponds will be inspected quarterly and after significant storm events, defined as 1.5 inches of precipitation. (Tr. at 402-03.) He testified that ASCMs will be inspected monthly and during regular quarterly inspections. (Tr. at 407.)

42. **Replacing Affected Surface Water Supplies.** The permit application declares that existing uses of the Tongue River and Goose Creek are not expected to be impaired. (Ex. DEQ 12-055 to -059.) Several objectors were concerned that the mine could damage surface water rights.

43. Mr. Kunze testified that the highwall mining method will only directly disturb 0.2 percent of the Goose Creek and Tongue River watershed. (Tr. at 397.) The mine will employ hydrologic control measures to protect flows during the life of the mine. (Tr. at 401 to 403.) Mr. Kunze testified that he modeled post-mining flows and that they would be almost identical to pre-mining flows. (Tr. at 410.) In the event that the mine impairs a water right, Brook must replace the water with a source of similar quality and quantity. (Tr. at 409.)

F. Groundwater Issues

44. **Groundwater Baseline Information.** The permit application contains a description of the geology in the permit area, including the presence or absence of groundwater in the different strata. (Ex. DEQ 5-016 to -020.) The application also contains information on the hydrology in the permit area, including water levels, groundwater movement, recharge and discharge areas, and information about baseline water monitoring. (Ex. DEQ 6-023 to -031.) Mr. Kristiansen stated that Brook consulted with the Department to select the baseline groundwater monitoring sites before they were drilled. (Tr. at 97; Ex. DEQ 6-024 and -025.) The application includes a description that the overburden in the permit area is dry. (Ex. DEQ 6-023 and -024.) Mr. Kristiansen testified that about 70 to 80 percent of the permit area is dry. (Tr. at 337.)

45. Big Horn argued that the application lacks sufficient baseline groundwater information because it does not include information specifically from the TR-1 area. (Tr. at 211-12 and 939-40.) Mr. Kristiansen agreed that Brook had not drilled for groundwater samples near the TR-1 trench. (Tr. at 210.) Mr. Gerlach testified that the application could not have sufficient

baseline without information about the TR-1 area, which contains backfill from a reclaimed Big Horn pit. (Tr. at 939-40; Ex. BHC 14.) He stated that Brook should have used data from Big Horn's 2002 groundwater restoration document ("GRD") to characterize the groundwater in the TR-1 area. (Tr. at 927-29 and 940-41; Ex. BHC 15.) He also speculated that the application's groundwater model would have been improved if it included GRD information. (Tr. at 954.)

46. Dr. Kuchanur testified that he reviewed the GRD when reviewing Brook's model, but determined that the GRD and the model were made for two different purposes and the data in the GRD were not reliable inputs for the model. (Tr. at 1464-66 and 1475-80.) However, he used the GRD to cross-check the model's results and it supported them. (Tr. at 1466 and 1472-75.)

47. **Groundwater Drawdowns.** The permit application identifies and maps the groundwater rights near the mine. (Ex. DEQ 1-372 to -412; Ex. DEQ 3-012 and -014; Tr. at 78-80.) It also includes a model to predict drawdowns to nearby wells. (Ex. DEQ 12-183 and -251.)

48. The objectors raised concerns that the drawdowns would harm their wells. (*E.g.*, Tr. at 1039 and 1104.) Also, Mr. Gerlach speculated that mining in the TR-1 trench would draw water from the Tongue River into the trench and the coal seams being mined. (Tr. at 947-52.)

49. Dr. Kuchanur testified that the drawdowns predicted in the groundwater model were small. (Tr. at 485 and 488-89; Ex. DEQ 12-187 and -251.) He testified that the groundwater model conservatively estimated that the peak pit inflow that will occur at the Brook Mine would be in year 7 and would only be 0.22 cubic feet per second ("cfs"). (Tr. at 487 and 1470; Ex. DEQ 12-254.) He stated that 0.22 cfs was small even when compared with the Tongue River's lowest flow rate in the last 10 years of 100 cfs. (Tr. at 488-89.) He also stated that the GRD concluded that backfill in the TR-1 area took 23 years to recharge, which was only 0.06 cfs per year and is in line with the drawdown estimates in Brook's model. (Tr. at 1469-71; Ex. BHC 15-009.)

50. **Replacing Affected Groundwater Supplies.** Dr. Kuchanur testified about the commitment to replace “any adjudicated water right” that is disturbed or affected by the mining operations. (Tr. at 500; Ex. DEQ 12-062.) He stated that the Department agrees with objectors that the language should change to cover all valid rights, and not just adjudicated rights. (Tr. at 500.)

G. Alluvial Valley Floors (“AVF”)

51. The objectors raised concerns that the Department had not evaluated all potential AVF locations near the permit area. (PRBRC’s Prehearing Memo. at 9.) The objectors also argued that the potential AVFs that the Department had not designated would be affected by mining. (*Id.*) Mr. Wireman speculated that in the western part of the permit area, the coals “probably subcrop” in the alluvium of Slater Creek and the Tongue River, and hydrologically connect the coals and the river. (Tr. at 1388.) He expressed concerns that dewatering the coal would affect Slater Creek, Hidden Water Creek, and the Tongue River alluvium and potential AVF. (Tr. at 1362-65, 1374-76, 1380-81.) He expressed concern that mining could irreversibly change hydrologic flows underground. (Tr. at 1370-72.)

52. Mr. Kristiansen testified that AVFs are drainages that have the ability to be farmed. (Tr. at 105.) He testified about AVF determinations in four areas in or near the permit area. (Tr. at 108-16; Ex. DEQ 11-031.) First, the Division declared part of the Tongue River Valley on the east side of the Brook Mine permit area to be an AVF as part of Big Horn Mine’s operations. (Tr. at 109; Ex. DEQ 11-010.) Brook will disturb this AVF with an overburden pile and sediment pond, but it will also monitor, maintain, and restore the AVF. (Exs. DEQ 12-090, -092 to -094, and -139, and 13-073 and -074.) Mr. Barron stated that AVFs that are not significant to farming can be disturbed but must be reclaimed. (Tr. at 680-81.) The reclamation plan commits to maintaining the AVFs’ essential hydrologic functions and restoring flows to AVFs. (Ex. DEQ 13-073 and -074.)

53. Second, the Department determined that an area along Hidden Water Creek in the permit area is not an AVF. (Tr. at 113-14; Ex. DEQ 11-021.)

54. Third, an area along Slater Creek within the permit area was determined to be an AVF. (Tr. at 110-12; Ex. DEQ 15.) However, Mr. Kristiansen testified that the Slater Creek AVF is not going to be affected by mining operations and, therefore, was not required to be designated in the application. (Tr. at 112-13.) The Slater Creek AVF will not be affected because the surface activities are located away from the AVF and highwall mine panels will terminate underground at least 100 feet from the AVF part of Slater Creek. (Tr. at 156-57; Exs. DEQ 12-131, and 15-005.)

55. Fourth, Mr. Kristiansen stated that an area lying south of the permit area along the Tongue River is potentially an AVF, but is not going to be affected by mining and does not have to be designated in the application. (Tr. at 109 and 114-16; Ex. DEQ 16-002.) The determination that this area would not be affected by mining was based on the information in the permit application, the lack of discharge, and the lack of affected area outside of the permit boundary. (Tr. at 266; *see* Exs. DEQ 12-091 to -092, 13-073, and 16-002.) Dr. Kuchanur testified that, based on groundwater modeling, he does not believe there is a hydrologic connection between the Carney coal seam and the surface water of the Tongue River. (Tr. at 554-55.) Mr. Kristiansen stated that the Department would evaluate and designate additional AVFs if there were indications that the potential AVF lands would be affected by mining operation. (Tr. at 266.)

H. Subsidence

56. The application identifies the location of existing or abandoned mines and includes baseline information on geology. (Ex. DEQ 3-011 and DEQ 5; Tr. at 77-78.) The mine plan also includes a subsidence control plan. (Tr. at 666; Ex. DEQ 12-319 to 333.)

57. The objectors criticized the amount of baseline information in the application and the detail in the subsidence control plan. Mr. Sweeney testified that overburden sampling was not conducted in the TR-1 area and that it should be required. (Tr. at 861-62.) Dr. Marino testified that, in his opinion, the application needs more information to analyze the likelihood of future subsidence. (Tr. at 1200.) Regarding the subsidence control plan, Dr. Marino opined that the plan does not demonstrate that it would control the subsidence. (Tr. at 1228.) He also testified that he has never seen the Mine Safety and Health Administration (“MSHA”) referenced in a permit application as the entity that approves a mine for surface subsidence. (Tr. at 1203.)

58. Mr. Kristiansen testified that the permit application accurately characterizes the geology in and around the permit area. (Tr. at 93.) He stated that the application describes the characteristics of the overburden and coal in the permit area, including geologic hazards. (Ex. DEQ 5-017 to -021; Tr. at 88-91.) He stated that the Department approved locations of drill holes for overburden sampling with a tighter configuration than normal. (Tr. at 91-92.) Although Brook was not able to access all of the planned drilling locations, such as the TR-1 area, the Department was satisfied by the holes Brook drilled for the purpose of collecting pre-application information. (Tr. at 92-93 and 186-88.) Mr. Barron and Mr. Woodring testified that Brook will conduct additional geologic sampling and testing of the roof, coal seams, and floor material in the locations of each highwall mine panel prior to mining. (Exs. DEQ 5-018 and 12-032; Tr. at 662 and 818.) That will include sampling near the TR-1 trench. (Tr. at 663-64.)

59. Mr. Kristiansen testified that the subsidence control plan analyzes the potential for subsidence within the mine area. (Tr. at 162; Ex. DEQ 12-322 to -326.) He described his training from the Office of Surface Mining Reclamation and Enforcement (“OSMRE”) on reviewing subsidence control plans. (Tr. at 163-65; Exs. DEQ 17 through 20.) He stated that based on

computer models and using formulas developed by OSMRE, the Brook Mine was determined to be a non-subsiding mine. (Tr. at 162 and 169.) He testified that historic underground mines in the area were considered in the plan's analysis and that Brook Mine's highwall panels would be at least 500 feet away from known underground workings. (Tr. at 169-71; Ex. DEQ 12-322 to -326.)

60. Mr. Kristiansen and Mr. Barron stated that the plan also includes how Brook would monitor and address subsidence, if it does occur. (Tr. at 171-72 and 676; Ex. DEQ 12-326 and -327.) Mr. Barron testified that the permit application commits to designing web and barrier pillars to comply with the mine's ground control plan approved by MSHA. (Tr. at 661-63; Exs. DEQ 5-018 and DEQ 12-322.) He stated that MSHA requires highwall miner ground control plans to meet certain subsidence-related standards, such as a 1.3 stability factor. (Tr. at 670-74; Ex. Brook 10d.)

I. Blasting

61. The permit application contains a blasting plan and schedule. (Ex. DEQ 12-073 to -082.) The blasting plan provides that the mine will comply with all federal and state laws regulating explosive storage, handling, preparation, and use. (Ex. DEQ 12-074.)

62. All of the objectors expressed concerns about blasting. Mr. Buyok and Ms. Collins expressed concerns that blasting could exacerbate historical subsidence. (Tr. at 1022, 1070.) Ms. Malone testified that she worried that blasting would require Brook Mine to shut down Interstate 90. (Tr. at 1118.) Ms. Brezik-Fisher, Mr. Bocek, and Ms. Collins, as well as Big Horn, expressed support for a condition requiring Brook Mine to use seismographs to monitor vibrations from blasting on request. (Tr. at 858-60, 1091-93, 1086-87, and 1165-66.)

63. Mr. Emme testified about the mine's blasting plan. He stated that the rules only allow airblast and ground vibrations that would not damage structures or wells. (Tr. at 581-82.) He testified that blasts may cause a house to shake but cannot damage it, and explained that day-to-

day events like high wind or slamming doors would cause stronger vibrations. (Tr. at 581-82, 584.) He explained that Wyoming regulations do not require a detailed blasting plan listing exact specifications of explosives, but rather that they allow a mine flexibility for each shot. (Tr. at 585.) He testified that Brook must publish notice of when blasting will occur, how access to the area will be restricted, and the operator's contact information. (Tr. at 585.)

64. Mr. Emme testified that he was not aware of a single incident where blasting was proven to impact a water well, though companies often settle such claims. (Tr. at 578, 607-08.) He testified based on his knowledge and experience as a blasting expert that the vibrations from blasting at the mine would likely not cause subsidence in historic mines. (Tr. at 602.) He testified that the Department has, in the past, used seismographic monitors to measure vibrations near structures to ensure that the vibrations do not exceed regulatory limits. (Tr. at 618.)

J. Fire Control Plan

65. The mine plan contains a fire control plan, which addresses fire prevention, control equipment, and control procedures. (Ex. DEQ 12-312 to -317.) Mr. Kristiansen testified that MSHA, not the Department, is the regulator that ensures that a fire is safely extinguished and prevented from returning. (Tr. at 159-61.) Mr. Barron testified that there are no known underground coal fires near the proposed operation, but that if one was encountered, extinguishing it would probably be possible. (Tr. at 691-93.) He stated that the fire control plan gives the operator latitude to use the best practices to deal with a fire. (Tr. at 694-95.)

66. The objectors questioned Mr. Barron's basis for concluding that there are no underground coal fires near the permit area. (Tr. at 722-23.) Mr. Barron acknowledged that he and his company had not independently surveyed whether mine fires were present. (Tr. at 716 and 722-

23.) Big Horn requested a permit condition requiring Brook to map underground coal fires within 500 feet adjacent to the highwall mining areas prior to mining. (Ex. BHC 5-002; Tr. at 859-60.)

K. Traffic

67. The application includes a description of the roads the mine will use to transport coal from the permit area. (Ex. DEQ 12-025 to -027, and -131.) The mine plan commits Brook to coordinate with the Wyoming Highway Department when constructing access roads joining with public roads. (Ex. DEQ 12-026.) Mr. Bocek testified that he uses a frontage road next to Interstate 90 and was concerned the Brook Mine would increase traffic. (Tr. at 1090-91.) Ms. Brezik-Fisher testified that she had heard an estimate of around 200 semi-trailer trips per day. (Tr. at 1166.)

68. Mr. Kristiansen testified that coal will be transported from Brook Mine by semi-trailers. (Tr. at 147.) He testified that the application does not contain any road use agreements between Brook and government entities, but such agreements are not required to be made or placed in the application. (Tr. at 151-52.) Mr. Barron agreed that there were no road use agreements in the application. (Tr. at 701-02.)

L. Recreational Uses

69. Ms. Malone testified about the Kleenburn Recreation Area and other recreation near the permit. (Tr. at 1115-16.) She stated that she was not aware of how Brook was protecting recreation and speculated that some recreation areas may close due to mining. (Tr. at 1118-19.)

70. The permit application includes an evaluation of the current and past land uses near the proposed permit area, including recreational use. (Ex. DEQ 4-010 and 4-013 to -015; Tr. at 271-72.) The Kleenburn Recreation Area is located south outside of the permit area. (Ex. DEQ 4-041.) The lands will be reclaimed so that conditions facilitate post-mine recreation replicating pre-mine recreation. (Ex. DEQ 13-015.) Hunting walk-in areas will be re-established post-mining. (*Id.*)

O. Bonding

71. **Reclamation Bond.** In their pre-hearing memorandum, PRBRC alleged that the Department had not yet calculated a reclamation bond amount. (*PRBRC's Pre-Hearing Memo.* at 9.) PRBRC alleged that this frustrated public review. (*PRBRC's Pre-Hearing Memo.* at 9.)

72. Mr. Emme testified that the Department must set a bond amount before mining can begin. (Tr. at 586-87, 610.) He testified that reclamation bonds must provide sufficient funding to reclaim a mine's present operations and for its projected disturbance for 12 months. (Tr. at 587.) In Brook's first operating year, the mine will disturb 30 acres; the mine offered a reclamation bond of \$371,000. (Tr. at 589-90.) Mr. Emme stated that this amount exceeds the amount that Guideline 12, the Division's guideline for reclamation bond calculation, would require. (Tr. at 590.)

73. **Surface Protection Bond.** The permit application contains a proposed calculation for a surface protection bond under Wyoming Statute § 35-11-416(a) for Big Horn's property within the permit area. (Ex. DEQ 1-066 to -101; Tr. at 66.) Brook's consultants prepared the calculation. (Tr. at 66.) The Department has not set the amount of a surface protection bond for Big Horn's property; it will do so after these proceedings, prior to permit issuance. (Tr. at 66-67.)

74. Mr. Sweeney testified that Big Horn has not waived its right to a surface protection bond by agreement with Brook. (Tr. at 873.) Big Horn asked for a condition requiring a surface protection bond be in place for its property prior to permit issuance. (Tr. at 871; Ex. BHC 5-003.)

P. Cumulative Hydrologic Impact Assessment ("CHIA")

75. Big Horn and PRBRC assert that the permit application has not been designed to ensure prevention of material damage to the hydrologic balance outside the permit area. (*Big Horn's Prehearing Memo.* at 2; *PRBRC's Pre-Hearing Memo.* at 8-9.) Mr. Kunze testified that the Department will make that finding after the Council has made a decision here. (Tr. at 413-414.)

76. PRBRC also complains that the CHIA for Brook Mine has not been completed yet. (*PRBRC's Pre-Hearing Memo.* at 8-9.) Mr. Kunze testified that the CHIA is not part of the permit application. (Tr. at 413 and 416.) He testified that the permit application must have a section detailing the probable hydrologic consequences of the mine, one of the data sources the Division uses to build CHIAs. (Tr. at 414-415; Ex. DEQ 12-055 to -059.) He testified that the probable hydrologic consequences section of the permit application contained no deficiencies. (Tr. at 415.)

IV. CONCLUSIONS OF LAW

1. PRINCIPLES OF LAW

A. Principles of Statutory Interpretation

77. Interpreting the meaning of a statute begins by looking at the plain and ordinary meaning of the words in the statute. *Bender v. Decaria*, 998 P.3d 953, 955 (Wyo. 2000). If the statute is unambiguous, then the plain meaning controls. *Id.* Every word in legislation is presumed to have a meaning, and a statute should be construed so that no part will be superfluous. *Basin Elec. Power Co-op. v. Bowen*, 979 P.2d 503, 509 (Wyo. 1999). “All statutes must be construed in pari materia and, in ascertaining the meaning of a given law, all statutes relating to the same subject or having the same general purpose must be considered and construed in harmony.” *BP America Prod. Co. v. Dept. of Revenue, State of Wyo.*, 2005 WY 60, ¶ 15, 112 P.3d 596, 604 (Wyo. 2005).

B. Surface Coal Mine Permit Application Process

78. An applicant seeking a surface coal mining permit must apply in writing to the Administrator. Wyo. Stat. Ann. § 35-11-406(a). The applicant has the burden of establishing that his application complies with the Act and all applicable state laws. Wyo. Stat. Ann. § 35-11-406(n).

79. After receiving an application, the Department determines if the application is “complete”, meaning that it “contains all the essential and necessary elements and is acceptable

for further review for substance and compliance” with the Act. Wyo. Stat. Ann. §§ 35-11-103(e)(xxii) and -406(e).

80. Next, the Division reviews the application’s substance to find whether it contains deficiencies. Wyo. Stat. Ann. §§ 35-11-103(e)(xxii) and -406(h). “‘Deficiency’ means an omission or lack of sufficient information serious enough to preclude correction or compliance by stipulation in the approved permit to be issued by the [D]irector[.]” Wyo. Stat. Ann. § 35-11-103(e)(xxiv). At the conclusion of this review, the Division may decide that the application is suitable for publication, deficient, or denied. *Id.* The phrase “suitable for publication” refers to the Division finding that an application complies with the requirements in the Act and the *Coal Rules* based upon the information known to the Division prior to public objections or comments. *Id.*

81. If the Division concludes that the application is deficient, the applicant may submit additional information to cure the deficiency. Wyo. Stat. Ann. § 35-11-406(h). There may be multiple rounds of Division review and applicant response until the Division either determines that the application is suitable for publication or denies the permit. *See id.*

82. Once an application is suitable for publication, the applicant publishes and mails notices of the application and the permit is subject to public comment. Wyo. Stat. Ann. § 35-11-406(j). Interested persons may comment on or object to the application in writing within 30 days after the notice’s last date of publication. Wyo. Stat. Ann. § 35-11-406(k). To resolve the objections, either the Director holds an informal conference or the Council holds a contested case hearing. *Id.*

83. If the Council holds a hearing, the Council “shall issue findings of fact and a decision on the application within sixty (60) days after the final hearing.” Wyo. Stat. Ann. § 35-11-406(p). After the Council issues its findings and decision resolving the objections, the

Administrator must review the application and the Council's decision and decide if he can make the seven required findings in Wyoming Statute § 35-11-406(n). The rules require the Administrator to also make three other findings at that time. *Coal Rules*, ch. 12, § 1(a)(iv) and (x). The Director may not approve the permit unless and until the Administrator makes the findings. Wyo. Stat. Ann. § 35-11-406(n) and (p).

84. No later than 15 days after he receives the Council's findings of fact and decision resolving the objections, the Director shall issue or deny the permit. Wyo. Stat. Ann. § 35-11-406(p). "In granting permits, the director may impose such conditions as may be necessary to accomplish the purpose of [the Act] which are not inconsistent with the existing rules, regulations and standards." Wyo. Stat. Ann. § 35-11-801(a). The rules also require the Director to place certain conditions on a surface coal mining permit. *Coal Rules*, ch. 12, § 1(a)(xviii)(A) through (E).

C. General Permit Application Requirements

85. **Permit Application.** The Act and the *Coal Rules* contain substantive requirements that an application must satisfy in order to be issued. *See, e.g.*, Wyo. Stat. Ann. § 35-11-406(a) and (b); *Coal Rules*, chs. 2, 3, 7, 12, and 19. An application must include baseline information on the applicant, the proposed mining operation, and lands inside and around the proposed permit area. Wyo. Stat. Ann. § 35-11-406(a) and (b). The applicant must also provide plans for mining operations and reclamation. Wyo. Stat. Ann. § 35-11-406(b); *Coal Rules*, ch. 2, §§ 5 and 6.

86. **Mine Plan.** The applicant must provide a plan for the mining operations, also referred to as a "mine plan", to describe how the applicant will conduct mining. Wyo. Stat. Ann. § 35-11-406(b); *Coal Rules*, ch. 2, § 5(a)(i). The applicant must map the affected areas and the locations of pits, buildings, operations, roads, and other features of the proposed mine. Wyo. Stat.

Ann. § 35-11-406(b)(v) and (viii); *Coal Rules*, ch. 2 § 5(a)(xvi). The applicant is also required to describe the sequence and timing of mining. *Coal Rules*, ch. 2, §§ 4(a) and 5(a)(i)(B).

87. **Reclamation Plan.** A permit application must include a plan for reclamation that identifies the post-mine land use. Wyo. Stat. Ann. § 35-11-406(b)(i); *Coal Rules*, ch. 2, § 6(a). The reclamation plan must describe post-mining operations, like grading and revegetating disturbed areas. Wyo. Stat. Ann. § 35-11-406(b)(ii), (iii), (iv), and (vii); *Coal Rules*, ch. 2, § 6(b)(ii), (iii), and (viii). The plan must provide a schedule and provide for prompt reclamation as mining progresses. Wyo. Stat. Ann. §§ 35-11-406(b)(xix) and -415(b)(ix); *Coal Rules*, ch. 2, § 6(a).

D. Overlapping Permits

88. Under Chapter 2, Section 5(a)(xviii) of the *Coal Rules*, when mine facilities, including overstrip areas, are shared by two or more separately permitted mining operations,

“[e]ach permittee shall bond the mine facilities unless the permittees sharing it agree to another arrangement for assuming their respective responsibilities. If such agreement is reached, the application shall include a copy of the agreement between or among the parties setting forth the respective bonding responsibilities of each party for the mine facilities. The agreement shall demonstrate to the satisfaction of the Administrator that all responsibilities under the Act and regulations for the mine facilities will be met.”

E. Surface Water Issues

89. **Surface Water Baseline Information.** The Act requires that mine permit applications include a description of annual rainfall, current surface waters, water rights, water uses, and a map showing water bodies and wells. Wyo. Stat. Ann. § 35-11-406(a)(vii), and 406(a)(ix). In addition, the *Coal Rules* require that mine permit applications include baseline monitoring information, including information on seasonal flow rates and the acreage of drainage areas, as well as data sufficient to identify seasonal variability in water quality. *Coal Rules*, ch. 2 § 4(a)(xi)(C) and (D).

90. **Surface Water Monitoring Stations.** Mine permit applications must include a surface water monitoring plan, identifying the quantity and quality parameters to be monitored, sampling frequency, and monitoring locations. *Coal Rules*, ch. 2 § 5(a)(viii)(D)(I).

91. **Hydrologic Control Measures.** The Act requires that mine permit applications describe how surface water will be diverted around affected lands when necessary to protect water quality or quantity. Wyo. Stat. Ann. § 35-11-406(b)(xiv). In addition, the rules require that permit applications include maps of locations of surface water hydrologic control methods, including sediment ponds, diversions, stream channels, and erosion control methods. *Coal Rules*, ch. 2 § 5(a)(i)(D)(IV). The rules also require that the permit describe the typical design of ponds. *Id.*

92. **Replacing Affected Surface Water Supplies.** The Act provides that if a surface coal mine operation proximately causes contamination, diminution, or interruption of a surface owner's domestic, agricultural, industrial, or other legitimate use of an underground or surface source, the operator must replace the water source. Wyo. Stat. Ann. § 35-11-415(b)(xii).

F. Groundwater Issues

93. **Groundwater Baseline Information.** A permit application must contain baseline information about the groundwater in and near the permit area. It must include a detailed description of the geology within the permit area, including details about groundwater located there. *Coal Rules*, ch. 2, § 4(a)(vii). It also must contain a characterization of the geologic strata including the results of test borings to show, among other things, the location of groundwater. *Coal Rules*, ch. 2, § 4(a)(viii). An application also must contain information on potentially-affected waters, including estimates of depth and quantity of groundwater, the thickness of known aquifers, and the recharge, storage, and discharge characteristics of the groundwater. *Coal Rules*, ch. 2, §

4(a)(xii)(A), (B), and (D). The application must describe the groundwater and geology on affected lands in enough detail to assess probable hydrologic consequences. *Coal Rules*, ch. 2, § 4(a)(xiv).

94. **Groundwater Drawdowns.** A permit application also must identify the locations of wells and subsurface waters. Wyo. Stat. Ann. § 35-11-406(a)(vii) and (ix); *Coal Rules*, ch. 2 § 4(a)(xiii) and (xvi). The application also must include a “determination of the projected result of proposed surface coal mining and reclamation operations, both on and off the mine site, which may reasonably be expected to change the quantity or quality of the surface and groundwater; the surface and groundwater flow, timing and availability[.]” *Coal Rules*, ch. 19, § 2(a)(i).

95. **Replacing Affected Groundwater Supplies.** The Act requires surface coal operations to replace landowners’ water supplies that are affected by the mining operations. Wyo. Stat. Ann. § 35-11-415(b)(xii).

G. Alluvial Valley Floors (“AVF”)

96. The Act defines alluvial valley floors. Wyo. Stat. Ann. § 35-11-103(e)(xviii). A permit application must contain enough information to demonstrate the presence or absence of AVFs within the permit area and in adjacent areas where AVFs “may reasonably be expected to be affected” by mining. *Coal Rules*, ch. 3, § 2(b). Prior to an application being suitable for publication, the Administrator must determine the existence and extent of an AVF within the permit area or on adjacent areas where the mining operation may affect waters that supply an AVF. *Coal Rules*, ch. 12, § 1(a)(i). The Administrator determines that an AVF exists on affected lands if: “[u]nconsolidated streamlaid deposits holding streams are present” and “[t]here is sufficient water to support subirrigation or flood irrigation agricultural activities.” *Id.*

97. If the Administrator determines that an AVF exists inside the permit area on affected lands, the application must include measures to comply with performance standards for

mining AVFs, which include preserving and reestablishing the “geologic, hydrologic and biologic characteristics that support the essential hydrologic functions” of designated AVFs. *Coal Rules*, ch. 3, § 2(c)(ix), and ch. 5, § 3(a). An operator must monitor AVFs during mining and until bond release, and also shall restore the essential hydrologic functions of AVFs on affected lands and preserve those functions of AVFs not on affected lands.” *Coal Rules*, ch. 5, § 3(b)(ii) and (c).

H. Subsidence

98. The applicant must have a professional geologist describe the geology of the permit area and adjacent areas. *Coal Rules*, ch. 2, § 4(a)(vii) and (viii). The applicant must describe the overburden, topsoil, subsoil, mineral seams, or other deposits. Wyo. Stat. Ann. § 35-11-406(a)(vii); *Coal Rules*, ch. 2, § 4(a)(x).

99. Auger mining is a type of surface mining under the Act. Wyo. Stat. Ann. § 35-11-103(e)(xx)(A). It may be limited or prohibited to minimize unwarranted subsidence. *Coal Rules*, ch. 5, § 6(b). For auger mining, subsidence control shall be provided as required by Chapter 7, Section 2 of the *Coal Rules*, which governs underground mines. *Coal Rules*, ch. 5, § 6(d).

100. Regarding subsidence control, Chapter 7, Section 2 requires that “[u]nderground mining activities shall be planned and conducted so as to prevent subsidence from causing material damage to structures, the land surface, and groundwater resources.” *Coal Rules*, ch. 7, § 2(b)(iii).

Chapter 7, Section 2(c) of the *Coal Rules* also requires that:

The operator of an underground coal mining operation shall submit a plan of underground workings The plan shall include maps and descriptions of significant features of the underground mine, extraction ratios, measures taken to prevent or minimize subsidence and related damage, areas of full extraction and other information, as required by the Administrator.

I. Blasting

101. The Act provides that the Division must have rules regarding providing notice of blasting; maintaining a log; limiting blasting to protect people, property, underground mines, and water flows outside the permit area; ensuring that blasting operations be conducted by trained and competent persons; and providing a pre-blast survey to any resident or owner of a dwelling or structure within half a mile of the permit area. Wyo. Stat. Ann. § 35-11-415(b)(xi). The *Coal Rules* supplement the Act. *Coal Rules*, ch. 6.

102. The rules require that applications include a blasting plan for the area to be mined, including how the operator will comply with Chapter 6's limitations on ground vibration and airblast. *Coal Rules*, ch. 2, § 5(a)(vii). The plan must also include information about the maximum amount of explosives detonated in any one blast; information about the nearest dwelling to any blasting area; a description of blasting monitoring, warning, and site access controls; a description of the procedure for recording and retaining a blast log; and a sample copy of public notices. *Id.*

J. Fire Control Plan

103. A mine plan must include a description of contingency plans developed to preclude sustained combustion of any materials constituting a fire hazard. *Coal Rules*, ch. 2, § 5(a)(iv). Wyoming Statute § 35-11-406(b)(ix) requires an applicant to provide a plan for insuring that:

materials constituting a fire, health or safety hazard uncovered during or created by the mining process are promptly treated or disposed of during the mining process in a manner designed to prevent pollution of surface or subsurface water or threats to human or animal health and safety. Such method may include, but not be limited to covering, burying, impounding or otherwise containing or disposing of the . . . dangerous material[.]

104. An applicant must identify the extent of active or inactive mines. Wyo. Stat. Ann. § 35-11-406(a)(ix); *Coal Rules*, ch. 2, § 4(a)(ix)(C). However, the Act and the *Coal Rules* do not require an applicant to survey or map the locations of existing underground coal fires.

K. Traffic

105. An applicant must include maps of public highways and existing and proposed roads. Wyo. Stat. Ann. § 35-11-406(a)(ix) and (b)(v); *Coal Rules*, ch. 2, § 4(a)(xvi). The applicant must describe mineral transport and the major equipment used for all aspects of the operations. *Coal Rules*, ch. 2, § 5(a)(i)(A). The Act and the *Coal Rules* do not require an applicant to have or provide road use agreements with governmental entities for public roads, and do not authorize the Department to regulate traffic on public roads. *See Coal Rules*, ch. 12, § 1(a)(iv)(D).

L. Recreational Uses

106. An applicant must identify the past, current, and post-mine land uses of the permit and surrounding areas. Wyo. Stat. Ann. § 35-11-406(a)(vii) and (b)(i); *Coal Rules*, ch. 2, § 4(a)(i), (a)(ii), and (a)(xvii). An applicant also must describe procedures to avoid public nuisance or endangering public safety, human or animal life, property, wildlife and plant life in or adjacent to permit. Wyo. Stat. Ann. § 35-11-406(b)(xiii).

N. Bonding

107. **Reclamation Bond.** The Act requires operators to file a reclamation bond with the Administrator before commencing mining. Wyo. Stat. Ann. § 35-11-417(a) through (c). The bond must be enough to assure that the mine performs all legal requirements. Wyo. Stat. Ann. § 35-11-417(a). This primarily includes the cost of reclaiming the land. Wyo. Stat. Ann. § 35-11-417(c)(i).

108. **Surface Protection Bond.** The Act provides that a mineral owner must execute a surface protection bond prior to permit issuance to protect the interests of the surface owner, unless the surface owner waives this requirement by agreement. Wyo. Stat. Ann. § 35-11-416(a).

O. Cumulative Hydrologic Impact Assessment (“CHIA”)

109. The Act provides that the Director shall not approve a surface coal mining permit unless the applicant affirmatively demonstrates and the Administrator finds that the proposed operation has been designed to prevent material damage to the hydrologic balance outside the permit area. Wyo. Stat. Ann. § 35-11-406(n)(iii). The Division has promulgated rules laying out the requirements for a CHIA, which is the analysis that permits the Administrator to make this finding. *Coal Rules*, ch. 19. The Council asked the parties for briefs discussing the applicability of Wyoming Statute § 35-11-406(n) to these proceedings. *Briefing Order* (June 13, 2017).

2. APPLICATION OF PRINCIPLES OF LAW

A. Surface Coal Mine Permit Application Process

110. **Permit Application Process.** Brook has completed all of the procedural steps required to this point. *See* Wyo. Stat. Ann. § 35-11-406(e) through (j); (*See* Tr. at 45, 52-55, and 58; Exs. BHC 3, Fishers 26, and PRBRC 1.) The Administrator is not yet required to make the findings under Wyoming Statute § 35-11-406(n) because how the Council resolves objections may affect the application and thus the required findings. Wyo. Stat. Ann. § 35-11-406(k), (n), and (p).

111. The Director shall issue or deny the permit within 15 days of receiving these findings of fact, conclusions of law, and decision. Wyo. Stat. Ann. § 35-11-406(p). The Director may issue the permit with conditions that are necessary to accomplish the purpose of the Act and which are not inconsistent with the existing rules and standards. Wyo. Stat. Ann. § 35-11-801(a).

B. General Permit Application Requirements

112. **Permit Application.** The application contains the required elements, including an adjudication file, baseline information, and mine and reclamation plans. *See* Wyo. Stat. Ann. § 35-11-406(a) and (b); *Coal Rules*, chs. 2, 3, 7, 12, and 19; (Exs. DEQ 1 through 12; Tr. at 61-64).

113. **Mine Plan.** The permit application's mine plan satisfies the applicable requirements in the Act and the *Coal Rules*. The mine plan includes the required maps of the mining operation. *See* Wyo. Stat. Ann. § 35-11-406(b)(v) and (viii); *Coal Rules*, ch. 2 § 5(a)(xvi); (Ex. DEQ 12-129 to -147.) It describes the mining sequence and the highwall mining method. *See* *Coal Rules*, ch. 2, §§ 4(a) and 5(a)(i); (Tr. at 121-22; Ex. DEQ 12-028, -035, -129, and -134.)

114. **Reclamation Plan.** The reclamation plan complies with the Act and the *Coal Rules* by identifying post-mine land uses, describing post-mining activities including grading, revegetation, and disposal of facilities, and including a reclamation schedule. *See* Wyo. Stat. Ann. §§ 35-11-406(b)(i), (ii), (iii), (iv), (vii), and (xix), and -415(b)(ix); *Coal Rules*, ch. 2, § 6(a), 6(b)(ii), 6(b)(iii), and 6(b)(viii); (Tr. at 176; Ex. DEQ 13-014, -016 to -018, -023 to -041, -074 to -076, and -114.) Although Big Horn has requested the TR-1 trench to be immediately reclaimed, the Council denies Big Horn's request because the trench is needed as a water source for mining activities, and even if it is used as a sump, it will still be reclaimed. (Tr. at 192-93.)

C. Overlapping Permits

115. The Act and the *Coal Rules* do not forbid mining permit areas from overlapping and they do not require permittees with overlapping permits to have agreements for reclamation responsibilities in the overlapping area. *See* *Coal Rules*, ch. 2, § 5(a)(xviii). However, if such an agreement exists, it must be provided to the Department. *Id.* The terms of the reclamation plan already require Brook to fully bond any disturbance it plans in the area where it and Big Horn's permit areas overlap. (Ex. DEQ 13-075.) Brook will be responsible for bonding and reclaiming its own disturbance, as will Big Horn. Therefore, the permit condition requested by Big Horn on the assignment of responsibility is unnecessary. However, the Council agrees that Brook should

correct the mine plan to state that the permit does not include an agreement between the companies. (See Tr. at 865-66 and 868-69; Ex. BHC 7; Ex. DEQ 12-088.)

D. Surface Water Issues

116. **Surface Water Baseline Information.** The permit application's baseline data collection complies with the requirements of the Act and the *Coal Rules*. The application includes a description of the permit area's annual rainfall. (Ex. DEQ 4-084 to -085, and -109.) It includes a description of current surface waters and water uses. (Ex. DEQ 6-011 to -017, and -092 to -094.) It includes a description of surface water rights. (Exs. DEQ 2-012 and DEQ 6-047 to -053.) It includes a map showing current water bodies and wells. (Ex. DEQ 2-012, -014, and -015.) This data satisfies the requirements of the Act. Wyo. Stat. Ann. § 35-11-406(a)(vii) and (ix). With respect to the *Coal Rules*, the permit application includes information on seasonal flow rates of surface waters. (Ex. DEQ 6-054 to -057.) It includes information on the acreage of drainage areas. (Ex. DEQ 6-011, -038, and -092.) It includes water quality information sufficient to identify seasonal variability. (Ex. DEQ 6-021 to -022, -087, and -203 to 235.) This data satisfies the requirements of the regulations. *Coal Rules*, ch. 2 § 4(a)(xi)(C) and (D). The objectors generally allege that the existing baseline data is not adequate, but additional baseline data is not required.

117. **Surface Water Monitoring Stations.** The permit application's surface water monitoring locations comply with the *Coal Rules*. The application includes a monitoring plan that identifies quantity and quality parameters, sampling frequency, and monitoring locations, as required by rule. *Coal Rules*, ch. 2 § 5(a)(viii)(D)(I); (DEQ 12-062 to -064, -112, and -144.)

118. Mr. Kunze suggested using three surface water monitoring stations in lieu of the USGS gaging sites on the Tongue River and Goose Creek in order to determine whether changes to the Tongue River were due to the mine's operations or due to Goose Creek's relatively lower

quality, although he stressed that they are not required by law. (Tr. at 411-12.) The Council agrees that additional monitoring stations are not required under the Act or the *Coal Rules*. (See Tr. at 411-12.) However, because the Department has suggested this condition, the Council will condition its decision in this matter on Brook submitting a revision to the permit within 150 days amending the location of its surface water monitoring stations.

119. **Hydrologic Control Measures.** The permit application adequately describes the hydrologic control methods that the mine will use to protect water quality and quantity. The permit application describes how Hidden Water Creek will be diverted around trench cuts. (Ex. DEQ 12-043 to -044.) This description satisfies the requirement that mine permit applications describe how surface water will be diverted around affected land. Wyo. Stat. Ann. § 35-11-406(b)(xiv). The permit application includes maps showing the location of hydrologic control methods that Brook proposes to use. (Ex. DEQ 12-139 to -143.) It also includes descriptions of the typical design of hydrologic control measures. (Ex. DEQ 12-149 to -181.) These maps and descriptions satisfy the Division's regulation requiring that a permit application describe the locations and typical design of hydrologic control methods. *Coal Rules*, ch. 2 § 5(a)(i)(D)(IV). These robust hydrologic control methods adequately address the objections regarding surface water quality.

120. **Replacing Affected Surface Water Supplies.** The Council finds that the mine is unlikely to affect surface water supplies, in light of Mr. Kunze's testimony. (Tr. at 397, 410.) If the mine proximately causes the contamination, diminution, or interruption of an underground or surface source of water for a surface owner, the Act requires the mine to replace the source. Wyo. Stat. Ann. § 35-11-415(b)(xii). No permit condition is necessary to ensure that the mine replaces contaminated or interrupted water sources, because the Act requires that the mine do so. *Id.*

E. Groundwater Issues

121. **Groundwater Baseline Information.** The permit application contains the required baseline information about groundwater. *Coal Rules*, ch. 2, § 4(a)(vii), (viii), (xii), and (xiv). (Exs. DEQ 5-016 to -020, and 6-023 to -031.) Although Big Horn’s GRD may have provided additional data points for the model, the law does not require that the application include the GRD, nor is the GRD reliable enough for modeling the proposed Brook Mine. (Tr. at 1464-66 and 1475-80.)

122. **Groundwater Drawdowns.** The permit application properly identifies nearby wells and groundwater. *See* Wyo. Stat. Ann. § 35-11-406(a)(vii) and (ix); *Coal Rules*, ch. 2 § 4(a)(xiii) and (xvi); (Ex. DEQ 1-372 to -412; Ex. DEQ 3-012 and -014; Tr. at 78-80.) It also includes a groundwater model and determines the projected result of mining and reclamation on groundwater both in and outside of the permit area. *See Coal Rules*, ch. 19, § 2(a)(i); (Ex. DEQ 12-183 and -251.) The model predicts that the proposed mine will have only small impacts on groundwater wells. (Tr. at 485 and 488-489; Ex. DEQ 12-187 and -251.) Based on Dr. Kuchanur’s testimony, the Council finds that the drawdowns to the Tongue River due to inflow into the TR-1 area will be minimal. (Tr. at 487-89 and 1469-71; Ex. DEQ 12-254; Ex. BHC 15-009.)

123. **Replacing Affected Groundwater Supplies.** The Council agrees that the Brook’s duty to replace groundwater supplies should expand to protect all valid water rights, not just adjudicated rights. *See* Wyo. Stat. Ann. § 35-11-415(b)(xii); (Ex. DEQ 12-062.)

F. Alluvial Valley Floors

124. Contrary to the objections, the applicant and the Department have met the AVF application requirements by evaluating and declaring all AVFs within the permit area or on adjacent areas that would be affected by mining. *See Coal Rules*, ch. 3, § 2(b), and ch. 12, § 1(a)(i); (*See* Tr. at 109-16, 156-57, 266, and 554-55; Exs. DEQ 11, 12, 13, 15, and 16.)

125. Inside the permit area, the application identifies the designated AVF along the Tongue River in the eastern corner of the area. (Tr. at 109; Ex. DEQ 11-010.) The application provides for protecting, monitoring, and restoring that AVF, as required. *Coal Rules*, ch. 3, § 2(c)(ix), and ch. 5, § 3(a); (See Exs. DEQ 12-092 to -094, and 13-073 and -074.) It also includes the finding that the Hidden Water Creek area is not an AVF. (Tr. at 113-14; Ex. DEQ 11-021.)

126. The Department also evaluated and then designated an area of Slater Creek within the permit area as an AVF. (Tr. at 110-12; Ex. DEQ 15.) The separation between surface mining activities and the Slater Creek AVF means that it will not be affected by mining. (Tr. at 112-13 and 156-57; Exs. DEQ 12-090 to -092, 13-073, and 15-005.)

127. Outside of the permit area, the Department determined that the Tongue River Valley south of the permit area would not be affected by mining and does not yet have to be designated as AVF. (Tr. at 109 and 114-16; Ex. DEQ 16-002.) Despite Mr. Wireman's suspicions, the Department demonstrated through groundwater modeling and analysis of the application that those lands would not be affected by mining. (Tr. at 266 and 554-55; Exs. DEQ 12-090 to -092, 13-073, and 16-002.) Because those lands are outside the permit area and will not be affected, the potential Tongue River AVF lands did not need to be categorized prior to the permit's approval. See *Coal Rules*, ch. 3, § 2(b), and ch. 12, § 1(a)(i). The Department may evaluate those lands for AVF in the future if mining operations change and will potentially affect the area. (Tr. at 266.)

G. Subsidence

128. Although baseline overburden sampling was not conducted in the TR-1 area, Brook's sampling was done on a tighter configuration than normal, and the application commits Brook to conduct and submit additional sampling for each mine panel prior to mining it, including the TR-1 panels. (Tr. at 91-93 and 186-88; Ex. DEQ 12-032.) Overall, the application contains

sufficient baseline data to characterize the overburden in the permit area. *See* Wyo. Stat. Ann. § 35-11-406(a)(vii); *Coal Rules*, ch. 2, § 4(a); (*See* Ex. DEQ 5-017 to -021.)

129. As a highwall mine, the Book Mine is subject to the requirements for auger mining related to subsidence. *Coal Rules*, ch. 5, § 6(d), and ch. 7, § 2(b)(iii) and 2(c). Although Dr. Marino testified that the subsidence control plan needs more analysis, the plan includes sufficient modeling and information to demonstrate that mining is planned so as to prevent subsidence from causing material damage to structures, the land surface, and groundwater resources. *See Coal Rules*, ch. 7, § 2(b)(iii); (*See* Ex. DEQ 5-018; Ex. DEQ 12-319 to -333.) The application also contains maps and descriptions of the mine workings, significant features of the mine, extraction ratios, and measures to be taken to prevent or minimize subsidence and related damage. *See Coal Rules*, ch. 7, § 2(c); (*See* Tr. at 162 and 171-172; Ex. DEQ 12-035, -129, -131, -134, and -322 to -327.) Although the *Coal Rules*' requirements for a subsidence control plan are general, MSHA sets specific standards for its ground control plans and Brook will have to comply with those. *See Coal Rules*, ch. 7, § 2(b)(iii) and 2(c); (Ex. Brook 10d.) The additional information or analysis requested by the objectors is not necessary for the mine permit application.

H. Blasting

130. The permit application contains the information required by the *Coal Rules*. The permit application generally describes the blasting practices, explosives to be used, and blasting operations. *Coal Rules*, ch. 2, § 5(a)(vii)(A); (Ex. DEQ 12-073 to -075.) The permit application explains that the maximum shot in any eight-millisecond period would be limited depending on the distance to the nearest structure. *Coal Rules*, ch. 2, § 5(a)(vii)(A)(I); (Ex. DEQ 12-080.) The application contains a list of structures within half a mile of the permit boundary. *Coal Rules*, ch. 2, § 5(a)(vii)(A)(II); (Ex. DEQ 03-008.) It contains a description of monitoring, warning, and site

access control equipment and procedures. *Coal Rules*, ch. 2, § 5(a)(vii)(C); (Ex. DEQ 12-077, -080, and -081.) It contains a description of the procedures and plans for recording blasting logs. *Coal Rules*, ch. 2, § 5(a)(vii)(D); (Ex. DEQ 12-080.) And it contains a sample public notice for blasting operations. *Coal Rules*, ch. 2, § 5(a)(vii)(E); (Ex. DEQ 12-338.)

131. Several of the objectors expressed concerns that the blasting could exacerbate subsidence at historic mines. Mr. Emme testified that based on his knowledge and experience as a blasting expert, the vibrations from blasting at the mine would not cause subsidence in historic mines. (Tr. at 602.) He stated that for landowners, normal, day-to-day events like high wind would cause more vibrations in structures than the mine's blasting. (Tr. at 584.) The Council credits Mr. Emme's expert opinion and finds that the mine will not likely exacerbate historical subsidence.

132. Several objectors requested a condition that Brook use seismographic monitors to monitor vibrations from blasting near structures on request. Emme testified that DEQ, rather than mine operators, has historically placed seismographic monitors near structures to ensure that the vibrations reaching those structures did not exceed regulations. (Tr. at 618.) The Council finds that a permit condition requiring Brook to use seismographic monitors near structures is not necessary.

I. Fire Control Plan

133. The fire control plan in the permit application contains a sufficient description of the contingency plans to extinguish flammable substances. *See Coal Rules*, ch. 2, § 5(a)(iv); (*See* Ex. DEQ 12-312 to -317.) The application's fire control plan contains sufficient procedures to ensure that materials constituting a fire hazard are addressed to prevent pollution or threats to human or animal health and safety. *See* Wyo. Stat. Ann. § 35-11-406(b)(ix). Brook Mine is not required to identify the locations of coal fires in or near the proposed permit area.

J. Traffic

134. The landowners' objections to traffic from the Brook Mine do not demonstrate an application deficiency. Brook has provided the required information about the roads it will use and the method of coal transportation. *See* Wyo. Stat. Ann. § 35-11-406(a)(ix) and (b)(v); *Coal Rules*, ch. 2, §§ 4(a)(xvi), 5(a)(i)(A), and 5(a)(xvi); (*See* Ex. DEQ 12-025 to -027 and -131; Tr. at 147.) Public road use agreements are not required for an application and the Department does not have authority to regulate traffic on public roads. *See Coal Rules*, ch. 12, § 1(a)(iv)(D).

K. Recreational Uses

135. The permit application adequately addresses Ms. Malone's objections on recreation. The application includes baseline information about recreational uses and commits to restoring pre-mining recreational opportunities and conditions as part of reclamation, including hunting walk-in areas. (*See* Ex. DEQ 4-010, 4-013 to -015, and 13-015.) The Kleenburn Recreation Area is outside the permit area and will remain accessible to the public. (Ex. DEQ 4-041.)

M. Bonding

136. **Reclamation Bond.** A reclamation bond is not required at this stage of the permitting process. *See* Wyo. Stat. Ann. §§ 35-11-406(h) through (k) and (p), and -417. The Administrator must set a reclamation bond amount, and Brook must file a bond for that amount, before mining may commence. Wyo. Stat. Ann. § 35-11-417. The operator's proposed bond amount exceeds what the Department would have required under its bonding guideline. (Tr. at 589-90.) No permit condition is necessary to ensure that Brook post a reclamation bond, because the Act prohibits mining without such a bond. Wyo. Stat. Ann. § 35-11-417.

137. **Surface Protection Bond.** A surface protection bond is not required to be in place at this stage in the permitting process. *See* Wyo. Stat. Ann. § 35-11-416(a). In the event that Brook and Big Horn do not come to an agreement waiving this bond, the Administrator will set the bond

amount. Wyo. Stat. Ann. § 35-11-416(a). No permit condition requiring Brook to post this bond is necessary because such a bond is required by the Act. *Id.*; (Tr. at 871.)

N. Cumulative Hydrologic Impact Assessment (“CHIA”)

138. The Council finds that the Administrator shall make findings under Wyoming Statute § 35-11-406(n) after the Council’s decision here. The statute commits this decision to the Administrator. Wyo. Stat. Ann. § 35-11-406(n); *DEQ’s Br. on Role of Wyo. Stat. § 35-11-406(n) in this Proceeding* at 4. The Council cannot step into the Administrator’s role when the Act plainly commits this authority to him. *See Bender v. Decaria*, 998 P.2d 955, 956-57 (Wyo. 2000). The Department will finalize the CHIA after this hearing. *Coal Rules*, ch. 19. If the facts do not support the required findings, the Director cannot issue the permit. Wyo. Stat. Ann. § 35-11-406(n).

VI. DECISION

IT IS HEREBY DECIDED that the permit should contain the following condition:

Within 45 days of permit issuance, Brook shall submit a non-significant permit revision to the Department that includes the changes specified below. Brook shall respond within 30 days of receipt to any Department review comments on the proposed revisions.

1. Surface water quantity and quality data collection in the Tongue River and Goose Creek drainages in the Brook Mine permit will be enhanced by establishing additional surface water monitoring stations in these drainages. Brook shall install sample sites in three locations:

a. Upstream of the most western tributary of the Tongue River that may be affected by mining. This site will represent surface water conditions as water enters the vicinity of the Brook Mine permit acreage;

b. Downstream of the confluence with Goose Creek where impacts from the mine on Tongue River may be accurately determined;

c. Upstream on Goose Creek near the confluence of Goose Creek and Tongue River and adjacent to the Brook Mine permit boundary.

These sampling locations shall not be established without prior approval from the Division. Monitoring will occur on a quarterly basis for water quality and instantaneous streamflow measurements shall be taken at the time of water quality sampling.

2. Brook shall amend the last paragraph in MP.5.8 Mine Pit Dewatering Plan to state:

“If any water rights are determined to be affected by the mining operations of the Brook Mine, that water source will be replaced with a source of similar quantity and quality, as required by Wyoming Statute §35-11-415(b)(xii), until such time that the original water right's functionality is restored.”

3. Brook shall replace the final sentence in Section MP.6.3.2 Plan to Mitigate the Impacts on Groundwater with the following:

“The Brook Mine shall coordinate with WDEQ/LQD the investigation of all complaints of their mining activities causing a loss of quantity and/or quality of a water right. If any water rights are determined to be affected by the mining operations of the Brook Mine, that water source will be replaced with a source of similar quantity and quality as required by Wyoming Statute §35-11-415(b)(xii), until such time that the original water right's functionality is restored.”

4. Brook shall correct Section MP.22 Dual Permitted Areas to accurately reflect the agreements located in the Adjudication File.

IT IS FURTHER DECIDED that, notwithstanding all objections, the permit application is not deficient; and

IT IS FURTHER DECIDED that, unless otherwise addressed in this Decision, all objections to the permit application are resolved in the favor of the applicant.

Dated this 24th day of July, 2017.

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CERTIFICATE OF SERVICE

I hereby certify that on the 24th day of July, 2017, a copy of the foregoing document was filed electronically with the Wyoming Environmental Quality Council's online docket system and copies were served electronically via that system and by email on the following:

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Date: Monday, August 07, 2017 10:43:45 AM
Attachments: [Fisher FINDINGS AND CONCLUSIONS.doc](#)

Here is the Fisher filing.

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issuance at this time. More thorough and scientifically complete studies and baseline monitoring need to be done in order to show that the mine will not cause subsidence or material damage to the hydrologic balance and the adjacent alluvial valley floor.

The Fishers' Findings of Fact and Conclusions of Law will be broken into two distinct sections. The first addresses findings and conclusions as they relate to the fact that the permit application is currently incomplete and thus not ready to move to the Director of the DEQ for review. The second addresses conditions that must be placed upon a permit that could be issued.

SECTION I. COMPLETENESS OF PERMIT

A. CONCLUSIONS OF LAW RELATED TO THE COMPLETENESS OF BROOK'S APPLICATION:

1. Before an application for a permit for a surface coal mine can proceed to the publication phase, the application must be "determined complete" by DEQ. Wyo. Stat. §35-11-406(g) (LexisNexis 2015).
2. The plain and ordinary definition of "complete" is "having all necessary parts, elements, or steps." *Merriam Webster's Collegiate Dictionary*, 10th Ed. (1995).
3. As part of reviewing decision making by the DEQ, the EQC has the authority to review DEQ's determination of whether or not the Brook Mine application is in fact "complete" and ready for further review. §35-11-406(k) (LexisNexis 2015).
4. "The applicant for a surface coal mining permit has the burden of establishing that his application is in compliance with this act and all applicable state laws" Wyo. Stat. §35-11-406(n) (LexisNexis 2015). Brook Mining Company, LLC is the applicant in this instance.
5. Wyoming Statute §35-11-106(n) is part of "this act" (meaning the Environmental Quality Act) and therefore applies to all surface coal mining applications. §35-11-406(n) (LexisNexis 2015) and §35-11-101 (LexisNexis 2015).
6. Wyoming Statute §35-11-106(n) provides in part:
 - (n) The applicant for a surface coal mining permit has the burden of establishing that his application is in compliance with this act and all applicable state laws. No surface coal mining permit shall be approved unless the applicant affirmatively demonstrates and the administrator finds in writing:
 - (i) The application is accurate and complete;

- (ii) The reclamation plan can accomplish reclamation as required by this act;
- (iii) The proposed operation has been designed to prevent material damage to the hydrologic balance outside the permit area;

*** *** *** ***

- (v) The proposed operation would:

*** *** *** ***

(B) Not materially damage the quantity or quality of water in surface or underground water systems that supply these alluvial valley floors.

Wyo. Stat. §35-11-406(n) (LexisNexis 2015).

7. In order to be accurate and complete, a surface coal mining application must contain meaningfully complete information of compliance with all applicable rules and regulations, including the information which forms the basis for the applicant's affirmative demonstration of compliance with the requirements of Wyo. Stat. §35-11-406(n).
8. While Wyo. Stat. §35-11-406(n) provides that the administrator of the DEQ must make findings that the proposed mine will meet the subsection (n) requirements, the subsection also clearly states that a permit may not be issued unless "the applicant affirmatively demonstrates" that its mine will be in compliance with subsection (n). Wyo. Stat. §35-11-406(n) (LexisNexis 2015). In order to be complete, the application must contain the information affirmatively demonstrating compliance with subsection (n).
9. "Affirmatively demonstrating" as required by the Environmental Quality Act requires more than generalized or conclusory statements such as "no harm is expected". Wyo. Stat. §35-11-406(n) (LexisNexis 2015).
10. In addition to the requirements of §35-11-406, DEQ regulations require that as part of its application an applicant must also provide information "and evaluations on the potential for and the extent of subsidence, and the effect it may have on structures, the continued use of the surface land and aquifers or recharge areas". If subsidence may cause damage, a subsidence control plan is required. Wyo. Admin. Rules, DEQ-LQD, Underground Coal Mines, Ch. 7 §1(a)(v).

B. FINDINGS OF FACT RELATED TO THE COMPLETENESS OF BROOK'S APPLICATION:

11. Expert witness Mike Wireman (Wireman) testified before the EQC. Wireman is an

expert in geo-hydrology with extensive experience in hydrology and decades of experience as evidenced by his testimony and CV which are part of the record. (*POW Exhibit 18, Wireman Testimony Vol. VI @ pgs. 1327-1335*)

12. The EQC finds Mr. Wireman to be a well-qualified expert who gave credible and reliable testimony on the topic of hydrology. To the extent his opinions and testimony are cited as the basis of findings of fact in these findings, the EQC has resolved any conflicts or dispute between testimony of others and in favor of Mr. Wireman's testimony and has found him to be the more credible and reliable witness.
13. The hydrologic studies done by the applicant Brook Mine thus far along with the other available data do not provide a sound scientific basis from which it can be concluded that the proposed mining operation has been designed to "prevent material damage to the hydrologic balance outside the permit area". (*Wireman Testimony Vol. VI @ pgs. 1400-1401*)
14. Mr. Wireman testified to several deficiencies in the hydrologic studies done thus far which evidence that the applicant, Brook Mining Company, LLC, has not affirmatively demonstrated that its mine will prevent material damage to the hydrologic balance outside the permit area, including:
 - a. The hydrologic review and assessment failed to account in any way for how dewatering of the coal seams would impact the water in other ground water aquifers. (*Wireman Testimony Vol. VI @ pg. 1344*);
 - b. The hydrologic review and assessment was unacceptably sparse with only one (1) pump test done in the far eastern portion of the permit area and only two (2) site specific hydraulic conductivity values (one for each seam of coal) over the entire permit area. (*Wireman Testimony Vol. VI @ pg. 1354*) Hydraulic conductivity measures the rate at which water flows in an aquifer. (*Wireman Testimony Vol. VI @ pg. 1360*) The permit area encompassed an area of approximately 4,500 acres. (*Kuchanur Testimony Vol. III @ pg. 535; Kristiansen Testimony Vol. I @ pg. 50*);
 - i. DEQ admitted that the hydrology and flow of water and geology was complex and could change significantly in short distances. (*Kristiansen Testimony Vol. IV, @ pgs. 302-303*);
 - c. The hydrologic review and assessment only used one porosity value or hydraulic conductivity value for the entire permit area which cannot account for the heterogeneity or diversity of the geology in the permit area. (*Wireman Testimony Vol. VI @ pg. 1355*) Furthermore, data was not collected from monitoring wells

during the pumping tests in the Slater Creek area as would be expected and appropriate. (*Wireman Testimony Vol. VI @ pgs. 1363-64*)

- d. Using only one porosity value for the entire permit area fails to take into account seasonal changes which can alter direction of flow, velocity of flow and quantity of flow to a particular area. (*Wireman Testimony Vol. VI @ pg. 1355*)
 - e. Proper investigation and testing for potential ground water impacts require the development of a hydrograph over at least a full 12-month cycle to take into account seasonal changes in quantity, quality and flow of water in these aquifers. (*Wireman Testimony Vol. VI @ pg. 1345*) Brook's testing failed to collect any surface water data from October through March, a period of about 6 months or ½ of a yearly hydrograph, and historic data reflects that Hidden Water Creek only flows in the winter months during a time Brook collected no data on that drainage. (*Wireman Testimony Vol. VI @ pg. 1361*)
 - f. Inadequate testing and data collection was done on the overburden, underburden, Tongue River alluvium and Slater Creek alluvium to make scientific predictions about hydrologic impacts. (*Wireman Testimony Vol. VI @ pg. 1361*)
 - g. No monitoring or baseline wells were used to establish the baseline water in the Tongue River alluvium. (*Wireman Testimony Vol. VI @ pg. 1365*)
 - h. The data used for the recharge of the aquifers is not site specific and is vaguely identified not allowing for peer review of those assumptions. (*Wireman Testimony Vol. VI @ pg. 1363*) Moreover, the groundwater aquifer assessment contains no discussion of vertical intervals or lithology which affect the potentially impacted domestic wells. (*Wireman Testimony Vol. VI @ pg. 1367*)
 - i. In general, there is a dearth or lack of supporting hydrologic data to support the conclusions Brook attempts to draw from its study. (*Wireman Testimony Vol. VI @ pg. 1363*)
15. Substantial concern exists that material damage would be done to the hydrologic balance inside and/or outside the permit area (*Wireman Testimony Vol. VI @ pgs. 1398-1399*) and the testing done was wholly inadequate to conclude there will not be material hydrologic impacts. (*Wireman Testimony Vol. VI @ pgs. 1373; 1442*)
16. The permit application submitted by Brook Mine does not contain the information necessary to affirmatively demonstrate that material damage to the hydrological balance

outside the permit area will be prevented. (*Wireman Testimony Vol. VI @ pgs. 1398-1399; 1442*)

17. The hydrologic studies done thus far by the applicant Brook Mine, along with the other available data, do not provide a sound scientific basis from which it can be concluded that the mining will “not materially damage the quantity or quality of water in surface or underground water systems that supply” alluvial valley floors that are within the mine boundary or within one-half mile of the proposed mine boundary. (*Wireman Testimony Vol. VI @ pgs. 1400-1401, 1441-1443*)
18. Substantial concern remains that material damage would be done to the quantity or quality of water in the surface or underground water that supplies alluvial valley floors or areas likely to be alluvial valley floors that are either in or within one-half mile of the permit area. (*Wireman Testimony Vol. VI @ pgs. 1389-1392 and 1373*)
19. Wireman testified that even a small reduction in the amount or volume of water being supplied to the alluvium of the alluvial valley floors located within the permit boundary can cause material damage to the productivity of these valley floors. (*Wireman Testimony Vol. VI @ pgs. 1396-1398*)
20. A number of documents authored by Brook’s engineering expert acknowledge a communication or connectivity between the water in the coal seams and the water in the alluvium of alluvial valley floors or areas likely to be alluvial valley floors, including:
 - a. “Therefore, it is likely that the Carney coal would lose water to the Tongue River alluvium” – DEQ Exhibit 12, pg. 231.
 - b. Recognition of water communication between the alluvium and the Carney coal seam stating: “regions where the Carney seam subcrops into Slater Creek or Tongue River alluvial material” – See DEQ Exhibit 13, pg. 051, RP.8.3 *Aquifer Reconstruction*.
 - c. Recognition of water communication between the alluvium and Masters coal seam stating: “Masters Seam are assumed to include infiltration from overlying strata, communication with river alluvium” – See DEQ Exhibit 13, pg. 051, RP.8.3 *Aquifer Reconstruction*.
21. The above statements are consistent with Mr. Wireman’s opinions that there is communication between the water in the coal seams and the water in the alluvium of these alluvial valley floors. (*Wireman Testimony Vol. VI @ pgs. 1388-1389*)

22. It was uncontested that as part of mining the coal, Brook Mine will de-water the coal seam.
23. De-watering the coal seam will interrupt the natural flow of water in the coal seams which supply and communicate with the river alluvium. (*Wireman Testimony Vol. VI @ pgs. 1400-1401*)
24. The perturbing of the natural flow of water in this system will be further exacerbated if overburden subsides into the cavity left by coal removal. (*Wireman Testimony Vol. VI @ pgs. 1370-71*)
25. Brook Mine did not call a hydrology expert to demonstrate how its permit application contained the information and proof that its application demonstrated that the mining operation would be in compliance with Wyo. Stat. §35-11-406(n).
26. **Brook Mine, who bore the burden of proof, did not call its own hydrology expert to counter the testimony of Mr. Wireman.**
27. Testimony revealed that there are over 350 water wells (“357”) identified which could be potentially impacted. (*Barron Testimony Vol. IV @ pg. 778; Wireman Testimony Vol. VI @ pg. 1344*)
28. Draw-down in domestic/stock water wells are predicted to as much as 25 feet. (*Kuchanur Testimony Vol. III @ pgs. 541-543 and DEQ Exhibit 12-251, Table 4.9-1*)
29. Brook Mine has the burden of proof on these issues.
30. Wyo. Admin. Rules, DEQ-LQD, Underground Coal Mining, Ch. 7 §1(a)(v) requires that as part of its permit application, Brook Mine have a subsidence control plan.
31. Dr. Marino testified before the Council and is a very qualified expert in the area of underground mine subsidence with decades of experience as shown by his testimony and his CV which was received as POW Exhibit 18. (*Marino Testimony Vol. VI @ pgs. 1192-1198*)
32. The EQC finds Dr. Marino to be a well-qualified expert who gave credible and reliable testimony on the topic of hydrology. To the extent his opinions and testimony are cited as the basis of findings of fact in these findings, the EQC has resolved any conflicts or dispute between testimony in favor of Dr. Marino’s testimony and has found him to be

the more credible and reliable witness.

33. **Neither Brook Mine nor DEQ offered any expert testimony from an expert with similar qualifications to Dr. Marino.**
34. There have been inadequate studies and testing done to draw any scientific conclusions as to the long-term risk of subsidence at the proposed Brook Mine. (*Marino Testimony Vol. VI @ pg. 1246*)
35. Without these studies and based on current available information, the risk of subsidence as a result of the coal mining by Brook Mine is substantial. (*Marino Testimony Vol. VI @ pg. 1200 and POW Exhibit 11 Powerpoint*)
36. The deficiencies and total lack of a subsidence plan were explained in detail by Dr. Marino and are encompassed in his Powerpoint presentation received as Powder River demonstrative Exhibit 11 and include:
 - a. Proper mine subsidence assessment requires assessing the strength and stability of the roof, floor and pillar materials that will support the mine void. (*Marino Testimony Vol. VI @ pgs. 1205-10*)
 - b. Appropriate data was not collected to do a site specific assessment of the strength and stability of the roof, floor and pillar materials at the proposed Brook mine. (*Marino Testimony Vol. VI @ pgs. 1211, 1228-1229*)
 - c. Faulting in the overburden has not been studied or documented to know what impact known geologic faults may have on subsidence risk. (*Marino Testimony Vol. VI @ pgs. 1218-19*)
 - d. For long-term mine stability, safety factors should be 1.6 to 2.0 or higher depending on conditions. (*Marino Testimony Vol. VI @ pg. 1286*)
 - e. Using information from the permit, coal pillar pressures could reach 1,300 pounds per square inch resulting in a safety factor of less than 1.0. (*Marino Testimony Vol. VI @ pg. 1226*)
 - f. The clay-stone known to exist in the overburden and underburden can have bearing strength of as little as 300 pounds per square inch resulting in a safety factor of less than 1.0 (*Marino Testimony Vol. VI @ pg. 1227*)

- g. The subsidence control plan exhibits a lack geomechanical understanding of the long-term and short-term stability of the mine. (*Marino Testimony Vol. VI @ pg. 1228*)
 - h. There is insufficient information or data in the permit application and very limited analysis of subsidence risk in the documents such that the subsidence potential cannot be assessed. (*Marino Testimony Vol. VI @ pg. 1228*)
 - i. Based upon Dr. Marino's review of many subsidence control plans during the decades of his experience, the Brook Mine subsidence assessment is well below industry standards. (*Marino Testimony Vol. VI @ pg. 1228*)
 - j. Based upon what is reported in the mine plan the risk of subsidence at the Brook Mine is high. (*Marino Testimony Vol. VI @ pgs. 1228-29*)
 - k. The calculations in the mine plan improperly used coal strength data for bituminous coal rather than the sub-bituminous coal which exists at the site. (*Marino Testimony Vol. VI @ pgs. 1226-27, 1234, 1247*)
 - l. The formula used in the application to calculate strength/bearing capacity is for extraction heights of 7 feet or less and in the Brook Mine extraction can reach 20 feet. (*Marino Testimony Vol. VI @ pg. 1227*)
 - m. Complete subsidence control plans are typically stamped by a professional engineer and no such plan is part of the Brook Mine application. (*Marino Testimony Vol. VI @ pgs. 1238-39*)
 - n. The mine plan is not complete due to the lack of proper testing and analysis to determine the risk of subsidence due to mining activities. (*Marino Testimony Vol. VI @ pg. 1244*)
37. Through its engineer Jeff Barron, Brook Mine **admitted** that the studies and work suggested by Dr. Marino are necessary steps for a proper mine subsidence plan. (*Barron Testimony Vol.III @ pgs. 674-675*)
38. DEQ and Brook Mine have contended that a subsidence control plan would be part of an MSHA Ground Control Plan or that a MSHA Ground Control Plan would constitute a subsidence control plan. (*Barron Testimony Vol. VII @ pgs. 1533-1534*)

39. A MSHA Ground Control Plan and a subsidence plan are two different plans which address different things. They are not synonymous with each other. (*Marino Testimony Vol. VI @ pgs. 1202-03, 1237, 1241*)
40. A MSHA Ground Control Plan primarily addresses the safety of miners and workers during mining activities while a subsidence control plan addresses the potential for long-term subsidence for decades after mining is completed. *Id.*
41. Without the proper studies the risk for subsidence cannot be properly gauged or assessed and likewise the potential environmental and reclamation impacts and consequences cannot be properly gauged or assessed.
42. Absent this information it is not possible to determine whether the reclamation plan is likely to “accomplish reclamation as required by this act” as is dictated by Wyo. Stat. §35-11-406(n)(ii).
43. Because Brook Mine’s application does not contain the information which affirmatively demonstrates that the proposed mine would be in compliance with Wyo. Stat. §35-11-406(n), the application is incomplete and must be denied at this time.
44. Brook Mine may complete the necessary reports and studies to supply the information satisfying its obligation to affirmatively demonstrate that its mining activities will be in compliance with Wyo. Stat. §35-11-406(n) and properly study the subsidence risk and then resubmit its application.

SECTION II. PERMIT CONDITIONS REQUIRED

In the event the EQC determines that it will allow Brook Mine’s application for a coal mining permit and that it is ready to be further considered without the application containing the information which affirmatively demonstrates that the project will be in compliance with §35-11-406(n) and without a complete subsidence control plan, the Fishers request that the EQC place conditions on the permit which set parameters for the future potential mining activities. The following findings of fact and conclusions of law are proposed for that reason. The Fishers in no way concede or waive their claims that Brook Mine’s application is incomplete and does not provide the necessary background information and data to be in compliance with the Environmental Quality Act and associated rules and regulations, and they specifically retain their right to appeal and fully challenge these deficiencies.

A. FINDINGS OF FACT IN RELATION TO PERMIT CONDITIONS:

Subsidence Issues:

1. The risk of subsidence and subsidence control have not yet properly been studied or assessed by Brook Mining Company, LLC. (*See Findings of Fact in Section I above*).
2. Based upon the information reported and available in the mine plan the risk of subsidence at the Brook Mine is high, unless shown otherwise by proper studies and calculations. (*Marino Testimony Vol. VI @ pgs. 1228-29*)
3. Mining should not proceed if there is a risk of material subsidence.
4. Testimony from landowners demonstrate that subsidence issues related to historic mining in the area are ongoing. Mr. Buyok, a retired engineer, testified that he recently nearly lost a four-wheel-drive tractor in an area on his property which subsided as he drove over the area and that continual subsidence is an ongoing concern. (*Buyok Testimony Vol. IV @ pgs. 1019-1022; Buyok Testimony Vol. V @ pgs. 1045-1047*)
5. The EQC finds that it is appropriate, proper and reasonable that as a condition of permit issuance, the permit have a condition requiring that prior to any mining activity at any of the proposed locations, Brook Mine will be required to supply a study evidencing that there is a low risk of long-term subsidence at that location. The permit condition shall read as follows:

Prior to any mining activity at any location, the mining company shall submit and DEQ shall approve a Subsidence Control Plan that demonstrates a low risk of long-term subsidence bearing the stamp of a professional engineer licensed in Wyoming. Such plan will be a formal subsidence control plan addressing the long-term risk of subsidence and prepared consistently with the industry standards for long-term subsidence prediction and control and demonstrate reliance upon a safety factor of 2.0 or higher. An MSHA Ground Control Plan will not qualify as a Subsidence Control Plan.

Bonding Issues:

6. Wyoming environmental protection laws are designed to ensure proper and adequate reclamation is accomplished to protect Wyoming's land, air and water quality and avoid Wyoming and its taxpayers being left with reclamation responsibilities created by mining operators. See §35-11-102 et. seq.
7. Wyoming has experienced problems with Abandoned Mine Lands projects and has recently encountered risks of very large coal mining operations with significant resources

being unable to meet their reclamation obligations, including Arch Coal Company, Alpha Natural Resources, and Peabody.

8. Several witnesses, including Ramaco executive Kenneth Woodring, testified that coal mining operations can encounter unforeseen environmental challenges during operations which are not covered by the reclamation bond. (*Woodring Testimony Vol. IV @ pgs. 827-829*)
9. Incremental bonding is for reasonably “foreseen” reclamation costs. The Objectors have all questioned whether the potential problems and reclamation have been properly assessed by Brook Mine.
10. Brook Mining Company, LLC is the sole applicant for this mining permit and despite repeated references to Ramaco Resources, Inc., Ramaco is not a permit applicant. (*See Permit Application*) However, Ramaco and Brook Mining Company, LLC were often referred to interchangeably, and representatives of Ramaco (Ken Woodring) testified in support of the application.
11. Pursuant to Wyoming Statute §17-16-1630, all corporations registered in the State of Wyoming must submit an Annual Report to the Wyoming Secretary of State’s Office. Wyo.Stat. §17-16-1630 (LexisNexis 2015)
12. An offer of proof was made by the Fishers demonstrating that Brook Mining Company, LLC has reported to the Wyoming Secretary of State that its total assets are worth \$250,000 or less. (*Fishers’ Exhibit 27, Offer Of Proof filed with EQC on May 25, 2017*) [A recent Annual Report was filed with the Wyoming Secretary of State’s Office by Brook Mining Company, LLC dated June 19, 2017 still showing total assets worth \$250,000 or less.] (See Exhibit A attached hereto.)
13. Neither Brook nor Ramaco has an operating history in Wyoming or any other state demonstrating a history of satisfying its reclamation and environmental obligations.
14. Brook Mining Company, LLC has no current employees.
15. Brook Mining Company, LLC through its witnesses, including Jeff Barron and Ramaco’s consultant Ken Woodring, expressed confidence in the soundness and environmental safeguards of the mine plan. (*Woodring Testimony Vol. IV @ pgs. 828-829; Barron Testimony Vol. IV @ pg. 808*) These expressions of confidence are properly backed up by financial surety to the State of Wyoming to assure reclamation and environmental liabilities are born by the industry and not the State of Wyoming and its taxpayers, which

is the policy of this State. Wyo. Stat. §35-11-102 et. seq.

16. The EQC finds that it is appropriate, proper and reasonable that as a condition of permit issuance and to insure responsible development, and that reclamation is completed by the operator and not borne by the State of Wyoming and its taxpayers, that all reclamation and environmental liabilities of Brook Mining Company, LLC be guaranteed by Ramaco Resources, Inc. This condition shall read as follows:

Prior to commencement of any mining operations, Ramaco Resources, Inc. shall provide a written guarantee to the State of Wyoming guaranteeing the payment and satisfaction of all reclamation and environmental liabilities of Brook Mining Company, LLC.

Blasting Issues:

17. As proposed, Brook Mine's blasting plan provides that the company can conduct blasting at any time during daylight hours (sunrise to sunset) without any further restrictions on blasting times. (*Emme Testimony Vol. III @ pg. 638*)
18. No justification or reason was given by Brook or DEQ as to why blasting would be a necessary aspect of mining operations on such a broad daylight to dark basis every day.
19. Indeed, Doug Emme of the DEQ indicated that Brook Mine originally proposed a more restricted blasting schedule and were encouraged by DEQ to broaden the blasting schedule to all daylight hours every day of the year. (*Emme Testimony Vol. III @ pg. 623; Barron Testimony Vol. IV @ pg. 800*)
20. Witnesses from both Brook Mine and the DEQ testified that the blasting at Brook Mine **would not be** similar to that in the Campbell County coal mines where unlimited daylight blasting is allowed and necessary. Mr. Woodring indicated that the Brook Mine operation would be a "small mine by comparison" to other coal mines. (*Emme Testimony Vol. III @ pgs. 638-639; Barron Testimony Vol. IV @ pg. 782; Woodring Testimony Vol. IV @ pg. 820*)
21. The only justification given for the unlimited daylight blasting was that "safety concerns" might arise if a blasting time was about to expire after explosives had been set and for unforeseen reasons the company could not facilitate blasting within the designated blasting time. (*Barron Testimony Vol. IV @ pg. 801*)
22. However, Doug Emme testified that the DEQ will allow blasting outside of designated times, including in the dark, for safety or emergency reasons and only requires or requests that the operator alert DEQ of the situation. (*Emme Testimony Vol. III @ pg.*

586)

23. When asked by Council Members Lally, Agopian and counsel if it would be reasonable to put some restrictions on blasting given the nature of Brook Mine's proposed operation and the large number of landowners involved, DEQ's Emme replied that it is possible to include conditions restricting the blasting operation. (*Emme Testimony Vol. III @ pgs. 617-618, 639-640*)
24. Testimony revealed that many residential homes are located within one-half mile of the permit boundary and blasting has the potential to be disruptive and bothersome to a large number of residents as well as concerns about damage from vibrations associated with the blasting. (*Emme Testimony Vol. III @ pg. 584; Buyok Testimony Vol. IV @ pgs. 1019-1020, 1022, 1045-1046*)
25. Although working from DEQ's Sheridan offices only a few miles from the proposed mine site, Mr. Emme who reviewed and approved Brook Mine's blasting plan on behalf of DEQ, had not visited the area of the mine site or explored the large number of potentially affected landowners or historic stone structures and other structures prior to approving the blasting plan. (*Emme Testimony Vol. III @ pg. 603*)
26. There is no provision in the current mine plan to restrict or limit blasting during high wind or weather events. (*Emme Testimony Vol. III @ pgs. 608-609*)
27. DEQ has implemented conditions on other mine permits regarding restrictions on blasting during inversions or high wind events and the mines themselves have voluntarily put restrictions on their blasting operations. (*Emme Testimony Vol. III @ pgs. 608-609*)
28. Neither Brook Mine nor DEQ presented any evidence to suggest why such restrictions were not appropriate or infeasible at the proposed Brook mine.
29. For the above reasons, including the fact that no justification or reason was stated for why blasting will be necessary from sunrise to sunset every day of the week throughout the year, the EQC finds that reasonable limitations on blasting times are an appropriate condition of permit issuance. This condition shall read substantially as follows:

Absent a demonstration of good cause, Brook Mine shall restrict its blasting to daylight hours between 9:00 a.m. and 4:00 p.m. local time, Monday through Friday and shall conduct no blasting on legal holidays. Brook Mine shall also be required to limit blasting as directed by the DEQ during inversions, high wind events and other conditions deemed by the DEQ to constitute a safety or health concern.

Seismic Monitoring:

30. The Fishers and other landowners expressed a desire to have seismic monitoring placed on their property to measure the strength of the shock waves or “vibration” which reach their residence during blasting. (*Fisher Testimony Vol. V @ pgs. 1165-1166*); *Bocek Testimony Vol V @ pg. 1093*; *Collins Testimony Vol. V @ pgs. 1086-1087*)
31. DEQ personnel, including Doug Emme, testified that in other mining operations the DEQ has installed such seismic monitoring on the property of homeowners near mines where blasting is occurring. (*Emme Testimony Vol. III @ pgs. 618-619*)
32. Brook’s engineer, Jeff Barron, testified that he is familiar with requests for seismic monitoring and that his employer Western Water has installed seismic monitoring regarding other mine operations in the Powder River Basin. (*Barron Testimony Vol. IV @ pgs. 770-771, 783*)
33. Neither Brook nor DEQ offered any evidence why such seismic monitoring was not appropriate or was impractical at the Brook Mine.
34. Testimony from several landowners, including Mary Fisher, indicated that historic rock structures are located on their property and they are concerned about the impact blasting will have on these structures. (*Bocek Testimony Vol. V @ pg. 1093*; *Collins Testimony Vol. V @ pg. 1086*); *Fisher Testimony Vol. V @ pg. 1143*)
35. For the above reasons, the EQC finds that it is reasonable and appropriate that as a condition of permit issuance, the operator Brook Mine will be required at its expense to install and maintain appropriate seismic monitoring during blasting. Such condition shall read substantially as follows:

Brook Mine shall install and maintain seismic monitoring as directed by DEQ on the property of any residential homeowner who requests such monitoring and lives within one-half mile of the permit boundary. Brook Mine shall share all data or information collected from such monitoring with the DEQ and with the homeowner requesting the monitoring.

Alluvial Valley Floors:

36. DEQ Exhibit #16 reflects that DEQ has designated a significant area adjacent to the Brook Mine as “Potential AVF” (alluvial valley floor). The regulations provide that alluvial valley floors are subject to greater protections.
37. DEQ Exhibit #16 reflected that this “potential AVF” was not formally classified by DEQ

as AVF due to claims of access being denied by landowners in the area. (*Kristiansen Testimony Vol. II @ pg. 304*)

38. On cross-examination, BJ Kristiansen, could not or would not name one landowner who had refused DEQ access for purposes of determining if their property was classified as AVF and admitted that the Objectors such as the Fishers, Mr. Bocek and Mr. Buyok had not denied DEQ access nor had DEQ even asked for access. (*Kristiansen Testimony Vol. II @ pgs. 303-305*)
39. DEQ admitted that the lands labeled as “Potential AVF” on DEQ #16 and shown in Fisher Exhibit #1 are “probably” alluvial valley floor lands although DEQ has not yet designated them as such. *Id.*
40. DEQ admitted there could be communication between the coal seam aquifers and the alluvial valley floor aquifers and therefore DEQ could not say that material damage to the AVF aquifer would not happen as a result of mining. *Id.*
41. **For the above reasons, the EQC finds that it is reasonable and appropriate that as a condition of permit issuance, the DEQ shall seek access from all willing landowners and perform a formal assessment of whether the areas it has already designated as “Potential AVF” in DEQ Exhibit #16 qualify for formal designation as AVF, and the EQC directs the DEQ to do so and further determine if additional alluvial valley aquifer monitoring wells should be required in this area.**

Domestic Water Wells:

42. Draw-down in domestic/stock water wells are predicted to be as much as 25 feet. (*Kuchanur Testimony Vol. III @ pg. 541 and DEQ Exhibit 12-251, Table 4.9-1*)
43. Expert Wireman testified that due to the confined nature of the coal aquifer, even a small reduction in the water available could have a material impact on domestic water users such as the Fishers who obtain their water from the coal seam. (*Wireman Testimony, Vol. VI @ pgs. 1382-85*)
44. Landowner John Buyok testified that in times of prolonged drought his water well became incapable of producing water and pumped only sediment from the bottom of the well. (*Buyok Testimony, Vol. V, @ pgs. 1038-39*). This testimony is consistent with the description and concerns expressed by Mr. Wireman.
45. Brook Mine has committed in its mine plan to remedy any material damage to the quantity or quality of the water in the domestic water wells for landowners within one-

half mile of the permit boundary. (*See Brook Mine Permit*)

46. The EQC determines that it is appropriate that the permit should contain a condition which further defines Brook's obligations in the event a domestic/stock water well is materially harmed in quantity or quality. Such condition shall read as follows:

In the event DEQ determines there is a reasonable basis to conclude that mining operations have caused material damage to the quantity or quality of water in a domestic water well located in the permit area or within one-half mile of the permit boundary, Brook shall supply substitute water of the same or better quality and quantity as previously existed, including drilling a replacement well when appropriate.

Conditions Conceded by Brook and DEQ Which Must Be Incorporated In The Permit:

47. DEQ and Brook Mine have agreed that it would be appropriate to include both registered and adjudicated wells in the mine plan. (*DEQ Answer To Fishers' Interrogatory No. 10* (attached as Exhibit B); *Kristiansen Testimony Vol. II @ pgs. 290-291*; *Barron Testimony Vol. IV @ pg. 800*; *Kuchanur Testimony Vol. III @ pgs. 500-501*)
48. DEQ has agreed to amend the mine plan to include additional monitoring stations upstream and downstream of the Tongue River. (*DEQ Answer To Fishers' Interrogatory No. 11* (attached as Exhibit B); *Kristiansen Testimony Vol. II @ pg. 290*; *Barron Testimony Vol. IV @ pg. 800*; *Kunze Testimony Vol. II @ pgs. 411-412*)
49. Matt Kunze from DEQ further recommended that there be a monitoring site on Goose Creek to have additional data to ensure a more accurate interpretation of the upstream-downstream comparison in the Tongue River. (*Kunze Testimony Vol. II @ pg. 412*)
50. **Therefore, all three of the above conditions should be incorporated in the Brook Mine Plan.**

DEQ's and Brook Mine's Acceptance Of Conditions Imposed by EQC:

51. Importantly, throughout the contested case hearing in this matter, both DEQ and Brook Mine (through its engineer Jeff Barron) repeatedly agreed to comply with conditions that EQC deemed appropriate and reasonable. Mr. Barron testified that conditions could be "useful information for the council" and conditions would be "welcome" and "accepted". (*Barron Testimony Vol. IV @ pgs. 779-780, 781-788. See also references above regarding DEQ acknowledgments and Kristiansen Testimony Vol. II @ pg. 291*)

B. CONCLUSIONS OF LAW RELATIVE TO THE CONDITIONS:

1. Wyoming DEQ and the EQC are empowered to place conditions on the issuance of a coal mining permit which relate to blasting, seismic monitoring and blasting during certain atmospheric conditions by virtue of the fact that Chapter 2 of the Land Quality Division Rules-Coal relating to “Application Requirements” requires that the operator submit a blasting plan acceptable to the DEQ. Wyo. Admin. Rules, DEQ-LQD, Coal, Ch. 2 §5(a)(vii).
2. Wyoming DEQ and EQC are empowered to place conditions on issuance of a coal mining permit which assure financial responsibility for environmental obligations. The Environmental Quality Act’s stated goal and the policy of Wyoming are to ensure proper reclamation of disturbance and the protection of the quality of Wyoming’s land, air and water. See §35-11-102 et. seq. Hence, requiring sufficient financial surety for such obligations, such as requiring that a parent or related company to the applicant provide a financial guarantee of the reclamation and environmental obligations of an applicant, is within the power of the agency.
3. Wyoming DEQ and EQC are empowered to place a condition on issuance of a coal mining permit requiring that appropriate and proper subsidence investigation and mitigation are undertaken as part of issuing a permit, because a Subsidence Control Plan is a required part of any such application involving a component of underground mining. Wyo. Admin. Rules, DEQ-LQD-Underground Coal Mines, Ch. 7 §1(a)(v).
4. Wyoming DEQ and EQC are empowered to place a condition on issuance of a coal mining permit requiring that appropriate and proper hydrologic studies, monitoring and protections be regulated as part of issuing a permit so as to prevent material damage to hydrologic balance outside the permit area and protections in the event of such damage. Wyo. Stat. §35-11-406(n)(iii) (LexisNexis 2015).
5. DEQ and the EQC are empowered with the designation and protection of alluvial valley floors through the permitting and enforcement process. Wyo. Stat. §35-11-406(n)(v) (LexisNexis 2015).

IV. CONCLUSION

There have been insufficient studies done to demonstrate that the proposed mine plan will not cause material damage to the hydrologic balance in this historic and important river valley, and the application is thus incomplete and must be denied at this time pending a more scientific and reasoned assessment of the risks. In the event the permit is allowed to proceed, it must only be allowed to do so with the critical conditions set forth above which provide protection for the rugged and resilient landowners who have been here for decades and for the valuable air, land

and water resources of the State of Wyoming.

DATED this 24th day of July, 2017.

YONKEE & TONER, LLP

/s/ *Jay A. Gilbertz*

Jay A. Gilbertz, WSB # 6-3087

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CERTIFICATE OF SERVICE

I, Jay A. Gilbertz, hereby certify that on the 24th day of July, 2017, I served a true and correct copy of the above and foregoing *by electronic transmission*, duly addressed as follows:

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/s/ *Jay A. Gilbertz*

Jay A. Gilbertz

From: Shannon Anderson
To: [Clayton Gregersen](#); [Jim Ruby](#)
Cc: [Lynne Boomgaarden](#); [Wendy Drake](#); [Jeffrey S. Pope](#); [Isaac Sutphin](#); [Andrew Kuhlmann](#); james.larock@wyo.gov; jgilbertz@yonkeetoner.com
Subject: RE: BHC Proposed FOF and COL 7.23.17.DOCX
Date: Monday, August 07, 2017 9:54:45 AM
Attachments: [2017 7-24 Proposed Findings of Fact & Conclusions of Law FINAL.docx](#)

Ours is attached. Thanks, Shannon

From: Clayton Gregersen [mailto:cgregersen@crowleyfleck.com]
Sent: Monday, August 07, 2017 9:26 AM
To: Jim Ruby
Cc: Lynne Boomgaarden; Wendy Drake; Jeffrey S. Pope; Isaac Sutphin; Andrew Kuhlmann; james.larock@wyo.gov; Shannon Anderson; jgilbertz@yonkeetoner.com; Wendy Drake
Subject: BHC Proposed FOF and COL 7.23.17.DOCX

Mr. Ruby,

Please find the attached word version of Big Horn Coal Company's Proposed Findings of Fact and Conclusions of Law.

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**BEFORE THE ENVIRONMENTAL QUALITY COUNCIL
STATE OF WYOMING**

IN RE BROOK MINE APPLICATION)
)
 TFN 6 2-025) **DOCKET 17-4802**

POWDER RIVER BASIN RESOURCE COUNCIL'S PROPOSED FINDINGS OF FACT AND CONCLUSIONS OF LAW

Pursuant to the June 13, 2017 Order from the Environmental Quality Council (“EQC” or “Council”), the Powder River Basin Resource Council (“Resource Council” or “PRBRC”) hereby submits its Proposed Findings of Fact and Conclusions of Law in the above-captioned proceedings.

I. General Findings

1. According to the Wyoming Environmental Quality Act (“WEQA” or “Act”), “No mining operation may be commenced or conducted on land for which there is not in effect a valid mining permit to which the operator possesses the rights.” W.S. § 35-11-405(a).

2. Requirements for coal mine permit applications as well as grounds for approval and denial are governed by Section 406 of the Wyoming Environmental Quality Act, along with the Land Quality Division's ("LQD") Coal Rules and Regulations (hereafter "Coal Rules").

3. Specifically, as discussed below, certain findings related to the application's compliance with the WEQA and DEQ regulations must be made before the EQC can reach a decision on the permit application. *Id.* at §§ 406(n)(i)-(vii).

4. DEQ regulations require information in a permit application to be “current” . . . “accurate and complete.” Coal Rules, Ch. 2 § 1; *see also* W.S. § 35-11-406(n)(i) (requiring a permit applicant to prove that the application is “accurate and complete.”).

5. In response to the required public notice, the Resource Council timely filed objections to Brook Mining Company, LLC’s (“Brook” or “applicant” or “company”) coal mine permit application on January 27, 2017. Ex. POW 1. The Resource Council also timely requested a hearing before the EQC, initiating this contested case hearing.

6. Members of the Resource Council also timely filed objections to Brook’s coal mine permit application. John and Vanessa Buyok, Gillian Malone, Sadie Clarendon, Jane Buyok, Anton Bocek, Joan Tellez, Wendy Condrat, Brooke Collins, and William Bensel filed objections. Ex. POW 2-10. Their objections and concerns demonstrate that the Resource Council, through representation of its members, is an “interested person” within the meaning of Section 406(k) and a “person with an interest which is or may be adversely affected” within the meaning of Ch.1 § 17(b) of DEQ’s Rules of Practice and Procedure.

7. A contested case hearing was held in this matter on May 22-26 and June 7-8, 2017.

8. After the contested case hearing, the EQC must “issue findings of fact and a decision on the application.” W.S. § 35-11-406(p). This “decision on the application” is consistent with the authority granted to the EQC under the WEQA that the agency may “Order that any permit, license, certification or variance be granted, denied, suspended, revoked or modified.” *Id.* at § 112(c)(ii).

9. In making this decision, the EQC’s review of DEQ’s permitting decisions and of the permit application is *de novo*. Under *de novo* review, the EQC must look afresh or “from the

new” at the permit application and cannot afford deference to DEQ in issuing any findings of fact or in making the decision on the permit application.¹

10. As discussed below, the permit application is deficient because it contains “omission[s] or lack of sufficient information serious enough to preclude correction or compliance by stipulation in the approved permit to be issued by the director.” *Id.* at § 103(e)(xxiv). If a deficiency exists, by definition it *cannot* be remedied by a permit condition.

11. Also, as discussed below, the applicant has not met its burden of proof to demonstrate compliance with key parts of the law, including the findings of Section 406(n) and bonding.

12. Since the application contains deficiencies, and it is not in compliance with the law, the EQC must order the Director to deny the permit. *Id.* at §§ 406(h), 406(n), 406(p).

II. The Permit Applicant Has Not Met Its Burden of Proof

13. Under Section 406(n), “The applicant for a surface coal mining permit has the burden of establishing that his application is in compliance with [the WEQA] and all applicable state laws.” The Wyoming Supreme Court has held that this burden extends to any hearing before the EQC on a coal mine permit. *Grams v. Env’tl Quality Council*, 730 P.2d 784, 789 (Wyo. 1986).

14. The burden of proof rests on the permit applicant alone. *Id.* at 406(n). The EQC cannot rely on DEQ’s testimony or evidence production designed to assist the permit applicant in meeting its burden of proof. *See, e.g.* Tr. at 1539 (Mr. Pope: “Brook has a burden of proof in this hearing. And in particular one of the things that Brook has to demonstrate is that everything in the statutes and regulations is included within the permit application.”). This is an important requirement because DEQ must remain in a neutral position as the permit has not yet been issued.

¹ This standard of review is especially applicable here where the scope of the EQC’s decision is to make the decision on the permit application, a decision DEQ has not made.

15. Through these proceedings, the permit applicant did not meet its burden of proof to demonstrate compliance with the law, including the findings of Section 406(n),² and to prove that no part of the permit application is deficient.³

16. The permit applicant presented only one witness who presented testimony about the application, Mr. Barron. Mr. Barron does not have personal experience in highwall mining, and has never helped to prepare a permit application for a highwall mine before. Tr. at 729 (Testimony of Mr. Barron).

17. Mr. Barron admitted that one needs to have a “certain level of expertise” to understand scientific principles, standards of best industry practice, and to interpret regulatory requirements. *Id.* at 733-34. However, Mr. Barron did not have expertise or professional knowledge to present testimony related to subsidence risk or hydrology. Mr. Barron is not a geologist or a hydrogeologist. *Id.* at 728, 1520-21. Nor is he an engineer with expertise in subsidence risk or control. *Id.* at 737; 757-58. Mr. Barron did not prepare the subsidence control plan and was not qualified to present testimony regarding its findings. *Id.* at 734.

18. Therefore, Brook did not present any testimony to meet its burden of proof to rebut the expert testimony, expert reports, and other evidence identifying deficiencies in the permit application presented by the Resource Council, Big Horn Coal, and the Fishers.

III. The Permit Application Does Not Include or Support the Findings of Section 406(n)

19. The critical findings of Section 406(n) have not yet been made, and as DEQ has admitted, they must be made before a decision on the permit application can be made. *See, e.g.* Tr. at 7-8 (Opening statement of DEQ).

² As discussed in the Resource Council’s recent brief on the subject, Section 406(p) dictates that once there is a hearing, the EQC makes the “decision on the application,” not the DEQ. There is no later opportunity for the DEQ to review the permit’s compliance with Section 406(n).

³ *See also* Tr. at 1504-05 (Testimony of Dr. Kuchanur regarding technical adequacy).

20. Additionally, as discussed below, testimony and evidence presented at the hearing demonstrate that the findings cannot be made at this time because of deficiencies in the permit application.

21. The lack of findings, and the inability for the DEQ or EQC to make the findings after the hearing, necessitates denial of the permit application. W.S. § 35-11-406(n).

A. A Finding that the “Application is Accurate and Complete” Cannot Be Made

22. As presented below, the application is neither accurate nor complete for a variety of important issues, including subsidence control, water quality and quantity data and assessment, facilities, coal production estimates, roads, blasting, and bonding.

23. Since a finding that “[t]he application is accurate and complete” cannot be made, the Council must order that the permit application should be denied. *Id.* at § 406(n)(i).

B. The 406(n)(v) Findings Related to Alluvial Valley Floors Cannot be Made

24. Alluvial valley floors (“AVFs”) are defined by the WEQA as “the unconsolidated stream laid deposits holding streams where water availability is sufficient for subirrigation or flood irrigation agricultural activities . . .” *Id.* at § 103(e)(xvii).

25. Protection of these AVFs, both on the mining site and in adjacent offsite areas, is a main requirement of SMCRA to preserve the ecological integrity and “essential hydrologic functions” of important agricultural areas as coal mining moved into the “arid and semiarid regions of the country.” *See* 30 U.S.C. § 1265(b)(10)(F); W.S. § 35-11-415(b)(x).

26. These federal requirements are reflected in Section 406(n)(v) and the findings required for a decision on a coal mine permit to ensure that a permit will protect the functions of AVFs.

27. These findings and affirmative obligations to prevent harm to alluvial valley floors are particularly ubiquitous here, where the alluvial aquifers are an important source of water for local agriculture. *See* Tr. at 532 (Testimony of Dr. Kuchanur affirming the importance of the alluvial aquifers in the permit area and adjacent lands).

28. The permit application does not support a finding that “the proposed operation would . . . [n]ot interrupt, discontinue, or preclude farming on alluvial valley floors that are irrigated or naturally subirrigated . . .” or a finding that the proposed operation will “[n]ot materially damage the quantity or quality of water in surface or underground water systems that supply these alluvial valley floors” as required by Section 406(n)(v)(A)-(B). *See also* Coal Rules, Ch. 12 § 1(a)(i).

29. This finding cannot be made because DEQ has not finished mapping alluvial valley floors in adjacent lands. *See* Tr. at 262 (Testimony of Mr. Kristiansen admitting DEQ did not assess or designate alluvial valley floors in all adjacent lands); Ex. POW 36-37 (describing incomplete surveying and DEQ commitments to do more surveying *after* the permit was deemed suitable for publication and went to public notice).

30. Nor did the permit application contain the important data and analysis required by DEQ rules. Coal Rules Ch. 3 § 2 (prescribing requirements for data and analysis related to AVFs in the permit area and in adjacent lands).

31. The permit application is deficient because it does not include delineation of, or assessment of impacts to, an alluvial valley floor designated by DEQ after the permit application was deemed “technically complete.” Tr. at 112 (Testimony of Mr. Kristiansen: “So at the time the technical completeness was completed for AVFs, I had not yet accomplished the AVF material and there was nothing for them to put in the application. Once it was declared complete,

then we don't revisit that again."'). However, in spite of the lack of designation at the time of permit review, DEQ later determined that the AVF would not be affected and therefore did not have to be designated in the permit application. *Id.* at 113.

32. The same goes for a much larger "potential" AVF along the Tongue River. Ex. DEQ 16; Tr. at 115, 263 (testimony from Mr. Kristiansen that because DEQ determined that the potential AVF won't be affected by mining, it doesn't need to be designated at this time).

33. But herein lies the catch 22 of the permit application: DEQ could not factually determine that the AVF would not be affected *unless* it was properly delineated and assessed *prior* to review of the permit application. *See, e.g.* Tr. at 1375-76 (Testimony of Mr. Wireman: "if you don't know where they are, how can you design a mine plan to protect them?").

34. Even assuming DEQ could determine whether AVFs will be affected *without* delineating them prior to making that assessment, DEQ's determination of whether AVFs will be "affected" by mining is much too simplistic and is based wholly on whether mining will directly occur in the AVF. Ex. DEQ 16; Ex. DEQ 12 at 90; *See also* Tr. at 156-57 (Testimony of Mr. Kristiansen arguing that because there is a 100 foot buffer between surface or underground mining and the creek that the AVF will not be affected); *Id.* at 386.⁴ Mr. Wireman's expert opinion is that you can damage the AVF without direct disturbance, damage that is not considered by Brook or DEQ. *Id.* at 1377-78.

35. DEQ underestimates a possible hydrologic connection between the coal seams and the AVFs because the agency assumed that the Tongue River is the sole source of recharge to the AVFs. Tr. at 339 (Testimony of Mr. Kristiansen). This is not the case. *Id.* at 1380 (Testimony of

⁴ Later Mr. Kristiansen said he made this determination also based on the fact that there would be no "discharge of any kind," tr. at 266, however, as was discussed at the hearing, the company will be applying for a WYPDES permit that will allow discharge of some pollution into waterways. Tr. at 398 (Testimony of Mr. Kunze).

Mr. Wireman that groundwater supports the Slater Creek AVF); *id.* at 1387-92, 1396 (testimony that the AVF along the Tongue River is recharged by the river and by groundwater and that there is a hydrologic connection between the AVFs and the coal seams); Ex. POW 17 at 6 (groundwater from the coal seams “is a source of recharge to Slater Creek alluvium.”); *id.* at 9 (discussing potential impacts to the Tongue River AVFs).

36. Additionally, DEQ even admits that at some point in the future mining could affect the “potential” AVF. Tr. at 266 (Testimony of Mr. Kristiansen saying mapping of the potential AVFs would be done in the future as the mine progresses toward them). DEQ and Brook testimony also admitted that there is a hydrologic connection between the coal seams Brook plans to mine and the AVFs. *Id.* at 295-96, 303 (Testimony of Mr. Kristiansen); *Id.* at 564-65 (Testimony of Dr. Kuchanur); *see also* Ex. DEQ 12 at 231 (identifying a connection between the Carney coal seam and the Tongue River alluvium); Tr. at 788-89 (Testimony of Mr. Barron).

37. This hydrologic connection is of particular importance in the TR-1 area, as the company plans to pump or dewater the area for a source of water for the mine, throughout the life of the mine. The permit application does not consider any impacts associated with this dewatering to the alluvial system along the Tongue River. Tr. at 300.

38. Therefore, as DEQ itself admitted, given the lack of designation of AVFs, and the lack of impacts analysis to these AVFs, DEQ is unable to make the Section 406(n) finding that mining will not materially damage the quantity or the quality of the water in the AVFs (both designated and “potential”). Tr. at 303 (Testimony of Mr. Kristiansen).

39. Since DEQ (or alternatively, the EQC) is unable to make the Section 406(n) findings that AVFs will be protected as required by the law, the permit must be denied.

C. A Finding that the Mine Has Been Designed to Prevent Material Damage to the Hydrologic Balance Cannot Be Made

40. 357 groundwater wells are present within three miles of the permit area. Tr. at 1344 (Testimony of Mr. Wireman).

41. Groundwater flow will be intercepted during mining, up to 99 gallons per minute at the anticipated peak rate. Tr. at 487 (Testimony of Dr. Kuchanur).

42. It is estimated that groundwater levels will not recover to within 10 feet of pre-mining levels for at least 10 years for the Carney Seam and 20 years for the Masters Seam, creating long-term impacts to regional water supply. *Id.* at 486.

43. However, as Mr. Wireman concludes, “[g]roundwater flow in the coal seams is poorly characterized. This constrains the ability to estimate dewatering rates and volumes and to assess probable cumulative hydrologic impacts.” Ex. POW 17 at 6.

44. Even given the limited data collection and modeling assumptions, the permit application acknowledges drawdown impacts to wells outside the permit boundary. Ex. DEQ 12 at 251. However, as explained during testimony, neither Brook nor DEQ did any analysis for the permit application to assess whether drawdown will create material impacts to quantity or quality of those water wells, *or* if those impacts occur, whether replacement water is available. Tr. at 549 (Testimony of Dr. Kuchanur); *Id.* at 1016-17, 1037-39 (Testimony of Mr. Buyok); *Id.* at 1094 (Testimony of Mr. Bocek); *Id.* at 1060-62 (Testimony of Ms Brezik-Fisher).

45. As Mr. Wireman’s expert testimony demonstrated, “That is simply not discussed or addressed in terms of what happens to the water in these wells if you dewater the coal, because they just haven’t dealt with it.” *Id.* at 1344; *see also id.* at 1382-85 (concluding that “there was no way to really assess the potential impact of these domestic wells due to declines in water

levels . . . there just was not enough information and data there” and “we don’t know enough here in this hydrologic system to make any judgments about risk or about impacts.”).

46. Furthermore, as demonstrated below, the permit application does not contain a baseline water quality or quantity assessment for surface and groundwater required by the WEQA and associated regulations. As Ms. Boomgaarden set forth in Big Horn Coal’s opening statement, “Without knowing and understanding the site-specific hydrologic conditions, it simply is impossible for Brook to adequately consider the impacts of its proposed highwall mining operations as the law requires.” Tr. at 19; *see also id.* at 1351 (Testimony of Mr. Wireman that if the baseline data does not exist, you “can’t assess risk” and “can’t assess changes to the hydrologic system”); *id.* at 1352 (“If you want an honest, thorough, rigorous assessment of what’s going on, and if the decisions that need to be made are based on that, then you need an adequate amount of data.”); *id.* at 1439, 1443.

47. These factual findings support a conclusion that the permit application does not contain “a plan to minimize the disturbances to the prevailing hydrologic balance at the minesite and in associated offsite areas and to the quality and quantity of water in surface and ground water systems both during and after mining operations and during reclamation” as required by the WEQA and corresponding DEQ regulations. W.S. §§ 35-11-406(b)(xvii), 406(n)(iii); Tr. at 945 (Testimony of Mr. Gerlach); *id.* at 1372-73 (Testimony of Mr. Wireman: “I don’t think there’s enough data and enough assessment to make any decision along those lines” regarding material damage to the hydrologic system; recommending the permit should be denied); Ex. POW 17 at 3.

48. Nor does the permit application contain the required “plan to ensure the protection of the quantity and quality of, and rights to, surface water and groundwater both within and

adjacent to the permit area” or “[a]n evaluation of the impact of the proposed mining activities that may result in contamination, diminution, or interruption of the quality and quantity of groundwater or surface water within the proposed mine permit area or adjacent areas that are used for domestic, agricultural, industrial, or other legitimate purposes.”. Coal Rules Ch. 2.

49. Nor does the permit application contain a probable hydrologic consequences determination “sufficient to make the determination of W.S. § 35-11-406(n)(iii).” *Id.* § 4(a)(xiv); Ch. 19 § 2(a)(i).

50. Additionally, the Cumulative Hydrologic Impacts Assessment (“CHIA”) has not been completed. DEQ admits that the CHIA is necessary to support the “material damage” finding under Section 406(n)(iii). Tr. at 413, 436, 444 (Testimony of Mr. Kunze that the DEQ cannot make the 406(n) findings without the CHIA).

51. While the CHIA is a document separate from the permit application, Tr. at 413, a “common practice” of DEQ is to finalize the CHIA by the time of public comment to afford an opportunity to raise comments or objections on the CHIA – a process that did not happen here. *Id.* at 423-25; Ex. POW 53.⁵

II. The Permit Application Does Not Include Sufficient Information to Assess and Control Subsidence Risk

52. The company has an obligation to prevent subsidence. A coal mining permit application with underground components, such as this permit application, must include “[i]nformation and evaluations on the potential for and the extent of subsidence, and the effect it may have on structures, the continued use of the surface land and aquifers or recharge areas” and “[e]xcept for areas where planned subsidence is projected to be used, measures to be taken in the

⁵ Testimony at the hearing established that the CHIA was started in 2014 but comments were not requested by reviewing agencies until December 2016, preventing the CHIA from being finalized by the end of the public comment period. Tr. at 425-26 (Testimony of Mr. Kunze with summary from Dr. Bagley).

mine to prevent or minimize subsidence, including backfilling of voids and leaving areas in which no coal is removed.” Coal Rules Ch. 7 § 1(a)(v).

53. Additionally, “[u]nderground mining activities shall be planned and conducted so as to prevent subsidence from causing material damage to structures, the land surface, and groundwater resources.” Coal Rules Ch. 2 § 2(b)(iii); Ch. 7 § 2(b)(iii); *see also* Tr. at 57 (Mr. Kristiansen discussing the subsidence control requirements of Ch. 7 § 2).

54. DEQ regulations further provide that “[a]uger mining may be limited or prohibited to minimize . . . unwarranted subsidence” Coal Rules Ch. 5 § 6(b); *see also* Coal Rules Ch. 3 § 5 (requiring information in the permit application to demonstrate compliance with these standards). This regulation applies to the Brook permit because at various times in the mine plan, the company refers to highwall mining as auger mining or “a similar method to auger mining.” Ex. DEQ 12 at 59, 88, 192; *see also* Tr. at 119, 233 (testimony of Mr. Kristiansen that the auger mining regulations apply to the Brook Mine).

55. DEQ’s Guideline No. 6A, Format and General Content Guideline for Permit Applications, Amendments and Revisions for Coal Mining Operations, requires a subsidence control plan for underground mining operations. A subsidence control plan is also required by federal regulations, incorporated into the state SMCRA program. *See* 30 C.F.R. § 784.20, *et seq.*

56. As acknowledged by DEQ, “subsidence control is of key importance to the mine plan.” Tr. at 162 (Testimony of Mr. Kristiansen).

57. In spite of this “importance,” as explained below, DEQ let the permit applicant proceed with an admittedly deficient subsidence control plan that does not achieve its required objective: to assess, control, and prevent subsidence at the mine site.

A. Subsidence is Prevalent in the Area & Subsidence Risk is Amplified by an Overlap Between the Proposed Permit and Existing AML Projects

58. Abandoned mine land (“AML”) division reclamation work to address subsidence problems in the area is widespread and ongoing. *See* Ex. POW 38-47, 80-82, 86-88. The permit area and areas adjacent to the permit area has active subsidence. Tr. at 1225-26 (Testimony of Dr. Marino); *id.* at 1019-22 (Testimony of Mr. Buyok).

59. DEQ was fully aware of this history of subsidence at the time of its review of the permit application. Tr. at 165 (Testimony of Mr. Kristiansen: “The mines in the Sheridan area all subsided at one point in the past, sooner or later.”); *Id.* at 238; Ex. POW 54.

60. Brook’s proposed permit boundary overlaps with abandoned mines known to cause subsidence. DEQ Ex. 12-145; Tr. at 239-42 (Testimony of Mr. Kristiansen). Brook’s underground mining will occur in close proximity to, and in some cases overlap with these abandoned mines. *Id.*; *see also* Tr. at 244-45 (Testimony of Mr. Kristiansen).

61. In spite of the prevalence of subsidence in the area from abandoned mines, and in spite of the overlap between Brook’s permit and some of these abandoned mines, Brook did not assess potential impacts related to subsidence from its proposed mine. Tr. at 170 (Testimony of Mr. Kristiansen). The company merely partially mapped the historic mining and the potential overlap. *Id.* Brook did not include a discussion about the various AML projects and subsidence caused by historic mining in its subsidence control plan. *Id.* at 752-53 (Testimony of Mr. Barron).

62. Nor did DEQ conduct any independent analysis of potential impacts of ongoing subsidence in the area and its relationship to the proposed Brook Mine. Tr. at 244 (Testimony of Mr. Kristiansen).

63. Nor did Brook verify anticipated subsidence potential at their site with actual subsidence conditions in the permit area. Ex. POW 12 at 13-14, 18 (Dr. Marino concluding: “There is a massive amount of surface subsidence in the area at mine depths similar to that proposed . . . both sag and pit subsidence would be expected at the Brook Mine.”).

64. DEQ and Brook did not even consult with the AML Division staff during review of the permit application to discuss the implications of and concerns related to ongoing subsidence in the area. Tr. at 243 (Testimony of Mr. Kristiansen); Tr. at 757 (Testimony of Mr. Barron).

B. Testimony Demonstrated DEQ Did Not Have the Expertise to Review the Subsidence Control Plan for Technical Accuracy or Completeness

65. The review of the Brook permit was one of the first jobs Mr. Kristiansen had when he started working at DEQ. Tr. at 218-19 (Testimony of Mr. Kristiansen). The Brook permit was the first coal mine permit Mr. Kristiansen coordinated while at DEQ. *Id.* at 226.

66. Mr. Kristiansen does not have any prior experience in reviewing subsidence control plans or highwall mine permits. Tr. at 163 (Testimony of Mr. Kristiansen); *Id.* at 227; Ex. GIL 21-23. Mr. Kristiansen admitted that the District III office of the Land Quality Division did not have experience in reviewing underground mine permits, and Brook’s permit application was the first highwall mine proposal the District had reviewed. Tr. at 226-27.

67. Because of his lack of experience, Mr. Kristiansen “had to attend” training by the Office of Surface Mining Reclamation and Enforcement (“OSMRE”). Tr. at 164. However, in review of the permit application, Mr. Kristiansen did not utilize key chapters of the OSMRE training materials related to subsidence prevention and risk. *Compare* Ex. DEQ 17-20 to Ex. POW 84; *see also* Tr. at 167, 376-77. Notably, he did not consider or evaluate important formulas related to geotechnical engineering and subsidence risk. *Id.* at 251.

68. Nor did Mr. Kristiansen perform any independent verification of admittedly “limited” and “basic” analysis done by Brook’s consultant. Tr. at 166-68; 237.

69. Mr. Kristiansen testified that he did not conduct independent verification because Brook’s consultant had “levels of experience significantly higher than [he] has,” Tr. at 168, although he was not sure who actually prepared the subsidence control plan. *Id.* at 253. Mr. Kristiansen also admitted that Dr. Marino has more experience than him. *Id.* at 251.

70. In fact, Mr. Kristiansen testified that he “was not expert enough” to even know what “technical and scientific standards” a subsidence control plan must meet. *Id.* at 234.

71. Nor did he have any experience or background in using any of the formulas discussed in the OSMRE course materials. *Id.* at 251.

72. Thus, even after the OSMRE course, Mr. Kristiansen did not have expertise in reviewing a subsidence control plan. *Id.* at 252 (Testimony from Mr. Kristian: “I would not say I’m an expert, no.”)

73. Mr. Kristiansen was the only DEQ staff member who reviewed the subsidence control plan and he did not reach out for assistance from anyone else at DEQ for assistance with his review. *Id.* at 234. Nor did he consult any background information beyond the OSMRE course materials he reviewed. *Id.* at 252.

74. With this lack of experience and expertise on the part of DEQ, Brook’s subsidence control plan was essentially not reviewed and deemed “technically adequate” with no basis for that determination.

75. As such, DEQ’s determination of “technical adequacy” for the subsidence control plan was arbitrary and capricious and an abuse of discretion, as the agency had no factual basis for making its decision.

C. The Subsidence Control Is Deficient Because It Was Not “Stamped” by a Professional Engineer

76. Geotechnical information or analysis in a mine permit application must be provided by a licensed engineer in Wyoming. This is necessary for DEQ to be able to rely on the accuracy of the information. *See* Tr. at 379 (Testimony of Mr. Kristiansen that information provided by licensed engineers is “certifiably accurate.”); *id.* at 1238-39 (Testimony of Dr. Marino that other subsidence control plans he has seen have been stamped by professional engineers and if “you’re doing engineering work, there’s a stamp for it.”).

77. However, no professional engineer “stamped” the subsidence control plan, rendering it deficient. Tr. at 738 (Testimony of Mr. Barron).

D. The Subsidence Control Plan and Associated Geotechnical Data is Neither Accurate nor Complete

1) Dr. Marino Concluded That the Subsidence Control Plan Is Deficient

78. Geotechnical engineering expert Dr. Marino concluded that “the application is severely deficient in the analysis and data to be able to make any kind of analysis of what the likelihood of subsidence would be in the future.” Tr. at 1200 (Testimony of Dr. Marino); Ex. POW 12 at 17 (“A detailed and advanced subsidence engineering analysis is required given the reported geologic and mining conditions. However, the mine subsidence potential investigation provided in the mine application is wholly inadequate . . .”); Ex. POW 11 at 42 (The subsidence control plan has a “lack of geomechanical understanding” and “insufficient information”).

79. Dr. Marino also concluded that the data and analysis included in the subsidence control plan “is far below industry standards.” Tr. at 1228; POW 11 at 42. He also concluded that the permit application did not meet scientific standards. *Id.* at 1246 (“There’s no science, in essence”).

80. The application contained only “inferences of attempts at calculating” pillar strength, and Dr. Marino concluded “there’s no equations given, there’s no strengths given.” Tr. at 1208. Additionally, the equation that was used in the permit application is an equation for bituminous coal, not the subbituminous coal found in the permit area. *Id.* at 1208-09, 1247. There was also no assessment of pillar width and height. *Id.* at 1209.

81. The permit application did not include an assessment of the potential of roof or floor collapse. Tr. at 1211 (Testimony of Dr. Marino: “There’s no mention of failure of . . . roof or floor conditions in terms of analysis or safety factors or anything like that.”).

82. The permit application’s limited data prevents an accurate or complete analysis of subsidence risk and engineering safety factors. Tr. at 1216 (Testimony of Dr. Marino: “here, we don’t have hardly any input data. If you don’t have the right input data, even if you have the right prediction method, your calculated value is suspect.”); *id.* at 1223, 1234; Ex. POW 12 at 18 (concluding that the permit application “essentially [had] no short and long term mine stability analyses of all potential failure modes that can lead to surface subsidence” and “no appropriate examination of risk, severity, and types of potential subsidence”).

83. The permit application does not completely or accurately assess the complex and diverse geological conditions in the permit area. *See, eg.* Tr. at 1221 (Testimony of Dr. Marino: “we’ve got a variety of different depths, different thicknesses of coal, different interburden thicknesses, different seam splits, none of this is really addressed in the permit in the application.”); *id.* at 1244 (the permit application is “not complete in a technical form because there’s not enough information to evaluate various mining scenarios in the various geologic conditions.”); Ex. POW 12 at 17; Ex. POW 11 at 33.

2) Brook & DEQ Admit That the Subsidence Control Plan is Deficient

84. DEQ admits that “data and studies” related to subsidence “have to be complete enough in this permit application to make and support” the finding that subsidence is not likely to occur. Tr. at 257 (Testimony of Mr. Kristiansen); *see also* Tr. at 742-43 (Testimony of Mr. Barron regarding this finding, its scope, and that its justification is a part of the permit application).

85. Yet, DEQ and Brook admit that additional geotechnical studies are needed before the company can justify the finding. *Id.*; *see also* Tr. at 323-25 (Mr. Kristiansen admitting that the testing Brook has done to date is not sufficient to assess whether subsidence will occur); *Id.* at 380; Tr. at 662, 743, 762 (Testimony of Mr. Barron: “To comply with the commitments within the permit there are additional studies that need to be done.”).

86. DEQ admits that the subsidence control plan contained “narrative” not technical information. Tr. at 247, 254 (Testimony of Mr. Kristiansen).

87. Brook admits that the finding that subsidence will not occur is not actually supported by data in the permit application and is merely a commitment to achieve a performance standard with no basis no show it will actually be achieved. Tr. at 745 (Testimony of Mr. Barron that the limited data in the permit application provided a “general sense” but did not provide a “specific conclusion” and that the statement in the subsidence control plan that “Highwall mining should not result in surface subsidence” was merely “a commitment to the performance standard.”).

88. For instance, the permit application is deficient because there was only one coal strength test done for the entire permit area. Tr. at 328 (Testimony of Mr. Kristiansen); *id.* at 1290 (Testimony of Dr. Marino: “it means nothing to me, one test”).

E. Expert Dr. Marino Demonstrated Subsidence Risk if Mining Proceeds

89. Dr. Marino's expert report concludes that "There is a serious risk of surface subsidence from roof collapse in the proposed mining [area]." Ex. POW 12 at 15; *see also* Tr. at 1225-28.

90. Dr. Marino's analysis shows that mine collapse is likely to occur because of the dominant presence of clay materials in the roof and floor on the mine. Tr. at 1210 (Testimony of Dr. Marino: "from reading the permit, the vast majority of the material's claystone . . . claystone is made of clay. And when that gets exposed to water, it deteriorates. It softens and swells and it causes failure."); *see also* Ex. POW 12 at 6, 9, 15-16 ("from our experience with the claystone roof and floor, the proposed mining can result in sag subsidence"); *id.* at 18. Brook's safety factor calculations did not account for the presence of clay. Tr. at 1226 ("no significant clay seam [is] assumed in the analysis.").

91. The presence of thin interburden and faulting also presents subsidence risk. *Id.* at 1219-21.

92. Dr. Marino found that even when using Brook's assumptions, "the stability factor calculates to an unacceptable value of less than one at [Brook's] pillar pressure where the panels are sufficiently wide." Ex. POW 12 at 11.

F. Coal Recovery Ratios Do Not Cure the Deficiencies in the Permit Application

93. DEQ confirmed Brook's finding that the mine would not create subsidence because of heavy reliance on an understanding that 50% of the coal would be left in the seam post-mining. Tr. at 120, 126, 169, 311, 330, 358 (Testimony of Mr. Kristiansen).

94. However, Brook's own permit application shows that recovery ratios will be from 45-60% and therefore will exceed 50%. Ex. DEQ 12 at 35; Tr. at 677, 760 (Testimony of Mr. Barron).

95. Dr. Marino's expert analysis shows Brook's extraction ratio could be as high as 60-70 percent. Tr. at 1204, 1236 (Testimony of Dr. Marino); Ex. POW 12 at 7.

96. Regardless, even Mr. Kristiansen admitted that the recovery ratio is just one factor to consider, and that you must also consider the strength and width of the coal pillars, the roof materials, and the floor materials to properly assess whether subsidence will occur. Tr. at 313-14.

97. Dr. Marino's expert analysis also shows that the 50% ratio should not be given as much weight as DEQ gives it. Tr. at 1236 (Testimony of Dr. Marino: "That standard . . . really doesn't apply if you have safety factors that are lower than what are acceptable. It should be based on safety factors, not on a percent."); *id.* at 1291 (noting that Brook's recovery rates "are general numbers that encompass[] the whole complex."); Ex. POW 12 at 7, 10 (noting that Brook's information is "typical" and generalized, not specific enough to provide DEQ a basis to conclude subsidence will be prevented).

98. Moreover, even assuming that the 50% extraction rate is technically significant *and* assuming that Ramaco will meet that rate, DEQ will not be able to independently verify or enforce the rate as a permit term or condition. Tr. at 229-30 (Testimony of Mr. Kristiansen: "I can't verify that"; admitting there is "no way" for DEQ to ensure compliance).

G. The Future MSHA Ground Control Plan is Not a Substitute for a Technically Complete and Adequate Subsidence Control Plan

99. Brook testified that the yet-to-come MSHA ground control plan can be viewed as a remedy for its deficient subsidence control plan. *See* Tr. 15-16 (Brook opening statement); *Id.* at 663 (Testimony of Mr. Barron: "the calculations necessary to provide the information for MSHA

are exactly the same data that DEQ is looking for each one of these panels.”); *Id.* at 746, 1533-34.⁶

100. Mr. Barron testified that the additional studies suggested by Dr. Marino in his expert report “are appropriate.” Tr. at 674-75 (admitting Dr. Marino’s expertise). However, he testified that these studies would be done for the MSHA ground control plan, not as part of the subsidence control plan. *Id.* at 675 (“it is a commitment as part of the permit application in the ground control plan that those [studies] will be done.”).

101. As Dr. Marino testified, the ground control plan is not a substitute for the additional geotechnical studies that must be done for the permit’s subsidence control plan *before* permit issuance. Tr. at 1202-03 (Testimony of Dr. Marino that MSHA won’t be concerned about stability in areas of the mine where miners will not be present, that MSHA is not the agency that “determines whether or not the mine plan is approved for surface subsidence,” and that the agency “has a different scope”); *id.* at 1241-42, 1245 (Dr. Marino testifying that future testing and analysis through the MSHA permit will not cure deficiencies in the subsidence control plan); Ex. POW 12 at 9 (“[A]pproval from MSHA (whose responsibility is safety) is irrelevant as the concern here is land subsidence.”).

102. Additionally, MSHA is focused on “looking at short-term conditions, when the miners are in, not when it’s abandoned.” Tr. at 1273 (Testimony of Dr. Marino that MSHA does not consider the risk of long-term subsidence at a mine site); *id.* at 1286 (testimony that the 1.3 safety factor is a “short-term safety factor” not long-term); *compare to id.* at 1535 (Testimony of Mr. Barron: “For the short term, we will stick with the 1.3 factor of safety.”).

⁶ DEQ has never supported Brook’s assertions regarding the ground control plan. In fact, DEQ has little understanding of what a ground control plan even is or what it requires. *See* Tr. at 330, 344 (Testimony of Mr. Kristiansen saying “I do not know” in response to a question about what engineering studies MSHA requires).

103. Dr. Marino’s conclusion was based on significant professional experience in preparing and reviewing subsidence control plans over his multi-decade career. Tr. at 1196 (Testimony of Dr. Marino regarding his background and experience); *id.* at 1237 (“there’s nothing in [other subsidence control plans I have reviewed] about MSHA, because MSHA is not directly related to subsidence on the ground surface.”)

104. Dr. Marino’s conclusions that the ground control plan is not meant to control subsidence and is not a substitute for the subsidence control plan required as part of the permit application are verified by Mark Eslinger, a former Supervisory Mining Engineer for MSHA, who in the scope of his multi-decade career reviewed ground control plans. Exhibit A (letter from Mark Eslinger to Shannon Anderson, July 11, 2017 with attached C.V. of Mark Eslinger).⁷

105. Even Brook admits that the ground control plan is only meant to address the safety of miners. Tr. at 663, 747 (Testimony of Mr. Barron: MSHA is “an organization whose sole role is the protection of the safety of miners.”). As a result, Brook admits that MSHA will not focus on subsidence damage to land resources or any other potential impacts of subsidence except safety of workers. *Id.* at 748.

III. The Permit Application Does Not Have Sufficient Baseline Water Data

106. Coal seam aquifers are locally and regionally important sources of water. *See* Tr. at 192 (Testimony of Mr. Kristiansen: “By and large, the coal beds are the primary aquifers in the basin . . .”)

107. In the permit area, and in surrounding areas, other aquifers, including overburden aquifers, also supply water for homes and agriculture or are capable of supplying water for these purposes.

⁷ These exhibits are included as part of these findings to rebut testimony provided by Mr. Barron.

108. However, in spite of the presence of these aquifers, there was very little and in some cases *no* baseline data collected to analyze the characteristics of, and projected impacts to, these aquifers. *See, eg.* Tr. at 915 (Testimony of Mr. Gerlach); Ex. BHC 9.

109. Mr. Wireman's expert analysis shows that Brook did not collect baseline water samples in a scientifically defensible way, rendering the permit application deficient. *See, e.g.* Tr. at 1345-48; Ex. POW 17 at 3 (The permit application "present[s] a very incomplete characterization of the hydrogeology and surface water hydrology.").

110. For instance, Brook did not conduct baseline water monitoring in the critically important TR-1 area – the first area Brook proposes to mine. *See* Tr. at 210-14, 383 (Testimony of Mr. Kristiansen); *Id.* at 513, 518, 519 (Testimony of Dr. Kuchanur). During technical review, DEQ identified the lack of data as a deficiency; however, Brook never provided additional information to remedy this deficiency. *Id.* This means that the lack of baseline water quality data for the TR-1 area remains a deficiency in the permit application. *Id.* at 217 (Testimony of Mr. Kristiansen admitting the deficiency and that this lack of data prevents the permit application from being "accurate" and "complete"). Additionally, generalities regarding aquifer characteristics from other portions of the mine are not applicable to this area, preventing other data from curing any deficiencies. *Id.* at 513.

111. Aside from the TR-1 area, no monitoring wells were completed in the overburden or interburden aquifers, at any locations throughout the permit area. Tr. at 511-12 (Testimony of Dr. Kuchanur); Ex. DEQ 6 at 24.

112. Testimony confirmed that "[m]onitoring in the alluvium is important." Tr. at 533 (Testimony of Dr. Kuchanur). However, no baseline monitoring wells were completed in the alluvial aquifers – aquifers that are important to local agriculture and must be protected during

mining. *Id.* at 532, 539; *id.* at 1363-65, 1373 (Testimony of Mr. Wireman); Ex. POW 17 at 5 (Mr. Wireman's conclusion that "[t]his is a serious omission."); *see also id.* at 9.

113. Brook has committed to a limited set of three operational monitoring wells in the alluvium (Tr. at 533), but even if that operational monitoring was sufficient, it does not cure the lack of baseline monitoring.⁸

114. DEQ's groundwater expert was not involved in decisions allowing Brook to limit its baseline water monitoring program. Tr. at 523 (Testimony of Dr. Kuchanur).

115. Only fifteen wells were used for assessment of groundwater levels, in the entire permit area. Tr. at 523, 567 (Testimony of Dr. Kuchanur). And these wells only collected baseline water data from the coal seams. *Id.* at 524. This means that no water data was collected for non-coal bearing aquifers. *Id.* at 1382-83 (Testimony of Mr. Wireman, noting that Brook's application finds that most water wells in the area are not in the coal aquifers and no data is available for those aquifers).

116. Only *one* test was conducted to determine hydraulic conductivity, porosity, and storage coefficient values. Tr. at 524-25, 535, 1501 (Testimony of Dr. Kuchanur). This means that only *one* test was taken in the northeast portion of the permit for these very important water parameters and to characterize them for the entire permit area, rendering the analysis deficient. Tr. at 1354 (Testimony of Mr. Wireman); *id.* at 1355 ("a single value for the whole area . . . [can] in no way [] capture the complexity in the heterogeneity"); Ex. POW 17 at 5, 8; *see also id.* at 525 (Testimony of Dr. Kuchanur: "We need these parameters to characterize the aquifer"; acknowledging that if the test is not "an effective parameter that provides the best match to . . . what you see in the ground in terms of water levels" then the data is not sufficient.)

⁸ Additional operational monitoring for water quality and quantity will not remedy deficiencies related to baseline water data collection. Operational monitoring (during or post-mining) will itself be deficient without a scientifically defensible baseline to compare monitoring results to.

117. Mr. Wireman concluded that Brook did not “get data from monitoring stations throughout this permit area” as required to properly assess baseline water conditions and to understand the complexity and diversity of water quality and quantity in the area. Tr. at 1345 (Testimony of Mr. Wireman); *see also id.* at 1349-51.

118. For surface water monitoring, upstream and downstream monitoring stations on Slater Creek and Hidden Water Creek were used for baseline water monitoring. Tr. at 395 (Testimony of Mr. Kunze). However, data during the winter months was not collected. *Id.* This resulted in no water quality data being collected for Hidden Water Creek. *Id.* at 396. Historic data indicates that “in Hidden Water Creek, there was typically water in that creek in the winter, not in the summer” and that means water was not collected at the time the stream typically has water. *Id.* at 1361, 1402 (Testimony of Mr. Wireman); Ex. POW 17 at 7.

119. The lack of data collection from October to March prevented consideration of “seasonal differences” that can be significant and “very important.” Tr. at 1345, 1361-62 (Testimony of Mr. Wireman).

120. Groundwater data did also not account for seasonal changes, rendering it deficient. *Id.* at 1355 (“a potentiometric surface drawn for January water levels could be quite different than the one drawn with May water levels”).

121. Aside from seasonal deficiencies, Brook’s data of Slater Creek was deficient in other ways too. Tr. at 1366 (“There’s not enough characterization of Slater Creek.”); *id.* at 1363 (Slater Creek monitoring was not used to determine hydraulic conductivity values).

122. Brook’s lack of baseline water monitoring data was supplemented with other data sources. Tr. at 396 (Testimony of Mr. Kunze). However, this data was very old and still deficient. *Id.* at 1362-63 (Testimony of Mr. Wireman).

123. Determining the baseline water quality of Hidden Water Creek is especially important as Brook plans to divert the stream for at least three years. Tr. at 404 (Testimony of Mr. Kunze). Without baseline water quality data for Hidden Water Creek it will be impossible for DEQ to know if the creek's water quality or quantity will be impacted by mining operations.

124. No water monitoring was conducted on the Tongue River or Goose Creek in the permit area. Tr. at 408, 411-12 (Testimony of Mr. Kunze); *id.* at 1367 (Testimony of Mr. Wireman); Ex. POW 17 at 5.

125. As a result of this limited data collection, the hydrologic impacts model was limited and assumptions had to be made. Ex. DEQ 12 at 213 ("Limitations and assumptions specific to this modeling effort are primarily due to the complexity of the hydrogeologic system and a lack of data on physical and hydraulic characteristics of the aquifers and confining units being modeled."); *see also* Tr. at 528 (Testimony of Dr. Kuchanur agreeing that there are assumptions and limitations in the model). The data collected provided a "limited understanding of the coal location, continuity and hydrology." Ex. DEQ 12 at 529; Ex. POW 17 at 8.

126. Given these limitations and assumptions, the model was designed to provide a "general understanding of regional groundwater impacts." *Id.* The model was not, as Dr. Kuchanur testified, sufficient to serve as a "good predictive tool" of probable hydrologic consequences specific to proposed mining activities. *Id.*; Tr. at 530; *see also id.* at 1368-70 (Testimony of Mr. Wireman regarding the model's deficiencies).

127. The model was also deficient because it did not analyze or predict drawdowns to overburden aquifers. MP 6.2.3 ("Drawdowns of the overburden were not modeled . . ."); Tr. at 955 (Testimony of Mr. Gerlach: "there's no modeling of drawdown in the overburden."); Ex. POW 17 at 8 (Mr. Wireman concluding that "The modeling effort was limited to estimating

drawdowns in the coal seams . . . [m]odeling the coal seams as hydrologically isolated is not based on real data and is far too simplistic.”).

IV. The Permit Does Not Comply With Water Well Replacement Requirements

128. The WEQA requires coal mine operators to “replace” a surface or underground water supply “where the supply has been affected by contamination, diminution or interruption resulting from the surface coal mine operation.” W.S. § 35-11-415(b)(xii). A plan to meet these requirements must be a part of the permit application. Coal Rules Ch. 2 § 5(a)(ix)(E).

129. This requirement is especially important here, where 357 water wells are within the “zone of potential influence” of the mining operation. *See* Tr. at 288 (testimony of Mr. Kristiansen).

130. The permit application includes a commitment to replace only adjudicated water wells that will be impacted by mining activities. Ex. DEQ 12 at 52, 62.

131. The permit application’s water replacement limitations contravene the intent of Section 415’s requirements. Tr. at 521 (Testimony of Dr. Kuchanur); *see also* Ex. POW 17 at 4 (Mr. Wireman concluding that “Brook mine only agrees to replace impacted wells if they are adjudicated. This is not appropriate or sufficient since most domestic /stock wells are not adjudicated.”).

132. DEQ confirmed that removing “adjudicated” from the application is required through testimony at the hearing, and made the recommendation to the EQC to make the permit change. Tr. at 500, 520-22 (Testimony of Dr. Kuchanur).

V. The Permit Application Does Not Contain Any Limits or Restrictions on Blasting to Protect Property and Public Health

133. Blasting causes vibrations and is also a source of noise and air pollution. Tr. at 594-95 (Testimony of Mr. Emme).

134. “Orange clouds” produced from blasts often result from wet conditions. *Id.* at 597. Orange clouds have a high level of nitrogen oxides and the pollution that results is “highly toxic” and can be dangerous to breathe. *Id.* at 608. If an orange cloud “drifts” off site, it can settle back to the surface. *Id.*

135. Blasting is of particular concern to neighboring landowners. *Id.* at 1070-71 (Testimony of Ms. Collins); *Id.* at 1092-93 (Testimony of Mr. Bocek).

136. Blasting is also of concern to members of the public who recreate in the area given pollution, noise, and other impacts. Tr. at 1118 (Testimony of Ms. Malone).

137. A coal mine permit application must contain a blasting plan. Coal Rules Ch. 2 § 5(a)(vii). This plan must include “[p]roposed compliance with limitations on ground vibration and airblast, the basis for those limitations, and methods to be applied in controlling the adverse effects of blasting operations,” a “worst-case scenario” blasting estimate, identification of dwellings and structures in close proximity to proposed blasting locations, and a description and location of blasting monitors. *Id.*

138. The blasting plan must include sufficient terms and conditions for DEQ to determine compliance with the Chapter 6 blasting standards. To ensure compliance, the administrator (or his substitute) may request any additional information “determine[d] necessary” as part of the blasting plan. *Id.*; Tr. at 600 (Testimony of Mr. Emme). DEQ did not do that for this permit. *Id.*

139. Brook’s blasting plan is deficient because it does not describe how frequently blasting will occur and in what amounts or where blasting will occur. Tr. at 597-99 (Testimony of Mr. Emme).⁹ Nor does it include the proposed locations of monitors.

⁹ Brook originally proposed more detail but Mr. Emme asked them to remove it because if they would have blasted as proposed by the company “we’d have a lot of fly rock.” Tr. at 623.

140. It also does not describe what type of blasting will occur, for instance cast blasting, even though DEQ assumed that cast blasting would not be done in its review of the permit application. Tr. at 596 (Testimony of Mr. Emme).

141. Hundreds of residents live within a half-mile distance of the permit area, yet DEQ did not consider any restrictions or conditions on blasting to address impacts. Tr. at 593, 595 (Testimony of Mr. Emme).

142. DEQ (and in turn the EQC) has authority to limit blasting, in any number of ways, to protect public health and property. Tr. at 593-94 (Testimony of Mr. Emme that DEQ can put in place conditions if they are “advantageous.”).

VI. The Permit Application Does Not Disclose or Assess Impacts from Mine Traffic

143. The mine proposes to use large semi-trailer trucks with tandem trailers to transport coal. *See* Tr. at 148 (testimony of Mr. Kristiansen).

144. The mine plan is deficient because it does not estimate truck traffic, disclose any impacts to public or private roads used by the public, and does not include a traffic plan, even though according to the mine plan those “plans” have been “previously formulated.” Ex. DEQ 12 at 21.

VII. The Permit Application Illegally Allows Mining Through and Under a County Road

145. The permit application does not incorporate any agreements for road use with any governmental agencies or entities because no such agreements exist at this time. Tr. at 151 (Testimony of Mr. Kristiansen); Tr. at 702, 764 (Testimony of Mr. Barron that the permit applicant or consultants have not had any conversations with the county about road use).

146. Nor are there any proposals to relocate any public roads included in the permit application. *Id.* at 767 (Chairman Bagley: “Yeah, I would say that we have established that the plans to relocate that county road are not in the permit application.”).

147. Additionally, DEQ has not held a public comment opportunity or public hearing on any proposals to relocate any public roads within the permit area.

148. As such, the permit application is deficient because it does not include a 100 foot buffer around all public roads. Coal Rules Ch. 12 § 1(a)(v)(D); *see also* Ex. POW 31.

149. DEQ ignored this requirement in its permit review, partly because DEQ determined that only public roads outside the permit boundary would be impacted. Tr. at 277 (Testimony of Mr. Kristiansen that the “very minor” “narrative description” of impacts to public roads was sufficient because the roads are “outside the permit boundary.”).

150. However, the mine will directly impact Slater Creek Road inside the permit boundary, preventing landowners who use the road from accessing their property. *See* Ex. DEQ 12 at 131; Tr. at 279, 282 (Testimony of Mr. Kristiansen); *Id.* at 764-67 (Testimony of Mr. Barron that mining will come within 100 feet of Slater Creek Road and Slater Creek Road will have to be relocated); Ex. POW 33-34. The mine will also directly impact Hidden Water Road. *Id.*

VIII. The Permit Application Does Not Disclose or Include Any Facilities Necessary to Process, Transport, or Sell the Coal

151. For the purposes of delineating a permit boundary, the WEQA defines “Surface coal mining operation” to mean surface lands where surface coal mining activities take place and/or surface lands “incident” to underground coal mining activities. The operation shall also “include any adjacent land the use of which is incidental to any of these activities, all lands affected by the construction of new roads or the improvement or use of existing roads to gain access to the site

of these activities and for haulage . . . processing areas, shipping areas and other areas upon which are sited structures, facilities or other property or materials on the surface, resulting from or incident to these activities.” W.S. § 35-11-103(e)(xx); *see also* Tr. at 269 (Testimony of Mr. Kristiansen admitting that DEQ is supposed to require all facilities and roads that are incidental to mining to be included in the permit).

152. The permit application fails to include associated facilities necessary to get coal to a point of sale, including necessary roads and facilities. Ex. DEQ 12 at 21-22. These facilities were previously contemplated but were not included in the permit application. Ex. POW 48-50.

153. The permit application also is deficient because it does not include the proposed coal “processing areas” associated with Brook’s planned industrial park and manufacturing facilities, which are incidental to the mine. Ex. POW 26-27.

154. DEQ was fully aware of these facilities *before* the permit went to public notice and therefore they should have been considered by the agency in its review. Ex. POW 28.

IX. The Permit Application Does Not Include Other Facilities Planned at the Mine

155. Brook has planned a “long-term sump” at the TR-1 mine area. Tr. at 121-22; *Id.* at 193 (Testimony of Mr. Kristiansen: “The first pit, TR-1 pit is going to be kept as a sump . . . throughout mine life” for a variety of “different purposes.”).

156. Yet, this facility that will be in place the life of the mine is not identified or discussed *anywhere* in the permit application. Tr. at 198 (Testimony of Mr. Kristiansen).

157. There is also a corresponding lack of analysis of any associated impacts, including hydrologic impacts or impacts to land uses, which will result from this life of mine facility.

158. Brook anticipates it will need 328,200 gallons of water per day, and the TR-1 sump is a likely source for this water. Tr. at 433 (Testimony of Mr. Kunze).

X. The Permit Application Does Not Include an Accurate Projection of Coal Production

159. The mine plan must include “[a] complete operations plan proposed to be conducted during the life of the mine” with an accurate estimate of “the number of acres that will be affected annually” and the “anticipated annual and total production by tonnage.” *Id.* at § 5(a)(i).

160. Accurately estimating the amount of coal to be mined is a critical component of any mine plan as it establishes the time period of the permit and the level of anticipated impacts. Ex. POW 1 at 3, Ex. POW 17 at 3.

161. Originally, company representatives stated publicly that they anticipated mining 6-8 million tons per year when “Asian export markets” were the proposed market for the coal. Ex. POW 25 at 4, 13. However, now, the company plans to mine a small amount of coal for “feedstock” for their planned processing and manufacturing facilities. *See, e.g.* Ex. POW 72 at 9 (showing use of 30,000 tons of coal for a similar facility to that proposed by Brook).

162. The project keeps shifting, but meanwhile, the estimated annual production in the mine plan has not been updated since 2014. Tr. at 273-74 (Testimony of Mr. Kristiansen admitting that the projected production estimates in the permit application were not updated and DEQ did not ask any questions of the company related to production estimates).

163. The permit application is deficient because it does not contain an accurate estimate of annual and total coal production.

XI. Coal Production Will Exceed the Limit Established by the Air Quality Permit

164. The air quality permit is mentioned in the mine plan but says the permit “will be submitted.” Ex. DEQ 12 at 84. The permit application was not updated to disclose that there is a final air quality permit that was received *prior* the coal mining permit going to public notice nor does it explain any limits of on coal production that result from the air quality permit.

165. The air quality permit limits coal production at the Brook Mine to two million tons per year. Ex. POW 29 at 6.

166. For years four and five, estimated annual production exceeds two million tons, therefore proposing to violate the production limit established in the company's air quality permit. Ex. DEQ 12 at 98.

XII. The Permit Application Does Not Include a Proposed Bond that Meets the Requirements of Section 417

167. Requirements for mine reclamation bonds are governed by Section 417 of the WEQA and corresponding DEQ regulations. Coal Rules Ch. 12 § 2.

168. The reclamation bond must cover the *entire* cost of surface and water reclamation, including estimates of costs of third-party contractors necessary for the state to assume reclamation responsibilities in the case of a bond default. W.S. § 35-11-417(c)(i) (the bond should equal the “cost of reclaiming the affected land disturbed” . . . “plus the administrator’s estimate of the additional cost to the state of bringing in personnel and equipment should the operator fail or the site be abandoned.”); *see also* Tr. at 611 (Mr. Emme testifying that the bond is important “[s]o if an operator walks away, the state has revenue money in place to reclaim the mine site.”).

169. The bond amount must account for “the worst-case scenario.” Tr. at 636 (Testimony of Mr. Emme); Ex. POW 64 at 15 (“The bond amount will reflect the ‘worst case scenario’ i.e., the cost of reclaiming the site if the permittee forfeits the bond at the point of maximum reclamation cost liability, under the reclamation and operation plans approved as part of the permit.”).

170. Like the necessary findings of Section 406(n) discussed above, DEQ has stated that it has yet to calculate the bond amount. Tr. at 586-87 (Testimony of Mr. Emme). The bond

amount is not yet calculated because Brook has not provided “specifics” on their mining plans for the first year of their operations. *Id.* at 587, 609.

171. The lack of a bond in the permit at the time of public comment, like the CHIA, prevented adequate public review and comment on the proposed bond amount. *See* Tr. at 611 (Mr. Emme testifying that “The bond is set in the permit, and there is a public comment period before the permit is approved.”); *id.* at 612-13 (Testimony of Mr. Emme that the bond amount for an initial permit is generally set at a time that allows public comment, but for this permit there is no public comment opportunity for the bond amount).

172. Since DEQ has yet to set the bond amount, the only bond estimate that was available for public comment was Brook’s estimate.

173. Brook’s bond estimate was deficient because it did not include the costs of certain contingency factors and does not follow DEQ guidance to establish other contingency factor amounts. Ex. DEQ 31 at 16; Ex. POW 1 at 10-11.

174. Contingency costs are necessary *regardless* of the scope or extent of mining activities. Tr. at 614 (Testimony of Mr. Emme). These contingency costs “are very important if the state has to take over [the] bond.” Tr. at 613 (Testimony of Mr. Emme); *see also* Tr. at 773 (Testimony of Mr. Barron confirming Mr. Emme’s statement).

175. As such, these lines should not have zero estimates. *Id.* at 614 (Testimony of Mr. Emme: “There should be some number.”).

XIII. The Permit Application Does Not Contain a Surface Owner Protection Bond

176. In addition to the findings of Section 406(n), and the reclamation bond discussed above, a surface owner protection bond must be calculated prior to a decision on the permit application. *See* Tr. at 66-67 (Testimony of Mr. Kristiansen).

177. As far as the Resource Council is aware, the process to calculate that bond has not yet begun. Tr. at 201-02 (Testimony of Mr. Kristiansen).

178. Therefore, the EQC cannot find that the permit application should be approved.

PROPOSED PERMIT CONDITIONS OF APPROVAL & TERMS¹⁰

Proposed Blasting Permit Terms

Rationale: Blasting operations must prevent injury to persons and damage to public and private property outside the permit area. W.S. § 35-11-415(vi)(C). DEQ and the EQC have significant discretion to require permit terms to protect public health and safety and to prevent damage to homes and structures from blasting operations. *See Order, In the Matter of Objections by the Powder River Basin Resource Council to the Amendment of the RAG Eagle Butte Permit, Permit No. 428-T3, Docket No. 00-4802, June 26, 2003 at 10-12; Tr. at 608 (Mr. Emme testifying that “In the Powder River Basin, all the mines have either permit conditions or have voluntarily put restrictions on their operations.”); id. at 617-18, 639-40.*

Proposed Permit Terms:

Brook shall not conduct cast blasting. Blasting will only be authorized from 9 a.m. to 4 p.m., M-F. No blasting shall occur on public holidays. Brook shall not conduct blasting if wind is directed at any residence or business within 2,500 of the proposed blast. No blasting can take place on days with inversions or inclement weather (snow, rain). Brook will install, at its expense, a seismic monitor for any adjacent landowner that requests one as part of a pre-blast survey. The requesting landowner shall have access to all data collected. Brook will install, at its expense, a downhole camera for a water well to observe any impacts pre, during, and post blast for any landowner that requests one as part of a pre-blast survey.¹¹ The requesting landowner shall have access to all data collected. Brook will provide notice to any landowner within ½ mile of its permit area of proposed blasting times and locations.

Proposed Permit Term to Include the Buyoks’ Homes and Wells within the Area Designated For Pre-Blast Surveys

Rationale: A resident or owner of a man-made dwelling or structure within one-half mile of any portion of the permitted area can request a pre-blasting survey. W.S. § 35-11-415(vi)(E). According to Brook’s GIS mapping, Mr. Buyok’s home lies around 40 feet outside the ½ mile boundary and his water well lies about 20 feet outside the boundary. Tr. at 1017-18 (Testimony of Mr. Buyok). Brook has offered to include Mr. Buyok’s

¹⁰ Brook expressed a willingness to accept any permit condition proposed by the DEQ or the Council. Tr. at 713-14; 781 (Testimony of Mr. Barron: Brook would be “okay with any conditions that this council will find are necessary for the permit application.”).

¹¹ DEQ has required and used downhole cameras before. *See* Tr. at 607 (Testimony of Mr. Emme).

home and well within the zone for pre-blast surveys as an enforceable condition of the permit. *Id.* at 1055, 1524-25 (Testimony of Mr. Barron).

Proposed Permit Term: Brook will conduct a pre-blast survey for John Buyok and/or any member of his family if requested.

Proposed Permit Term to Implement the Proper County Road Buffer

Rationale: See section VII above.

Proposed Permit Term: No surface or underground mining shall occur within 100 feet of any public road. Should Brook obtain authorization to relocate a public road, the company shall incorporate that change as a permit amendment. Any request to relocate a road shall be subject to public comment and hearing pursuant to Ch. 12 § 1(a)(v)(D) of the Coal Rules and Regulations.

Proposed Permit Term for Replacement of Water Wells

Rationale: See section IV above.

Proposed Permit Term: Remove the word “adjudicated” from any description of water rights that will be replaced by Brook.

Proposed Condition of Approval to Defer Mining Until Baseline Water Quality Studies Are Complete & Findings Regarding Material Damage Are Made

Rationale: Baseline water quality sampling was deficient. While this means that the permit application should be denied, at the very least, mining should not be authorized until baseline samples are collected, analyzed, and reviewed by DEQ. DEQ itself agrees with this permit condition. Tr. at 363 (Testimony of Mr. Kristiansen); *Id.* at 411-12, 431 (Testimony of Mr. Kunze regarding monitoring on the Tongue and Goose Rivers).

Proposed Condition: Brook shall not commence coal mining operations until additional ground and surface water baseline water quality samples are collected, in a scientifically defensible manner, for the entire permit area.¹² Baseline samples must be taken for the overburden and alluvial aquifers, in addition to the coal seams. Samples must be collected seasonally for at least one year prior to mining. The inclusion of baseline water quality data shall be considered a major amendment to the permit and the new data will be subject to public notice and comment.

Brook shall also commit to continued monitoring at the baseline locations during operations and post-mining, until final bond release.

¹² If Brook wishes to amend its permit boundary to limit the scope of baseline monitoring or subsidence assessment, it can do so, but only as a major modification to its permit, subject to public notice and comment.

Proposed Condition of Approval to Defer Mining Until Alluvial Valley Floor Determinations Are Complete

Rationale: Mr. Kristiansen testified that DEQ is planning to include a permit condition that will “halt” mining should it be determined that an AVF would be “disturbed” by mining. Tr. at 116. However, given the vagueness of what that permit condition is, and the narrowness of equating “disturbance” to actual physical disturbance by mining (see discussion in Section III(B) above), a more carefully tailored permit condition is needed to comply with legal restrictions related to alluvial valley floor protection.

Proposed Condition: No coal operations can lawfully occur until DEQ finishes assessment and determination of all AVFs in lands adjacent to the permit.¹³ Specifically, no coal operations shall commence within ½ mile of the “potential” AVF identified in DEQ Exhibit 16 until a complete assessment of the delineation of the AVF is complete and until DEQ further reviews the mine permit application for potential impacts to the AVF from hydrologic connections between the mining area and the AVF.

Proposed Condition of Approval to Defer Mining Until Geotechnical Studies Are Complete to Demonstrate Subsidence Control and Prevention

Rationale: Dr. Marino’s testimony and exhibits discussed geotechnical studies and tests that must be complete in order to properly assess subsidence risk and to demonstrate subsidence control. *See, e.g.* Tr. at 1231-33.¹⁴

Proposed Condition: Brook shall not commence coal mining operations until it completes the geotechnical studies and tests identified by Dr. Marino in Ex. POW 94-D for the entire permit area. Brook will also at all times comply with the engineering design recommendations identified in Ex. POW 94-D. Brook must amend its permit application to include this information. Such an amendment will be considered a major modification to the permit and will be subject to public notice and comment (and public participation requirements of Sections 406(k) and (p)). A ground control plan submitted to MSHA shall not be sufficient to comply with this condition.

Proposed Permit Term that Requires Brook to Reclaim and Remediate All Subsidence Incidents in its Permit Area

Rationale: Given the overlap between historic abandoned mines and proposed mining by Brook, and given the ongoing subsidence problems caused by the abandoned mines in the area, testimony from Mr. Kristiansen showed that DEQ will have a difficult, if not “impossible” time, assigning liability to Brook if any subsidence occurs in the area, even if it is caused by the company. Tr. at 245, 320, 361-62 (Testimony of Mr. Kristiansen). If liability is not assigned, the AML Division will be responsible for all remediation. Brook

¹³ “Adjacent lands” is defined in the WEQA as “all lands within one-half mile of the proposed permit area.” W.S. § 35-11-103(e)(vii).

¹⁴ *See* note 15 *supra*.

has committed to remediate subsidence if it occurs, Tr. at 676, and the permit should be crafted to hold them to that commitment.¹⁵

Proposed Permit Terms: Brook shall conduct ongoing monitoring of subsidence activity within its permit boundary and DEQ shall include review of subsidence activity during regular inspections of the mine site. Brook will be responsible for all reclamation and remediation associated with any subsidence incidents that occur in areas that Brook is actively mining or has mined.

When subsidence-related damage to land, structures or facilities occurs, or when contamination, diminution, or interruption to a water supply occurs, DEQ will require Brook to obtain additional performance bond in the amount of the estimated cost of the repairs or in the amount of the estimated cost to replace the water supply, until the repair or replacement is completed.¹⁶ Before releasing the company's performance bond, DEQ must conduct a full assessment of subsidence risk and determine that subsidence is not likely to occur inside the area proposed for bond release. DEQ must consult with independent experts if the agency staff does not have the expertise to make that determination. Like the bond release proposal itself, DEQ's determination shall be subject to public notice and comment, and an affected party may object to DEQ's determination.

If subsidence causes damage to land or structures, DEQ must suspend mining under or adjacent to such land or structures until the subsidence control plan is modified to ensure prevention of further damage to such land or structures.

At all times Brook shall maintain at least a 500 foot horizontal and vertical buffer between previous mines and current mining operations.

Permit Term to Require a Public Comment Period on the Bond Amount Set by DEQ

Rationale: Testimony from Mr. Emme confirmed that DEQ normally has an initial bond amount available for public notice and comment as part of a permit application. However, in this case, the bond amount has yet to be set and DEQ did not have a draft bond amount available at the time of public notice and comment. This means that the bond amount will be unreviewable (by the public or in fact Brook itself), in violation of public participation opportunities.

¹⁵ This commitment is also required by federal SMCRA regulations, incorporated into the state program. 30 C.F.R. § 817.121 ("Repair of damage to surface lands. The permittee must correct any material damage resulting from subsidence caused to surface lands, to the extent technologically and economically feasible, by restoring the land to a condition capable of maintaining the value and reasonably foreseeable uses that it was capable of supporting before subsidence damage.")

¹⁶ The proposal for additional bond is consistent with federal requirements, incorporated into the state program. 30 C.F.R. § 817.121(c)(5).

Condition of Approval: Brook may not commence coal mining operations until such time as DEQ has made its proposed bond amount available for public inspection, notice, and a thirty (30) day comment period. Any interested member of the public may submit comments on or objections to the proposed bond amount within the 30 day comment period. Objections to the proposed bond amount shall be handled in accordance with Sections 406(k) and (p) of the Environmental Quality Act and corresponding DEQ public participation rules and regulations.¹⁷

Adoption of Permit Conditions and Terms Proposed by Big Horn Coal Company and the Fishers

Proposed Terms & Conditions: The Resource Council also adopts and hereby incorporates by reference any permit terms and conditions proposed by the other objecting parties, including but not limited to the terms and conditions proposed in Ex. BHC 5, to the extent that they do not conflict with the terms and conditions proposed above.

CONCLUSION & REQUESTED REMEDY

Given the deficiencies in the permit application described above, and the absence of specific regulatory findings necessary to issue a permit, the permit applicant has not met its burden to demonstrate that the application “is in compliance with this act and all applicable state laws” pursuant to Section 406(n).

As a result, the EQC must conclude that the permit application should be denied. The EQC should issue findings of fact and law and “a decision on the application” that orders the DEQ to deny the permit application within fifteen days of receipt of the EQC’s decision pursuant to Section 406(p).

Alternatively, the EQC could (1) make a finding that DEQ cannot issue the permit until all required findings under Section 406(n) are made, until the reclamation bond amount is calculated pursuant to Section 417 and the surface owner protection bond is calculated pursuant to Section 416, and until deficiencies in the permit application raised by the parties are addressed; (2) stay proceedings until DEQ makes its required findings; and (3) allow the parties’

¹⁷ In proposing this condition of approval, the Resource Council is not waiving its ability to exercise its rights and remedies to challenge DEQ’s bond calculation through W.S. § 35-11-1001.

time to respond and present additional evidence and testimony, as needed. Staying proceedings will afford DEQ time beyond the statutorily provided 15 days to finalize the CHIA and other needed documents and reviews and to respond to public comments and make any needed changes to the permit.

However, should the EQC decide to order the DEQ to approve the permit, it should be approved *only* with the permit terms and conditions listed above.

Respectfully submitted this 24th day of July, 2017.

/s/ Shannon Anderson
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CERTIFICATE OF SERVICE

I hereby certify that on July 24, 2017, I served a copy of the foregoing **PROPOSED FINDINGS OF FACT AND CONCLUSIONS OF LAW** on the following parties by electronic mail, and through the EQC's electronic filing system, which will send a notice of electronic filing to all counsel and parties of record.

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/s/Shannon Anderson
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From: Jeffrey S. Pope
To: [Jim Ruby](#); [Lynne Boomgaarden](#); [andrew kuhlmann](#); [Shannon Anderson](#); [Jay Gilbertz](#)
Subject: RE: Proposed Findings of facts, Conclusions of Law
Date: Monday, August 07, 2017 9:29:19 AM
Attachments: [Ramaco Permit Appeal - Findings of Fact and Conclusions of Law\[9984290v41 \(3\).DOCX](#)

Jim,

Brook Mine's proposed findings and conclusions are attached.

Thank you,

Jeff Pope

From: Jim Ruby [mailto:jim.ruby@wyo.gov]
Sent: Monday, August 7, 2017 9:07 AM
To: Jeffrey S. Pope <JSPope@hollandhart.com>; Lynne Boomgaarden <lboomgaarden@crowleyfleck.com>; andrew kuhlmann <andrew.kuhlmann@wyo.gov>; Shannon Anderson <sanderson@powderriverbasin.org>; Jay Gilbertz <JGilbertz@yonkeetoner.com>
Subject: Proposed Findings of facts, Conclusions of Law

Dear Counsel:

If possible would you please email me your proposed findings and conclusions in word format.

Thanks

Jim Ruby

E-Mail to and from me, in connection with the transaction of public business, is subject to the Wyoming Public Records Act and may be disclosed to third parties.

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ATTORNEYS FOR PERMIT APPLICANT
BROOK MINING COMPANY, LLC

**BEFORE THE ENVIRONMENTAL QUALITY COUNCIL
STATE OF WYOMING**

IN RE BROOK MINE APPLICATION)	
	)	Civil Action No. 17-4802
TFN 6 2-025)	

**BROOK MINING COMPANY, LLC’S FINDINGS OF FACT
AND CONCLUSIONS OF LAW**

I. INTRODUCTION

This case should decide a single question: did the Department of Environmental Quality (DEQ) correctly decide Brook Mine’s (Brook) permit application was complete and non-deficient? The Council has two methods for answering this question: 1) start from scratch and compare the application and law; or 2) rely on DEQ’s findings from its completeness and deficiency review (commonly known as a technical review) of Brook’s permit application. While both lead to the same result, the Council should rely on DEQ’s findings for four reasons.

First, DEQ is unbiased. It has nothing to gain should Brook’s permit application move forward. But the objectors have different motives. Big Horn Coal (BHC) wants money, offering not to oppose Brook’s application if Brook paid BHC approximately \$29 million. (Tr. Vol. IV, 876). Mary and David Fisher (Fishers) do not want a mine near them because it could affect their

property's value. (Tr. Vol. V, 1181-82). Powder River Basin Resource Council (PRBRC) does not want any mining near Sheridan. (*Id.*, 1123). As a result, the objectors did not objectively analyze Brook's permit application.

Second, DEQ has the most relevant experience and expertise for reviewing Brook's permit application. The DEQ personnel who reviewed Brook's permit application have reviewed dozens of permits, spent years working on the application, submitted hundreds of comments, and worked with Brook to ensure the permit application meets Wyoming law. (DEQ Ex. 34; Tr. Vol. I, 40-42, 45-46; Tr. Vol. II, 393-94; Tr. Vol. III, 461-62, 581). Dr. Muthu Kuchanur is a nationally recognized expert who worked as a consultant and who has designed, developed, applied, and evaluated groundwater models like those used in Brook's permit application. Doug Emme is also a nationally recognized expert on blasting who has been DEQ's blasting program principal for over 27 years. (Tr. Vol. III, 578-80). He also assisted in developing DEQ's bonding guideline. (*Id.*, 579). But PRBRC's experts, Dr. Marino and Mr. Wireman, have never attempted to draft a coal mine permit application in Wyoming. (Tr. Vol. VI 1254, 1263, 1403-05). Mr. Wireman does not hold a professional license in any state. Neither Mr. Wireman nor Dr. Marino are experts on the requirements for a permit application to be complete and non-deficient under Wyoming law. (*Id.*, 1254, 1258-60, 1403-05).

Third, DEQ applied the correct standard in reviewing Brook's permit application. DEQ applied the Environmental Quality Act, the corresponding regulations, and DEQ guidelines to determine Brook's application was complete and non-deficient. DEQ balanced the regulations and the necessary science. (Tr. Vol. VII, 1490). But objectors, nearby landowners, experts or otherwise, did not. They spent merely days, hours, or no time at all reviewing Brook's permit application. (Tr. Vol. IV, 887-88, Vol. V, 1077, 1098-1102, 1107-08, 1122-23, 1126; Vol. VI,

1428). For example, Ms. Collins did not look at the permit application until the beginning of the hearing in Sheridan. (Tr. Vol. V, 1077-78). This limited review often meant they did not consult statutes or regulations. For example, BHC did not review the statutory or regulatory requirements for a permit application. (Tr. Vol. IV, 885-89). Still, the objectors agreed that if a permit application complies with all Wyoming statutes and Wyoming regulations, the permit should issue. (*Id.*, 894, Vol. V, 1103).

Fourth, the objectors' expert testimony has fatal flaws. Dr. Marino assumed designs and extraction ratios using generalized diagrams that did not reflect Brook's actual design found in Brook's Mine Plan. (*See* DEQ Ex. 12-035; Tr. Vol. VI, 1274-77). He also did not take into account that Brook committed in its permit application to: 1) do site specific testing and engineering before starting to mine; and 2) submit a Mine Safety Health Administration (MSHA) ground control plan engineered to prevent short and long-term subsidence. (Tr. Vol. VI, 1265-69). Mr. Wireman did not evaluate all of the data in the permit application and did not evaluate external data available in the area. (*Id.*, 1404-06). He also doubted the data and statements in the permit application without studying whether his doubts were correct. (*Id.*, 1405-06). For example, he doubted Brook's groundwater model was accurate; but he did not run the model. (*Id.*, 1414-16). Mr. Gerlach's opinions relied on a 15 year-old groundwater restoration demonstration his company drafted for BHC. (Tr. Vol. IV, 972-73). That document, however, uses old data not designed to predict the future consequences of mining in the area. (Tr. Vol. VII, 1464-66).

The Council should also weigh DEQ's enforcement authority. Brook has committed to: 1) replacing water quantity and quality if its mine should affect domestic water wells; 2) do site specific studies and engineering to prevent subsidence; and 3) remediate subsidence if it occurs.

(DEQ Ex. 34-014-15; DEQ Ex. 5-017-18; Tr. Vol. III, 659-60, 673-76). These commitments directly address specific objections, and DEQ can enforce all of them because they are in the permit application. (Tr. Vol. II, 230, 349, 371-72).

Contrary to what the objectors suggest, this case does not require the Council to decide if Wyoming's permit application process should be more stringent, the public should have more input on the permitting process, or if DEQ should have held an informal conference. The case is also not about imposing conditions on Brook's permit application. The Council does not have any specific statutory authority to impose conditions on a permit application. Even if it did, many of the conditions the objectors have requested require Brook to access land the objectors own, which invites disputes about when Brook can access the property or how much it will cost to do so.¹ (Tr. Vol. IV, 879).

Therefore, Brook proposes the Council adopt the following findings of fact and conclusions of law.

II. FINDINGS OF FACT

A. Brook's Permit Application

1. On October 31, 2014, Brook submitted to DEQ's Land Quality Division (LQD) an application for a permit to mine coal. Brook's permit application proposed to mine coal in an area northwest of Sheridan, Wyoming. (DEQ Exs. 1-13, Tr. Vol. I, 51-52).

2. Brook's permit application consisted of 12 volumes filled with documents, maps, data, and other information to address applicable statutes, rules and regulations. (DEQ Exs. 1-13,

¹ If the Council imposes conditions that require Brook or even DEQ to access property Brook does not own, those conditions should apply only if the property owner grants access. Should the property owner refuse, then the Council should not require Brook or DEQ to follow those conditions. Although Brook has the use of the surface and surface access from the rights reserved in its 1954 Deed, the Council knows that many landowners ignore those rights.

Tr. Vol. I, 43-44, 52, 57-58). These volumes mirror the structure and documents in DEQ's completeness criteria. (Tr. Vol. VII, 1540). The completeness criteria lists "what is required for a permit application to mine coal in the state of Wyoming." (*Id.*, Brook Ex. 14). The document "cross-references all of the requirements to Wyoming, statutes, rules and regulations." (*Id.*).

3. Volumes I, IA, and II are the combined adjudication file in the permit application. (DEQ Exs. 1, 2, 3). The adjudication file contains information on the legal aspects of land and mineral ownership, water rights, rights of way, legal descriptions, and legal relationships. (*Id.*). The second volume of the adjudication file contains ownership maps, right-of-way maps, etc. Tr. Vol. I, 60-62, DEQ Exs. 1, 3. The adjudication file also contains an estimate of the surface damage bond for BHC's surface ownership. (Tr. Vol. I, 66, DEQ Ex. 1-066-101).

4. Appendix A of the adjudication file contains contact information and maps relating to surface and mineral rights holders within the proposed permit area, including coal. (Tr. Vol. I, 68, DEQ Ex. 1-232).

5. Appendix B of the adjudication file contains the names and addresses of surface and mineral rights owners adjacent to the permit boundary within one-half mile. (Tr. Vol. I, 69, DEQ Ex. 1-264).

6. Appendix C of the adjudication file contains the legal description of lands contained within the permit application area, including survey plats and maps. (Tr. Vol. I, 70, DEQ Ex. 1-447).

7. Appendix E of the adjudication file contains lands mining will affect, areas of previous disturbance by surface and underground mining, roads, utility lines, pipelines, rights of way, easements, names and last known addresses of present surface owners, and the legal

description of locations of buildings within and adjacent to the permit area. (Tr. Vol. I, 72, DEQ Ex. 1-540).

8. The adjudication volumes also contain landowner consent forms and this Council's order in lieu of consent issued on November 17, 2016. (DEQ Ex. 2).

9. Volume III contains appendices D1 through D4. (DEQ Ex. 4).

10. Appendix D1 is titled "Land use." (DEQ Ex. 4). The appendix explains the general use of the land within the permit application boundary from past to present, which includes grazing land, developed water resources, industrial, commercial, recreational, and residential. (Tr. Vol. I, 82-83, DEQ Ex. 4-008-11). The appendix also explains the areas any agency has designated as unsuitable for mining and whether previous mines exist within the area. (DEQ Ex. 4-016). The appendix also has tables, figures, and exhibits that supplement the text and provide more information. (*Id.*, 4-020-41).

11. DEQ reviewed Appendix D1 and found it complied with the applicable statutes and regulations. (Tr. Vol. I, 52, 60, Tr. Vol II, 196-97, 411).

12. Appendix D2, is titled "History." (DEQ Ex. 4). This appendix discusses the history of mining in the Brook Mine area, sites on the National Register of Historic Places, and the area around the proposed Brook mine. (*Id.*, 4-046-56). The appendix also has tables, figures, and exhibits that supplement the text and provide more information. (*Id.*, 4-059-64).

13. DEQ reviewed Appendix D2 and found it complied with the applicable statutes and regulations. (Tr. Vol. I, 52, 60, Tr. Vol II, 196-97, 411).

14. Appendix D3 is titled "Archeological and Paleontological Resources." (DEQ Ex. 4). This appendix contains little information because cultural and paleontological surveys "are not required when there's private surface and private mineral owners." (Tr. Vol. I, 85). The

appendix also contains a 2012 letter from DEQ stating the same. (DEQ Ex. 4-074-75). DEQ, however, did coordinate with the State's Historic Preservation Office, who had no comments. (Tr. Vol. I, 85-86).

15. In addition to this appendix, Brook's Mine Plan, found in a different volume, states Brook will stop mining in any areas where cultural or paleontological resources are discovered. (*Id.*, 86).

16. DEQ reviewed Appendix D3 and found it complied with the applicable statutes and regulations. (*Id.*, 85-86).

17. Appendix D4 is titled "Climatology." This appendix discusses the regional climatology around the proposed Brook Mine. (DEQ Ex. 4). This includes information on temperature, wind patterns, precipitation, evaporation, relative humidity, cooling, heating, and growing degree days. (*Id.*, 4-080-88).

18. The appendix also has tables, figures, and exhibits that supplement the text and provide more information. (DEQ Ex. 4-091-112). The additional information includes data about meteorological stations, regional annual and monthly temperature statistics, average monthly wind speeds, regional and annual precipitation. (*Id.*).

19. DEQ reviewed Appendix D4 and found it complied with the applicable statutes and regulations. (Tr. Vol. I, 52, 60, Tr. Vol II, 196-97, 411).

20. Volume IV of Brook's permit application contains Appendix D5, titled "Topography, Geology and Overburden Assessment." (DEQ Ex. 5). This appendix discusses topography, slope assessment, regional geology, geology of the mining area, and overburden assessment. (*Id.*, 5-006-23). The accompanying tables, figures, exhibits, and addenda provide data and information on coal quality, criteria to establish overburden suitability, geologic

structures, pre-mine slope analysis, surficial geology, lithologic and geophysical logs, geologic cross-sections, structure and isopach maps, overburden sample analysis. (*Id.*, 5-026-295).

21. In preparing this appendix, DEQ and Brook collaborated on the location of drill holes for assessing geology. (Tr. Vol. I, 92-93). Brook was unable to sample certain areas because of terrain, but the existing samples “were close enough together that [DEQ] could extrapolate...into that area for now.” (*Id.*, 93).

22. DEQ reviewed Appendix D5 and found it complied with the applicable statutes and regulations. (Tr. Vol. I, 92-93).

23. Volume V of Brook’s permit application contains Appendix D6 titled “Hydrology.” (DEQ Ex. 6). This appendix describes surface water, flood studies, surface water monitoring, surface water quality and quantity, groundwater, regional hydrogeology, baseline monitoring, groundwater testing, groundwater rights, and Brook’s groundwater model. (*Id.*, 6-005-34). The appendix also has tables, figures, exhibits, and addenda that provide additional data and information. (*Id.*, 6-037-553). This includes Brook’s groundwater model and input data for the model. (DEQ Ex. 12-183-265, Tr. Vol. III, 460-63). The data and information in this appendix showed the groundwater aquifers within about 85% of Brook’s proposed permit area is dry. (Tr. Vol. I, 95-96). The groundwater model also showed that any groundwater Brook affects would recharge within years of Brook ending its operations. (Tr. Vol. VII, 1496).

24. DEQ reviewed Appendix D6 and found it complied with the applicable statutes and regulations. (Tr. Vol. III, 496).

25. Volume VI of Brook’s permit application contains Appendix D7 titled “Soil Resources Assessment.” (DEQ Ex. 7). This appendix describes the methodology that Brook used to sample soils within the proposed permit area. (*Id.*, 7-007-14). It also describes the results of

the soil sampling, which includes soil information, soil suitability, salvage depth, and maps with soil unit descriptions. (*Id.*, 7-014-42). The appendix also includes tables, figures, exhibits, and addenda that provide additional information and data, including Brook's sampling protocol and laboratory results. (*Id.*, 7-043-114).

26. DEQ reviewed Appendix D7 and found it complied with the applicable statutes and regulations. (Tr. Vol. I, 52, 60, Tr. Vol II, 196-97, 411).

27. Volume VII of Brook's permit application contains Appendix D8 titled "Vegetation Inventory." (DEQ Ex. 8). This appendix describes the methodology that Brook used to survey vegetation within the proposed permit area. (*Id.*, 8-005-11). It also describes the results of the survey. (*Id.*, 8-11). The appendix includes tables, exhibits, and addenda with additional information and data. (*Id.*, 8-12-452).

28. DEQ reviewed Appendix D8 and found it complied with the applicable statutes and regulations. (Tr. Vol. I, 52, 60, Tr. Vol II, 196-97, 411).

29. Volume VIII of Brook's permit application contains Appendix D9 titled "Wildlife." (DEQ Ex. 9). This appendix describes Brook's wildlife studies, methods, and results. (*Id.*, 9-005-10). It also includes tables, exhibits, and addenda that describe baseline wildlife inventories and species lists. (*Id.*, 9-011-139).

30. DEQ reviewed Appendix D9 and found it complied with the applicable statutes and regulations. (Tr. Vol. I, 52, 60, Tr. Vol II, 196-97).

31. Volume IX of Brook's permit application contains Appendix D10 titled "Wetlands." (DEQ Ex. 10). This appendix describes the methodology that Brook used to inventory wetlands within the proposed permit boundary and subsequent results. (*Id.*, 10-005-9).

The appendix also has tables, exhibits, and addenda that provide additional information and baseline data. (*Id.*, 10-010-279).

32. DEQ reviewed this appendix and found it complied with the applicable statutes and regulations. (Tr. Vol. I, 52, 60, Tr. Vol II, 196-97).

33. Volume X of Brook's permit application contains Appendix D11 titled "Alluvial Valley Floors." (DEQ Ex. 11). This appendix describes Brook's analysis of potential alluvial valley floors within the proposed permit boundary. (*Id.*, 11-006-12). The appendix explains stream laid deposits, water quantity, sub-irrigation, natural and artificial flood irrigation, water quality, and then determines the potential alluvial valley floors. (*Id.*, 11-012-18). The appendix also has tables, figures, exhibits, and addenda that provide additional information and data, including geologic cross-sections, potential and declared alluvial valley floors, isopach maps, prior state decision documents, and monitor well logs. (*Id.*, 11-024-313).

34. Based on the findings in Brook's permit application, DEQ conducted their assessment of potential alluvial valley floors in the area in and around where Brook proposes to mine. (Tr. Vol. I, 108-10). DEQ's assessment led it to designate one alluvial valley floor near the proposed Brook mine. (*Id.*, 109-10). But the proposed Brook mine will not disturb or mine through any designated alluvial valley floor. (*Id.*, 112-13). Even so, Brook's permit application states that Brook will halt mining should it enter a possible alluvial valley floor and allow DEQ to determine if an alluvial valley floor exists. (*Id.*, 116). Brook will also place monitor wells in areas designated as potential alluvial valley floors. (Tr. Vol. VII, 1489).

35. DEQ reviewed Appendix D11 and found it complied with the applicable statutes and regulations. (Tr. Vol. II, 156).

36. Volume XI of Brook's permit application contains Brook's Mine Plan. (DEQ Ex. 12). Brook's Mine Plan also contains a general description of mining operations (MP.1); mine facilities (MP.2); tonnage (MP.2.2, MP.6.1); roads, railroads and other transportation systems (MP.3); mining methods, schedules, and assessments (MP.4); mining hydrology (MP.5); probable hydrologic impacts (MP.6); operational monitoring program (MP.7); water use (MP.8); reclamation of exploration holes and wells (MP.9); refuse disposal (MP.10); signs, markers and buffer zones (MP.12); blasting plan and schedule (MP.14); surface mining activities near underground mines (MP.15); protection of other resources, structures and surfaces (MP.16); existing structures facilities operations (MP.17); plan to minimize adverse impacts on fish and wildlife (MP.18); protection of historical and archaeological resources (MP.19); underground mining (MP.20); auger mining (MP.21); dual permitted areas (MP.22); plan in cases of temporary cessation of operations (MP.23); protection of public safety, human or animal life, property, and the surface owner's ongoing operation (MP.24); alluvial valley floors (MP.25); separation and replacement of soils for prime farmlands (MP.26); request for variance from environmental performance standards (MP.27); and references (MP.28). (DEQ Ex. 12-001-372).

37. Brook's Mine Plan describes the proposed highwall mining method. (DEQ Ex. 12-016-18). The highwall mining process begins with a trench, a pit, or a box cut to expose the coal seam. (Tr. Vol. III, 654, Tr. Vol. I, 51-52, DEQ Ex. 12-121). The operator then uses a machine to extract coal in panels ranging between 1,500 and 2,000 feet in length. (Tr. Vol. III, 654-55, 665-66). Each panel has pillars that will minimize the potential for subsidence during mining. (Tr. Vol. I, 51, DEQ Ex. 12-121. Tr. Vol. I, 51.) During mining, the native topography and vegetation remain except for the excavated trench. (Tr. Vol. III, 655). In total, a trench will last only three years before getting reclaimed. (Tr. Vol. II, 397).

38. The Mine Plan contains a fire control and prevention plan for surface and subsurface operations. (Tr. Vol. II, 159, DEQ Ex. 12-314). The fire control and prevention plan establishes a mitigation system in the event of any type of fire during mining or other operations. (Tr. Vol. II, 159-60, DEQ Ex. 12-314). MSHA will regulate the ground control program for fires or other safety related items at the mine. (Tr. Vol. II, 160).

39. Brook's Mine Plan also addresses subsidence in three ways. First, addenda MP-6 contains Brook's subsidence control plan that analyzes potential subsidence at the mine. (Tr. Vol. II, 162, DEQ Ex. 12-319). The subsidence control plan discusses previous mining activity, Brook's plan to monitor and assess subsidence, and Brook's plan to control and remediate any subsidence that occurs. (DEQ Ex. 12-320-27). Cardno MMA prepared the subsidence control plan because it had "done a lot of work for highwall miner operations in the East" and knew people "that manufacture and operate the highwall miner systems very well." (Tr. Vol. II, 163; Tr. Vol. III 666; Tr. Vol. IV, 817).

40. In addition to the subsidence control plan, Brook has committed to developing the required MSHA ground control plan before it begins mining. (Tr. Vol. III, 662-65). The ground control plan will sample, test, design, and engineer each mine panel so that it meets MSHA's safety factor and creates both short and long-term subsidence protection. (Brook Ex. 10(d); Tr. Vol. II, 325-26; Tr. Vol. III, 662-63).

41. Brook's permit application states "[s]amples will be collected and strength testing will be conducted on those samples in order to satisfy the requirements of the MSHA ground control plan, which must be approved prior to mining. The future testing results and analysis in preparation of the MSHA ground control plan will be provided to WDEQ/LQD." (DEQ Ex. 5-018). The permit application also states that "[t]he results of the tensile strength tests will be

utilized to size both the web pillars and barrier pillars to achieve a factor of safety as set by the MSHA ground control plan to conduct mining and minimize the risk of subsidence.” (*Id.*)

42. Should subsidence occur, “mining operations have to cease immediately.” (Tr. Vol. II, 320). Brook then has to mitigate and repair any subsidence. (DEQ Ex. 12-318-33; Tr. Vol. II, 354-55).

43. Brook’s Mine Plan describes Brook’s blasting plan. (DEQ Ex. 12-335-38). The blasting plan describes Brook’s proposed blasting operations, explosive storage, and applicable laws and regulations. (DEQ 12-334-38). As part of its blasting plan, Brook does not intend to carry out any cast blasting or any blasting in its first year of operation. (Tr. Vol. III, 583, 589).

44. Brook’s Mine Plan discusses how Brook will control surface water. Brook’s plan will use reservoirs, diversions, ditches, and alternative sediment control measures to control surface water. (DEQ Ex. 12-055-59, 61). Brook will also monitor surface water sources. (DEQ Ex. 12-062-64).

45. Brook’s Mine Plan discusses groundwater, including domestic water wells. Brook has committed to replacing the quantity and quality of water sources lost because of Brook’s proposed operations. (DEQ Ex. 12-059-61). Brook will also conduct groundwater monitoring. (DEQ Ex. 12-064-65).

46. DEQ found the Mine Plan complied with the applicable statutes and regulations. (Tr. Vol. I, 45-46; Tr. Vol. II, 161-62).

47. Volume XII of Brook’s permit application contains Brook’s Reclamation Plan. (DEQ Ex. 13). The Reclamation Plan explains how reclamation will occur at the Brook Mine and how Brook will mitigate any modifications to overburden material, vegetation, and wildlife.

Id., Tr. Vol. II, 175. When mining is complete and reclamation has finished, the Reclamation Plan states Brook will return the land use to at least equal or better than the original use. *Id.*

48. The Reclamation Plan describes: post-mining land use (RP.2); contouring plan for affected lands (RP.3); spoil replacement (RP.4); topsoil replacement (RP.5); revegetation practices (RP.6); wildlife restoration (RP.7); final hydrologic restoration (RP.8); wetland mitigation (RP.9); reestablishment of essential hydrologic functions and agricultural utility on alluvial valley floors (RP.10); reclamation of mine facilities, road, and railroads (RP.11); reclamation and bonding of dual permitted and license to mine areas (RP.12); reclamation schedule (RP.13); bond release (RP.14); underground mines (RP.15); reclamation costs (RP.16); and references (RP.17). (DEQ Ex. 13-014-30; Tr. Vol. II, 192-95). In dually permitted areas, Brook must reclaim any areas it disturbs even if that disturbance occurs within a dually permitted area. (DEQ Ex. 13-075; Tr. Vol. II, 184, 188-89).

49. DEQ found the Reclamation Plan complied with the applicable statutes and regulations. (Tr. Vol. I, 45-46).

50. With its permit application, Brook submitted an estimated reclamation bond in the approximate amount of \$370,000 to cover 30.8 acres of disturbance in year 0. (Tr. Vol. III, 590, DEQ Ex. 32). For the areas where Brook's operations will overlap with existing permits, like BHC, Brook's bond will cover all disturbance from Brook's operations. (Tr. Vol. II, 188-90)

B. DEQ's review of Brook's permit application

51. Once Brook submitted its permit application, DEQ conducted two stages of review set out in the Environmental Quality Act. First, DEQ conducted a completeness review. (Tr. Vol. I, 43-44). For this step, DEQ reviewed Brook's permit application to determine whether it is complete based on requirements set forth in the rules, regulations, and statutes. (*Id.*, 43).

52. After DEQ determined Brook's permit application was complete, DEQ notified Brook that the application was complete and DEQ had gone into the technical review process. By statute, the technical review process can take up to 150 days. (*Id.*, 56).

53. The technical review process analyzed "the entire document from front to back cover" and determined "how technically accurate [the application] can possibly be." (*Id.*, 44). "Technically accurate" or "technically adequate" means the permit application "has met all the statutes, rules, regulations, and providing [sic] all the information that [DEQ] needs to make assessment." (Tr. Vol. VII, 1504, 45-46, Tr. Vol. I, 59-60).

54. As a result, the technical review compared Brook's permit application to Wyoming statutes, DEQ regulations, and DEQ guidelines. (Tr. Vol. I, 56-58).

55. For its technical review, DEQ enlisted eleven in-house experts and four external experts, including Wyoming Game & Fish, US Game & Fish, US Army Corps of Engineers, and State Historic Preservation Office, to review the substance of Brook's permit application. (*Id.*, 47, 64, 85-86, 104). DEQ also applied standard mining and engineering principles, used modeling software to review the geology and hydrology aspects of the permit application, and relied on sources of data outside the permit application to verify Brook's findings. (*Id.*, 56-57; Tr. Vol. II 395-96, 410).

56. When reviewing subsidence information in the permit application, DEQ worked through computer models and utilized formulas developed by the Office of Surface Mining. DEQ also attended training on analyzing subsidence and requested more information on the model used in the subsidence control plan. (Tr. Vol. II, 164, 168). DEQ concluded the Brook mine would not subside. (*Id.*, 162, 169).

57. During the technical review process, DEQ sent comments to Brook informing it of deficiencies in the permit application. (Tr. Vol. I, 44-45). Brook then responded to DEQ's comments with additional information; Brook also modified its application when necessary. (*Id.*, 58-60). DEQ and Brook went through six rounds of comments and responses on Brook's permit application. (*Id.*, 58; DEQ Ex. 34).

58. Brook's responses and revisions to the permit application ultimately satisfied DEQ, leading it to determine Brook's application was "technically accurate" and suitable for publication. (*Id.*, 59-60, 161-62, 188).

59. After DEQ deemed Brook's application complete and without deficiency, it directed Brook to publish its permit application for public review and comment. In making this decision, DEQ had not yet issued a cumulative hydrologic impact assessment or the findings set out in Wyo. Stat. Ann. § 35-11-406(n).

60. Brook first published its permit application on December 27, 2016. (Tr. Vol. I, 53).

61. Between December 27, 2016 and January 27, 2017, DEQ received twenty public comments relating to Brook's permit application. Of those twenty comments, fourteen were objections to Brook's permit application.

62. Those objections challenged many parts of Brook's permit application, including Brook's analysis of alluvial valley floors, blasting, bonding, probable hydrologic consequences, reclamation, and subsidence. (BHC Ex. 3, Fisher Ex. 26, PRBRC Exs. 1, 2, 5, 9, 10)

63. Upon review of all objections, DEQ still found Brook's permit application met the applicable statutes and regulations. (Tr. Vol. II, 196-97). DEQ, however, will add two conditions to Brook's permit. First, DEQ will require Brook to remove the word adjudicated on

pages MP-38 (DEQ Ex. 12-052) and MP-48 (DEQ Ex. 12-052) of its Mine Plan and replace with “permitted.” (Tr. Vol. II, 290-91). Second, DEQ will adjust the location of surface monitoring stations to better capture data. (*Id.*, 430-31).

C. The Council’s Involvement

64. The objectors requested that DEQ hold an informal conference to decide their objections. (BHC Ex. 3, Fisher Ex. 26, PRBRC Ex. 1). But the DEQ director exercised his discretion not to hold an informal conference and referred the matter to the Council. (February 22, 2017 Order of Dismissal, Docket 17-4801).

65. The Council originally scheduled a hearing on these objections for February 13, 2017 (Docket No. 17-4801). The Council also requested the parties brief whether the Council had jurisdiction to hear that case because no one had requested a contested case. After briefing, the Council dismissed that docket, ruling:

[u]nder Wyo. Stat. 35-11-406(k) and (p) and the Department of Environmental Quality’s rules of practice and procedure, the Council may only exercise jurisdiction over the Brook Mine permit application after an interested person has filed a petition for a contested case with the Council – something not done as part of this docket. Council, in this docket, is without authority to accept jurisdiction over the Brook Mine permit application through the referral from the Director.

(February 22, 2017 Order of Dismissal).

66. After this ruling, three of the objectors requested a contested case hearing: PRBRC (Docket No. 17-4804), BHC (Docket No. 17-4802), and Fishers (Docket No. 17-4803). The Council consolidated all dockets into Docket No. 17-4802.

67. Before the consolidated hearing, the Council set deadlines for discovery requests, naming of expert witnesses, and dispositive motions. (March 13, 2017 Order of Consolidation

and Schedule). The Council also set pre-hearing exhibit and witness disclosure dates and a hearing schedule and order. (*Id.*)

68. The Council conducted the first part of the hearing on May 22-26, 2017 in Sheridan, Wyoming. Unable to get all of the evidence in, the Council extended the hearing for two additional days on June 7-8, 2017 in Cheyenne, Wyoming (May 31, 2017 Order for Hearing). After those two days, the parties rested.

III. CONCLUSIONS OF LAW (DECISION ON THE APPLICATION)

A. The Scope of the Council's Decision

1. The Wyoming Environmental Quality Act (the Act) created the Council and specifies its authority. *Amoco Prod. Co. v. State Bd. of Equalization*, 12 P.3d 668, 673 (Wyo. 2000). So the Council must exercise only the authority the Act granted to it. *Id.*; *Platte Dev. Co. v. State, Env'tl. Quality Council*, 966 P.2d 972, 975 (Wyo. 1998).

2. Under the Act, DEQ must evaluate a permit application and decide if it is complete. Wyo. Stat. Ann. § 35-11-406(e). Wyoming statutes define a complete application as “the application contains all the essential and necessary elements and is acceptable for further review for substance and compliance with the provisions of this chapter. Wyo. Stat. Ann. § 35-11-103(e)(xxii).

3. After informing a permit applicant that the application is complete, “the administrator shall review the application and unless the applicant requests a delay advise the applicant in writing within one hundred fifty (150) days from the date of determining the application is complete, that it is suitable for publication under subsection (j) of this section, that the application is deficient or that the application is denied. All reasons for deficiency or denial shall be stated in writing to the applicant.” Wyo. Stat. Ann. § 35-11-406(h). The Act defines a

deficiency as “an omission or lack of sufficient information serious enough to preclude correction or compliance by stipulation in the approved permit to be issued by the director.” *Id.* at 103(e)(xxiv).

4. Once an applicant publishes the permit application, an interested person can file an objection and receive either an informal conference with the DEQ director or a public hearing if the director elects not to have an informal conference. Wyo. Stat. Ann. § 35-11-406(k).

5. In a public hearing, the Council acts as the hearing examiner and decides “all cases or issues arising under the laws, rules, regulations, standards or orders issued or administered by the department or its air quality, land quality, solid and hazardous waste management or water quality divisions.” Wyo. Stat. Ann. § 35-11-112(a). The Council has the specific authority to conduct hearings: 1) to promulgate rules and regulations required to administer the Act; 2) adopt, amend, or repeal rules or regulations as recommended by advisory boards; 3) contesting “the administration or enforcement of any law, rule, regulation, standard or order issued or administered by the department or any division thereof;” or 4) contesting the “grant, denial, suspension, revocation or renewal of any permit, license, certification or variance authorized or required by this act.” Wyo. Stat. Ann. § 35-11-112(a)(i)-(iv).

6. The Council concludes it must exercise the authority listed under (a)(iii) because the case will decide DEQ’s administration and enforcement of the permitting procedures for a new coal mine, not rulemaking or an already granted or denied permit.

7. The Council finds that exercising this authority requires the Council to decide if DEQ correctly administered and enforced the requirements that a permit application is complete and non-deficient.

8. The Council notes that before a permit can issue, the Act requires that the administrator make specific findings under Wyo. Stat. Ann. § 35-11-406(n). These findings include the cumulative hydrologic impact assessment DEQ must perform. (Tr. Vol. II, 413-16).

9. Despite requests from the objectors, the Council concludes that it does not have the authority to make the findings under Section 406(n) for three reasons. First, section 406(n) explicitly states “the administrator” makes the findings in that section of the Act. Wyo. Stat. Ann. § 35-11-406(n). The Act defines “administrator” as “the administrator of each division of the department.” Wyo. Stat. Ann. § 35-11-103(a)(v). That definition does not include this Council. Second, the findings under 406(n) require DEQ, as the regulating agency, to issue a cumulative hydrologic impact assessment. *Id.* at § 406(n)(iii); WY ADC ENV LQC Ch. 19 § 2 (stating the cumulative hydrologic impact assessment “shall be sufficient to make the determination of W.S. § 35-11-406(n)(iii).”) That assessment takes “an intensive look at surface and groundwater quality and quantity within an area,” possibly including other nearby mines. (Tr. Vol. II, 413-15). The assessment can use data from multiple permits or permit applications and outside data sources. (*Id.*, 415). The Council concludes it does not possess the resources or expertise to make those findings. Third, DEQ has not yet issued findings under 406(n), and the Act does not require DEQ to issue the section 406(n) findings before it deems an application suitable for publication. *See generally* Wyo. Stat. Ann. § 35-11-406. As a result, DEQ has not administered or enforced that part of the Act. Without DEQ either administering or enforcing section 406(n), the Act does not grant the Council authority to step into the shoes of the regulator. *See* Wyo. Stat. Ann. § 35-11-112(a)(i)-(iv).

10. As a result, the Council must issue findings of fact and a decision on the relevant issues as described above within 60 days of the final hearing. *Id.* at 406(p).

B. The Amount of Votes Required

11. Under the Act, all matters that the Council hears “shall be decided by a majority vote of those on the Council.” Wyo. Stat. Ann. § 35-11-111(d).

12. Members of the Council, however, may recuse themselves by providing written notice of recusal or entering a verbal notice into the record. Wyo. Admin. Code Practice & Procedure Ch. 2 § 7(b). If a councilmember recuses him or herself, then that councilmember “shall not participate in the contested case.” *Id.*

13. The Council finds that a recusal from a case means the recused council member no longer serves on the Council for the purposes of that contested case.

14. Here, two members of the council, Richard Fairservis and Megan Degenfelder, have recused themselves. For purposes of this contested case neither Mr. Fairservis nor Ms. Degenfelder serve on the Council.

15. Therefore, the Council finds that Brook must obtain a majority of the five councilmembers serving on this case. *See* Wyo. Stat. Ann. § 35-11-111(d).

C. The Applicable Statutes and Regulations

16. Under the Act, Brook bears the burden of proving that its application is complete and non-deficient. To meet this standard, Brook must prove its application complies with the applicable statutes and regulations.

17. The applicable statutes are Wyo. Stat. Ann. § 35-11-406(a)-(b), (e)-(h).

18. Section 406(a) requires the permit applicant to provide information about the operator, surface owners, maps of the proposed permit area, and basic information about the proposed mining operation. Section 406(b) requires the applicant provide a Mine Plan and Reclamation Plan that explains in detail how the operator will disturb and restore the area within

the proposed permit area. The section also requires the applicant provide surface owner consent or an order in lieu of surface owner consent to the Mine Plan and Reclamation Plan.

19. Sections 406(e)-(h) require Brook's permit application be complete and non-deficient as described above.

20. The Land Quality Division (LQD) has also promulgated coal regulations that implement the Act. Brook must comply with those regulations as described below.

21. Chapter 2 of LQD's coal regulations requires Brook provide detailed information that complies with all applicable statutes and regulations. WY Admin Code ENV LQC Ch. 2, § 1. Brook must provide information on surface ownership, mineral ownership, previous mining history, and taxpayer information. *Id.* at § 2. Brook's application must also contain information on vegetation baseline information and methodology, wildlife studies, land use history, groundwater sampling data, geology and lithology data, soil assessments, water quality and quantity data, climatology, cultural resource assessments. *Id.* at §§ 3-4. Sections 5 and 6 expand the details Brook must include in its Mine and Reclamation Plans. *Id.* at §§ 5-6.

22. Chapter 3, § 2 requires Brook provide sufficient information relating to the presence or absence of alluvial valley floors within the permit area and on adjacent areas where an alluvial valley floor containing areas of sub-irrigation or flood irrigation agricultural activities may be affected. *Id.* at Ch. 3, § 2(b). Brook must include maps, geologic data, soils and vegetation data, geohydrologic descriptions, and information to identify geologic, hydrologic and biologic characteristics. *Id.* at § 2(c) Brook must also provide a monitoring plan to meet requirements of Chapter 5, § 3(b). *Id.*

23. Chapter 4, § 2 requires Brook to reclaim the land to a condition equal to or greater than its prior condition. *Id.* at Ch. 4, § 2(a). Brook must submit a proposed schedule for

backfilling and grading with supporting analysis and return all affected lands to their approximate original contour. *Id.* at § 2(b)-(c).

24. Chapter 5, §§ 3, 6 require Brook's operations to preserve and reestablish the geologic, hydrologic, and biologic characteristics to support essential hydrologic functions. *Id.* at Ch. 5, § 3(a), (c). Brook must install an environmental monitoring system to provide sufficient information showing essential hydrologic functions of the alluvial valley floor are being preserved and established on and outside affected lands. *Id.* at § 3(b). Brook must minimize disturbance of the prevailing hydrologic balance, unwarranted subsidence, submit a subsidence control plan, and prepare a written demonstration showing the fill has a minimum static safety factor of 1.3. *Id.* at § 6(d)-(e).

25. Chapter 6 requires Brook to comply with all applicable federal, state, and local laws when using explosives to mine. *Id.* at Ch. 6, § 1. Brook must publish a blasting schedule in a newspaper of general circulation and by mail to each residence or owner within one-half mile of blasting sites at least 30 days before blasting. *Id.* at § 3. The schedule shall be republished and redistributed every 12 months. *Id.* If the schedule changes, Brook must revise and republish the schedule at least 30 days but not more than 60 days before blasting. *Id.* Residents and owners within one-half mile shall be notified of the manner for requesting a pre-blast survey. *Id.*

26. Chapter 7, §§ 1, 2 requires Brook's application contain information relating to soils, vegetation, fish, wildlife, topography, geology, mineral deposits limited to the affected areas, subsidence control plan, and Reclamation Plan. Section 2 requires Brook adhere to the backfilling, grading and contouring requirements in Chapter 4, § 2(b). *Id.* at §§ 1, 2.

27. Chapter 12, § 1 requires the Administrator to make a determination in writing as to the existence and extent of an alluvial valley floor within the permit area or on adjacent areas

where the mining operation may affect surface water or groundwater that supply an alluvial valley floor. *Id.* at §1(a).

28. Chapter 19, § 2 requires Brook to provide information sufficient to enable the Administrator to determine the probable cumulative hydrologic impacts on surface and groundwater systems. *Id.* at § 2(a).

D. The Council's Decision on Brook's Application

29. Applying the findings of fact to this law, the Council concludes Brook's permit application is complete as defined in the Act. *See* Wyo. Stat. Ann. §§ 35-11-103(e)(xxii), 406(e)-(f). The application includes all of the sections, information, data, and maps the Act and applicable regulations require. The Council is also convinced by DEQ's comprehensive testimony that Brook's permit application is complete. (Tr. Vol. 1, 52, 112, Tr. Vol. II, 257, 318, 344-45, Tr. Vol. VII, 1509).

30. The Council concludes Brook's application is also not deficient because it meets the requirements of all applicable statutes and regulations. *See* Wyo. Stat. Ann. §§ 35-11-103(e)(xxiv), 406(h). Brook did all of the required studies and time to develop a non-deficient application. Likewise, the Council accepts DEQ's testimony that its technical review of Brook's application met the applicable statutes and regulations. (Tr. Vol. I, 43-46, Tr. Vol. II, 188, 316-17, Tr. Vol. III, 521).

31. Specifically, the Council finds the adjudication file in Volumes I, IA, and II contain the information required by applicable law. *See* Wyo. Stat. Ann. §§ 35-11-406(a)-(b); WY Admin Code ENV LQC Ch. 2, §§ 1-2.

32. Appendix D1, Land Use, in Volume III meets the requirements of applicable law. *See* Wyo. Stat. Ann. §§ 35-11-406(a); WY Admin Code ENV LQC Ch. 2, §§ 2-3.

33. Appendix D2, History, in Volume III meets the requirements of applicable law. *See Wyo. Stat. Ann. §§ 35-11-406(a); WY Admin Code ENV LQC Ch. 2, §§ 1-2.*

34. Appendix D3, Archeological and Paleontological Resource, in Volume III meets the requirements of applicable law. *See Wyo. Stat. Ann. §§ 35-11-406(a); WY Admin Code ENV LQC Ch. 2, §§ 3-4.*

35. Appendix D4, Climatology, in Volume III meets the requirements of applicable law. *See Wyo. Stat. Ann. §§ 35-11-406(a); WY Admin Code ENV LQC Ch. 2, § 4.*

36. Appendix D5, Topography, Geology and Overburden Assessment, in Volume IV meets the requirements of applicable law. *See Wyo. Stat. Ann. §§ 35-11-406(a); WY Admin Code ENV LQC Ch. 2, § 4.*

37. As for the objections related to this section of Brook's permit application, the Council adopts DEQ's findings. The Council notes DEQ found no geologic hazards exist at the proposed Brook mine (Tr. Vol. I, 89-90). But if they do, DEQ has a methodology for addressing geologic hazards. (*Id.*, 90-91).

38. Appendix D6, Hydrology, in Volume V meets the requirements of applicable law. *See Wyo. Stat. Ann. §§ 35-11-406(a)-(b); WY Admin Code ENV LQC Ch. 2, § 4.*

39. As for the objections related to this section of Brook's permit application, the Council is persuaded by the testimony of Dr. Muthu Kuchanur. Dr. Kuchanur has a PhD in environmental engineering and teaches national level training courses on groundwater modeling, coal mine permitting hydrology, quantitative hydrogeology, and applied engineering principles for the Office of Surface Mining. (Tr. Vol. III, 459-60). Dr. Kuchanur reviewed Brook's modeling process, the methodology used for the model, the input data used in the model, and the accuracy of the model. (*Id.*, 462-64). Dr. Kuchanur's review concluded that Brook's model

matched available data and multiple lines of evidence supported the accuracy of the model. (*Id.*, 480-83). Dr. Kuchanur also compared the predicted effect of Brook's mining on groundwater and found that it is small compared to existing groundwater sources. (*Id.*, 489-90). He noted that the groundwater model accounted for dewatering coal seams and the effect that could have on surrounding areas. (*Id.*, 561-62).

40. As a result, the Council concludes that Brook's groundwater model and the other hydrology aspects of the permit complied with the relevant statutes and regulations. (*Id.*, 496). Brook's permit application explains the probable hydrologic consequences of proposed mining. (Tr. Vol. VII, 1475). The baseline hydrology in Appendix D6, the probable hydrologic consequences discussion in the Mine Plan, and the Reclamation Plan explain the hydrologic consequences of Brook's proposed mining. (*Id.*, 1486). Brook's proposed mining would have little impact on groundwater inside the proposed permit boundary. (Tr. Vol. VII, 1482-83). Brook's isopach maps show a limited drawdown in groundwater, and the data in the permit application shows limited or no connection between the coal seams that Brook intends to mine and other water sources. (Tr. Vol. III, 555, 564). Brook's groundwater model also shows it is unlikely for Brook's operations to have a large impact on domestic wells. (*Id.*, 566).

41. In the TR-1 area specifically, the Council concludes that breaching the coal seam in that area will have limited impact on the Tongue River or other sources of groundwater. (*Id.*, 576). The Council notes Brook attempted to sample groundwater in the area around trench TR-1 but BHC had the sheriff's department escort Brook's contractor out of the area. (*Id.* 700-01). Still, Brook's groundwater model, geologic cross-sections, regional aquifer information, and other publically available data explain the groundwater in the saturated backfill of the TR-1 area. (Tr. Vol. VII, 1512).

42. The Council also agrees with Dr. Kuchanur's testimony about BHC's groundwater restoration demonstration (GRD). (Tr. Vol. VII, 1464- 1483, 1508-09). The GRD had a different objective than Brook's groundwater model and the permitting process in general. (Tr. Vol. VII, 1464-65). The GRD used past data to show recharge and does not predict the consequences of mining. (*Id.*, 1465-66). The GRD also used old data with unexplained variability, several orders of magnitude in some places. (*Id.*, 1477-78, BHC Ex. 15-040). Even so, the flow and recharge rates in the GRD matched predictions in Brook's groundwater model. (Tr. Vol. VII, 1466-71). The GRD also showed minimal interaction between the Tongue River and the saturated backfill, providing further evidence of the accuracy of Brook's groundwater model. (*Id.*, 1471-73, 1481-82).

43. Appendix D7, Soil Resources Assessment, in Volume VI meets the requirements of applicable law. *See* Wyo. Stat. Ann. §§ 35-11-406(b); WY Admin Code ENV LQC Ch. 2, §§ 3-4.

44. Appendix D8, Vegetation Inventory, in Volume VII meets the requirements of applicable law. *See* Wyo. Stat. Ann. §§ 35-11-406(b); WY Admin Code ENV LQC Ch. 2, § 3.

45. Appendix D9, Wildlife, in Volume VIII meets the requirements of applicable law. *See* Wyo. Stat. Ann. §§ 35-11-406(a); WY Admin Code ENV LQC Ch. 2, § 4, Ch. 4, § 2.

46. Appendix D10, Wetlands, in Volume IX meets the requirements of applicable law. *See* WY Admin Code ENV LQC Ch. 2, § 4, Ch. 4, § 2.

47. Appendix D11, Alluvial Valley Floors, in Volume X meets the requirements of applicable. *See* WY Admin Code ENV LQC Ch. 2, § 4, Ch. 3, § 2, Ch. 12, § 1. The Council concludes that Brook will not affect any alluvial valley floors, including those found in 2016. (Tr. Vol. II, 11-13).

48. The Mine Plan in Volume XI meets the requirements of applicable law. *See* Wyo. Stat. Ann. §§ 35-11-406(b); WY Admin Code ENV LQC Ch. 2, § 5, Ch. 3, § 2, Ch. 4, § 2, Ch. 6, §§ 1-6, Ch. 12, § 1.

49. As to objections about blasting, the Council agrees with Mr. Doug Emme that Brook's blasting will have little effect on nearby structures. (Tr. Vol. III, 584, 608). Still, the Council notes landowners within a half mile of the mine can request a pre-blast survey and Brook will publish a blasting schedule. (*Id.*, 582, 584-85).

50. As to objections about Brook's subsidence control plan and subsidence generally, the Council concludes Brook has met the relatively minimal requirements for a subsidence control plan. (Tr. Vol. II, 247-48). The Council also concludes that Brook's commitment to compile the required MSHA ground control plan will address subsidence. (*Id.*, 326-28). The Council concludes the calculations necessary for the ground control plan provide the same data DEQ required for every mining panel. (Tr. Vol. III, 663). It will also provide data Dr. Marino tested was needed. (Tr. Vol. II, 325). The ground control plan will also engineer each mining trench for both long and term-subsidence prevention. (Tr. Vol. II, 355-56). The mining process will also protect against subsidence by having pillars that run the length of each mine panel. (Tr. Vol. I, 120; Tr. Vol. II, 369).

51. The Reclamation Plan in Volume XII meets the requirements of applicable law. *See* Wyo. Stat. Ann. §§ 35-11-406(b); WY Admin Code ENV LQC Ch. 2, § 6, Ch. 3, § 2, Ch. 4, § 2.

52. As to objections about the adequacy of Brook's proposed bond, the Council accepts Mr. Emme's testimony that Brook's proposed amount is "robust" and "higher" than DEQ would have required. (Tr. Vol. III, 590). The Council also notes that DEQ has not yet set a

bond but will do so before issuing a permit. (*Id.*, 586-87). Once DEQ sets the reclamation bond, it will remain in place until DEQ finds Brook has successfully reclaimed disturbed land. (Tr. Vol. II, 180).

53. The Council notes DEQ's authority to enforce Brook's commitments in the permit application. (Tr. Vol. I, 117, 175-76, 230, 334, 349, Tr. Vol. III, 491, 493, 495, 624-25, 627). The Council also notes that other administrative agencies like MSHA, Game & Fish, Department of Transportation, DEQ's water and air quality divisions, Solid and Hazardous Waste Department, and the State Engineer's Office will have oversight over parts of Brook's operations. (Tr. Vol I, 152-53, 160-61, 183-84, 330, 538).

54. The Council finds that it should not impose additional permit conditions for two reasons. First, the Act does not authorize the Council to impose permit conditions. Instead, the Act authorizes the administrator, the director, and DEQ generally to administer permits, including any conditions on them. *See* Wyo. Stat. Ann. § 35-11-109. Second, the Council finds that no additional permit conditions are necessary for Brook's permit application to be complete and non-deficient.

55. Therefore, the Council finds that DEQ correctly determined Brook's permit application was complete, non-deficient, and suitable for publication. The Council's decision on the application pursuant to Wyo. Stat. Ann. § 35-11-406(p) is that: 1) DEQ should make the findings under Section 406(n) of the Act; and 2) based on the findings, the DEQ Director take appropriate action on Brook's permit application based on those findings.

DATED: July 24, 2017.

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CERTIFICATE OF SERVICE

I hereby certify that on July 24, 2017, I served a true and correct copy of the foregoing by email to the following:

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*ATTORNEYS FOR OBJECTOR
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**BEFORE THE ENVIRONMENTAL QUALITY COUNCIL
STATE OF WYOMING**

IN RE BROOK MINE APPLICATION)
) **Docket Nos. 17-4802, 17-4803,**
) **and 17-4804 (Consolidated)**
TFN 6 2-025)

**BIG HORN COAL COMPANY’S PROPOSED FINDINGS OF FACT AND
CONCLUSIONS OF LAW**

Big Horn Coal Company, LLC (“Big Horn”), by and through its undersigned counsel of record, hereby submits its Proposed Findings of Fact and Conclusions of Law as directed by the Environmental Quality Council’s (“EQC” or the “Council”) order following the close of evidence at hearing.

INTRODUCTION

The permit application submitted by Brook Mining Company, LLC (“Brook Mine”) fails to meet the legal requirements of a surface coal mining permit application. Brook Mine’s multiple failures to provide critical and required information in its permit application are not minor omissions. Rather, these failures are “deficiencies” that preclude permit approval. The EQC therefore should enter its Findings of Fact, Conclusions of Law,

and Order directing the Department of Environmental Quality (“DEQ”) to either deny Brook Mine’s requested permit, or deem the permit application deficient and require Brook Mine to affirmatively address each of the deficiencies, resubmit its permit application to DEQ, and then republish notice of the compliant permit application for public comment pursuant to the Environmental Quality Act (“EQA”), Wyo. Stat. Ann. § 35-11-406(h)-(k),¹ and the applicable rules and regulations.

I. Background

The record of this contested case hearing patently demonstrates that Brook Mine has spent over three years preparing a permit application that fails to meet statutory and regulatory requirements. Less critical for this Council’s decision, but an important consideration nonetheless, throughout the permit application process and in the hearing before the EQC, Brook Mine consistently demonstrated it has no intent to seriously consider the objections and concerns of nearby landowners or otherwise address the deficiencies in its permit application. It is now up to this Council to do so.

Broadly speaking, this Council must determine whether Brook Mine has satisfied its burden to affirmatively establish that its permit application is legally sufficient and direct whether (and on what terms) the permit application can proceed to the DEQ for final written findings and eventual issuance or denial. *See* Wyo. Stat. Ann. § 35-11-406(k), (p). To be sure, it is not the burden of Big Horn or any other objector to establish that the permit application is insufficient. Brook Mine readily admits it bears the burden of proof in these

¹ According to Wyo. Stat. Ann. § 35-11-103(e)(xxiv) “‘Deficiency’ means an omission or lack of sufficient information serious enough to preclude correction or compliance by stipulation in the approved permit to be issued by the director[.]”

proceedings, which includes the burden of proving to the Council that its permit application is complete and without deficiencies. *See Brook Mine's Brief on Statutes and Regulations that the Council Must Consider*, p. 10. Yet when objectors identified application deficiencies at hearing, Brook Mine never showed the Council or the objectors where the required information could be found in the permit application, nor did Brook Mine demonstrate that the information contained in the application is accurate and complete. Brook Mine instead attempted to silence or cast doubt on objector testimony, and addressed the identified deficiencies in generalities – affirming the type of information contained in the application, how many pages the application contains, and how long Brook Mine and DEQ personnel spent preparing and reviewing the application. Generalities do not satisfy Brook Mine's burden of proof.

The law requires Brook Mine's permit application to stand on its own. Analytical gaps, missing data and inaccurate information required by law to be included in a surface coal mine permit application simply cannot be remedied with testimonial assurances or by reference to DEQ's review process. Moreover, specific surface coal mine application requirements cannot be satisfied with inaccurate assumptions resulting from limited data taken from a large, data diverse geographic area. Brook Mine's permit application itself must contain the information required by statute and regulation. The required data and analysis is either present in the permit application or it is not. Without establishing that its permit application contains *all* required information, and that *all* the required information is *accurate*, Brook Mine fails to meet its burden as a matter of law.

II. Scope of the Council's Review

As this Council is well aware from prior briefing, the parties disagree as to the proper role of the Council and the scope of its review and decision, particularly as to whether the Council is to consider the requirements of section -406(n) and whether the Council is to direct DEQ to approve or deny Brook Mine's permit application at this time. The Council is now well aware of precedent² and the parties' respective positions on this issue, and Big Horn will not repeat those arguments here. Because the Council has declined to rule on whether it will consider Section -406(n)'s requirements prior to the parties' submission of proposed findings of fact and conclusions of law, Big Horn will present its proposed conclusions of law related to section -406(n) requirements separate from its proposed conclusions of law related to the legal requirements for surface coal mine permit applications found elsewhere in the EQA and the DEQ's Land Quality coal rules and regulations. All parties do seem to agree that the Council must review and consider whether Brook Mine's permit application satisfies Wyo. Stat. Ann. § 35-11-406(a)-(k) and the DEQ's Land Quality coal rules and regulations. *See* Briefs of the Parties in response to the Council's *Briefing Order*, dated June 13, 2017.

III. Scope of Big Horn's Objections to Brook Mine's Permit Application

Brook Mine (also often denominated RAMACO in permit documents or testimony) plans to develop coal resources via both open pit and highwall/auger mining methods. DEQ

² See Exhibit 1 to *Brook Mine's Response Brief to Big Horn Coal's Brief Regarding the Scope of the [EQC's] Review and Request for Oral Argument* (demonstrating that in *The Matter of Objections to Amax Coal Company, Eagle Butte Mine, TFN 1 6/212*, the Council specifically made findings of fact and conclusions of law related to the requirements of Section -406(n), and ordered DEQ to take specific action on the permit application).

Exh. 12, p. 12-192. Big Horn is the owner of surface lands, including valuable improvements and facilities, located within Brook Mine's proposed permit area. BHC Exh. 2; Tr. Vol. IV, p. 840, ln. 7-25, p. 840, ln. 1-18. Big Horn also holds an existing coal mine permit that overlaps Brook Mine's proposed permit area and imposes certain reclamation responsibilities on Big Horn, which are enforceable by DEQ. Tr. Vol. IV, p. 836, ln. 11-16. Big Horn's objections to Brook Mine's permit application therefore are reasonably focused on Brook Mine's proposed operations within this overlapping area, more particularly known as the TR-1 mining area, located in in the SE¼ of Section 15 and the NE¼ of Section 22, Township 57 North, Range 84 West, 6th P.M. *See Figure 1; see also* DEQ Exh. 12, p. 12-134, Tr. Vol. II, p. 204, ln. 10-13.

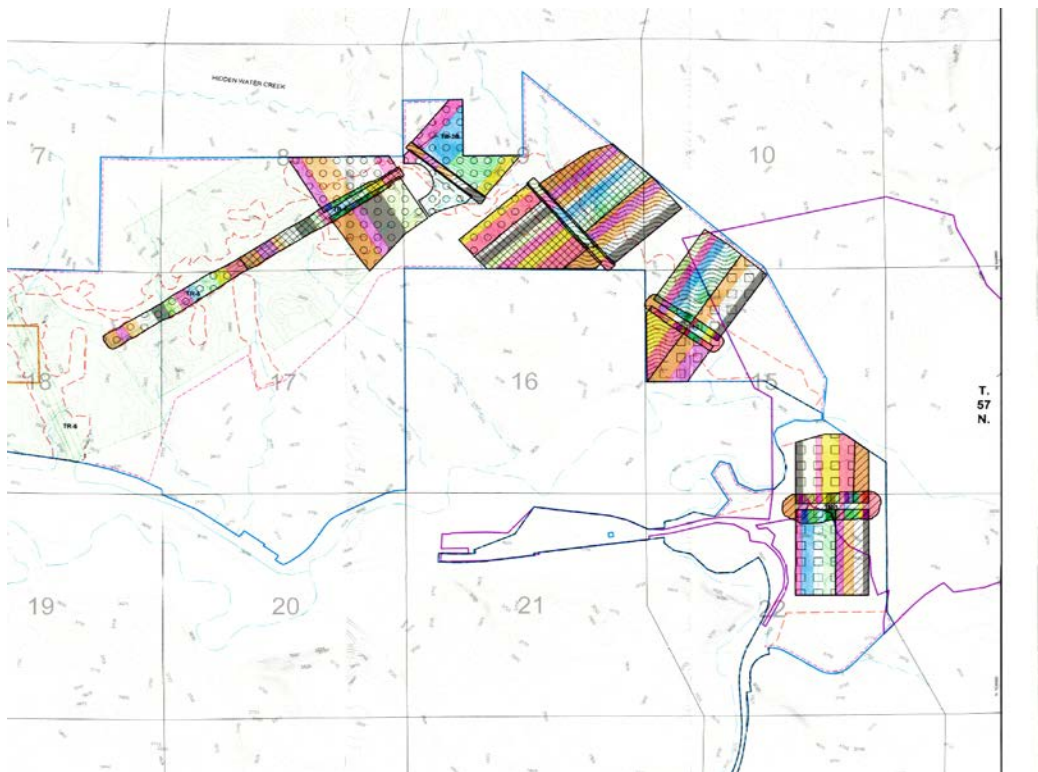


Figure 1. Taken from DEQ Exh. 12, p. 12-134 and showing the TR-1 mining area as the southeastern most mining area.

Evidence of record indisputably demonstrates that Brook Mine failed to provide required, accurate TR-1 area information in its surface coal mine permit application. The evidence further demonstrates that Brook Mine has not satisfied certain legal requirements related to surface water monitoring, underground coal fire analysis and management, overlapping permit boundary analysis and management, and surface owner protection bonding. These requirements must be satisfied prior to permit approval and issuance.

More specifically, Brook Mine's permit application contains and relies on inaccurate, missing or inadequate data and analysis for the TR-1 area, predominantly as it relates to the geology and groundwater located in the overburden above the coal seams Brook Mine proposes to mine. Without complete and accurate information as to the TR-1 area and the projected impacts thereto, and without detailed plans regarding the monitoring of these impacts, it is impossible for Brook Mine, DEQ, Big Horn, or the public to adequately assess Brook Mine's proposed mining operations or the resulting impacts.

The Council cannot fairly or reasonably characterize the flaws in Brook Mine's surface coal mine permit application as minor omissions that can be cured by stipulation or minor permit revisions. *See* Wyo. Stat. Ann. §§ 35-11-103(e)(xxiv); -406(h). The inaccurate, incomplete and missing geologic and hydrologic TR-1 area information constitute legal deficiencies in Brook Mine's permit application. The EQA does not tolerate such deficiencies. The permit application itself must include complete and accurate information, the DEQ must analyze complete and accurate information, and the

public must have the opportunity to review and comment on complete and accurate information *prior to* permit approval. Wyo. Stat. Ann. § 35-11-406(h) – (k).³

Accordingly, the Council must order Brook Mine to cure the deficiencies in its mine permit application by preparing, resubmitting to DEQ, and eventually republishing a legally sufficient surface mine permit application. At the very least, all deficiencies must be cured to the DEQ's and EQC's satisfaction prior to Brook Mine conducting any mining operations.⁴

IV. Relevant Legal Requirements

The following list sets forth the EQA and DEQ Land Quality – Coal Rules and Regulations permit application requirements specifically related to Big Horn's objections.⁵

i. Hydrology and Geology

- **Wyo. Stat. Ann. § 35-11-406(a)(vii)** - A general description of the land which shall include as nearly as possible ... if known, the nature and depth of the overburden, topsoil, subsoil, mineral seams or other deposits and any subsurface waters known to exist above the deepest projected depth of the mining operation.
- **Wyo. Stat. Ann. § 35-11-406(b)(v), (xvi), (xviii)** - A mine and reclamation plan dealing with the extent to which the mining operation will disturb or change the lands

³ Because Brook Mine intends to begin its mining operations in the TR-1 area, *see* DEQ Exh. 12, p. 12-134, any suggestion that Brook should be allowed to gather TR-1 area information and cure the TR-1 related permit application deficiencies following permit approval and/or the initiation of mining operations would risk unforeseen and permanent environmental damage and violate the EQA and DEQ Land Quality Division rules and regulations.

⁴ In its proposed *Conclusions of Law* below, Big Horn provides the Council alternative conclusions in the form of conditions intended to address the deficiencies in Brook Mine's permit application prior to the initiation of mining operations.

To be clear, Big Horn asserts that Brook Mine's permit application is deficient and not eligible for approval under the express provisions of the EQA. Big Horn only offers the proposed conditions as minimal, necessary steps that must be taken in the event the Council orders the DEQ to make its remaining findings and issue the permit.

⁵ All rules and regulations cited herein represent DEQ's, Land Quality – Coal Rules and Regulations. For brevity, the rules and regulations will be referred to herein by Chapter and Section number only.

to be affected and the plan whereby the operator will reclaim the affected lands, to include:

- A map setting forth the drainage plan on, below, above and away from the affected land including subsurface water above the mineral seam to be removed; and further showing the location of all waste water impoundments, any settling ponds, and other water treatment facilities, constructed drainways and natural drainways, and the surface bodies of water receiving this discharge.
 - A statement of the source, quality and quantity of water, if any, to be used in the mining and reclamation operations.
 - A plan to minimize the disturbances to the prevailing hydrologic balance at the minesite and in associated offsite areas and to the quality and quantity of water in surface and ground water systems both during and after mining operations and during reclamation.
- **ENV LQC Ch. 2 § 4(a)(vii), (viii), (x)(A), (xii), (xiv)** - A description of the lands to be affected within the permit area and how these lands will be affected, to include:
- A detailed description of the geology within the proposed permit area down to and including any aquifer⁶ to be adversely affected by mining below the lowest coal seam to be mined, to include structural geology that may influence the required reclamation, and the occurrence, availability, movement, quantity, and quality of potentially affected surface and groundwaters.
 - For the permit area, and adjacent areas, a characterization of the geologic strata down to and including the deeper of either the stratum immediately below the lowest coal seam to be mined, or any aquifer below the lowest coal seam to be mined that may be adversely impacted by mining, to include a statement of the results of test boring holes or core samples collected to show:
 - The location of any groundwater; and
 - Lithologic characteristics and thickness of each stratum and coal seam.
 - A description of the overburden, including the thickness, geological nature or any other factor that will influence the mining or reclamation activities.
 - Complete information on groundwater that may be affected in the permit area or adjacent areas, to include:

⁶ ENV LQC Ch. 1 § 2(j), defines “aquifer” as “a zone, stratum or group of strata that stores and transmits water in sufficient quantities for a specific use.” Nothing in this definition requires that water in a particular zone or stratum be currently used in order to qualify as an aquifer.

- An estimate of the depth and quantity of any groundwater existing in the proposed permit area down to and including the strata immediately below the lowest mineral seam to be mined, for which the operator may be required to conduct testing in order to determine the exact depth, quantity and quality of groundwater in geological formations affected by the mining operations;
 - The lithology and thickness of all known aquifers; and
 - The recharge, storage, and discharge characteristics of the groundwater, all according to the parameters and detail required by the Administrator of the Land Quality Division.
- A description of the surface water and groundwater and related geology in the permit area and general area sufficient to assess the probable hydrologic consequences (PHC). And if the determination of the PHC required by Chapter 19, Section 2(a)(i) indicates that adverse impacts on or off the proposed permit area may occur to the hydrologic balance, then information supplemental to that required under (a)(xi) and (a)(xii) of this Section (requiring complete surface and groundwater information) must be provided to evaluate such PHC and to plan remedial and reclamation activities.
- **ENV LQC Ch. 2 § 5(a)(x)** - A determination of the PHC of the proposed operation on the hydrologic regime and the quantity and quality of surface water and groundwater systems within the permit area and the general area consistent with the information required in Chapter 19, Section 2. The PHC determination shall be based on baseline hydrologic, geologic and other information collected for the permit application and may include data statistically representative of the site. This determination shall specifically address potential adverse hydrologic consequences and describe preventive and remedial measures.
- **ENV LQC Ch. 2 § 5(a)(ix)(C), (D)** - A plan to ensure the protection of the quantity and quality of, and rights to, surface water and groundwater both within and adjacent to the permit area, to include:
 - A plan to restore the approximate recharge capacity of the permit area in accordance with Chapter 4, Section 2(h), which requires the groundwater recharge capacity of reclaimed lands to be restored to a condition that provides a recharge rate approximating the pre-mining recharge rate; and
 - A Surface Water Monitoring Plan based on the PHC determination and the analysis of all baseline hydrologic, geologic, and other information in the permit application.
 - The plan must provide for the monitoring of parameters that relate to the suitability of the surface water for current and approved postmining

land uses and to the objectives for protection of the hydrologic balance as set forth in subsection 5(a)(ix) of Chapter 2.

- The plan must identify the surface water quantity and quality parameters to be monitored, sampling frequency, and site locations, and describe how the data may be used to determine the impacts of the operation upon the hydrologic balance.
- A Ground Water Monitoring Plan based on the PHC determination and the analysis of all baseline hydrologic, geologic, and other information in the permit application.
 - The plan must provide for the monitoring of parameters that relate to the suitability of the groundwater for current and approved postmining land uses and to the objectives for protection of the hydrologic balance set forth in subsection 5(a)(ix) of Chapter 2.
 - The plan must identify the quantity and quality parameters to be monitored, sampling frequency, and site locations, and describe how the data may be used to determine the impacts of the operation upon the hydrologic balance.
- **ENV LQC Ch. 2 § 6(b)** - A reclamation plan that describes how the operator will reclaim the affected lands to the proposed postmining land use in accordance with Chapter 4, Section 2(a), which requires restoration of the land to a condition equal to or greater than the highest previous use.
- **ENV LQC Ch. 19 § 2(a)(i)** - A determination of the projected result of proposed surface coal mining and reclamation operations, both on and off the mine site, which may reasonably be expected to change the quantity or quality of the surface and groundwater; the surface and groundwater flow, timing and availability, the surface and groundwater quality under seasonal flow conditions, including dissolved and suspended solids; and the stream channel conditions. This information shall be in sufficient detail to enable the Administrator of the Land Quality Division to determine the probable cumulative hydrologic impacts on surface and groundwater systems including the impacts resulting from the proposed operation and their interaction with the impacts of all anticipated mining upon all affected hydrologic systems.
 - ii. Underground Coal Fires
- **Wyo. Stat. Ann. § 35-11-406(b)(ix), (xiii)** – A plan for insuring that materials constituting a fire, health or safety hazard uncovered during or created by the mining process are promptly treated or disposed of during the mining process in a manner designed to prevent threats to human or animal health and safety, as well as procedures

proposed to avoid constituting a public nuisance, endangering the public safety, human or animal life.

- **ENV LQC Ch. 2 § 5(a)(iv)** – Contingency plans which have been developed to preclude sustained combustion of any materials constituting a fire hazard.

iii. Blasting Operations

- **Wyo. Stat. Ann. § 35-11-415(b)(xii)(E)** – surface coal mining operators **must**, upon request of a resident or owner, conduct a pre-blasting survey of any man-made dwelling or structure within one-half (1/2) mile of any portion of the permitted area.

iv. Overlapping Permits and Related Agreements

- **ENV LQC CH. 2 § 5(a)(xviii)** – Plans of mine facilities (including overstrip areas) that are to be shared by two or more separately permitted mining operations may be included in one permit application and referenced in the other application(s). Each permittee shall bond the mine facilities unless the permittees sharing it agree to another arrangement for assuming their respective responsibilities. If such agreement is reached, the application shall include a copy of the agreement between or among the parties setting forth the respective bonding responsibilities of each party for the mine facilities.

v. Surface Owner Protection Bond

- **Wyo. Stat. Ann. § 35-11-416(a)** - Where the surface owner is not the owner of the mineral estate proposed to be mined by mining operations, a permit shall not be issued without the execution of a bond or undertaking to the state for the use and benefit of the surface owner or owners of the land, in an amount sufficient to secure the payment for any damages to the surface estate, to the crops and forage, or to the tangible improvements of the surface owner. The amount of the bond shall be determined by the administrator and shall be commensurate with the reasonable value of the surrounding land, and the effect of the overall operation of the landowner. Financial loss resulting from disruption of the surface owner's operation shall be considered as part of the damage.

vi. Wyo. Stat. Ann. § 35-11-406(n) Requirements

- **Wyo. Stat. Ann. § 35-11-406(n)** – The permit applicant must establish that its permit application is in compliance with the EQA and all applicable state laws. No surface coal mining permit shall be approved unless the applicant affirmatively demonstrates and the administrator finds in writing:
 - The application is accurate and complete;

- The reclamation plan can accomplish reclamation as required by the EQA;
- The proposed operation has been designed to prevent material damage to the hydrologic balance outside the permit area.

PROPOSED FINDINGS OF FACT

1. This matter arises from the application of Brook Mining Company, LLC (“Brook Mine”) to the Department of Environmental Quality (“DEQ”), Land Quality Division (“LQD”), for a permit to conduct surface coal mining activities.

2. DEQ/LQD determined Brook Mine’s permit application, TFN 6 2-025, complete and suitable for publication pursuant to Wyo. Stat. Ann. § 35-11-406(h). In accordance with Wyo. Stat. Ann. § 35-11-406(j) and (k), the permit was published to the public and interested parties were required to submit written objections to the application by January 27, 2017. *See Big Horn’s Response to Brook Mine’s Motion to Dismiss Big Horn Coal Company’s Petition for a Contested Case Hearing*, Exhibit D.

3. Objectors in this case, Big Horn Coal Company (“Big Horn”), Powder River Basin Resource Council (“PRBRC”), and Mary Brezik-Fisher and David Fisher, submitted timely objections to the application. *See* BHC Exh. 3; Fisher Exh. 26; PRBRC Exh. 1.

4. Objectors requested an informal conference. DEQ denied these requests, leading to this contested case proceeding. *See Big Horn’s Response to Brook Mine’s Motion to Dismiss Big Horn Coal Company’s Petition for a Contested Case Hearing*, Exhibit A.

5. The Environmental Quality Council (“EQC” or “Council”) conducted a seven (7) day contested case hearing in this matter, receiving evidence regarding the permit

application contents, proposed operations, characteristics of the proposed permit lands, and possible impacts from the proposed operations.

6. Big Horn owns lands and facilities within and immediately adjacent to Brook Mine's proposed permit boundary, particularly the TR-1 mining area and the southeastern portion of the proposed mining area. BHC Exh. 2; Tr. Vol. IV, p. 840, ln. 7-25, p. 840, ln. 1-18. Big Horn owns and operates an industrial shop, rail loadout facility, bridge, access road, and railroad spur on the referenced lands. Big Horn also holds a state coal lease on S½ Section 23 and the N½ Section 26, Township 57 North, Range 84 West, 6th P.M. BHC Exh. 2; *see generally* Tr. Vol. IV, pp. 839-841.

7. Big Horn currently leases its shop to multiple tenants for industrial use and storage. Tr. Vol IV, p. 861, ln. 3-5.

8. Big Horn also holds an existing mining permit, No. 213-T8, that overlaps lands included in Brook Mine's proposed permit boundary. BHC Exh. 2; Tr. Vol. I, p. 78, ln. 7-10. Big Horn maintains a reclamation performance bond with DEQ/LQD on approximately 25 acres of land within Brook Mine's proposed permit boundary. BHC Exh. 5; Tr. Vol. IV, p. 863, ln. 18-22.

9. In its objection letter and at hearing, Big Horn, along with other Objectors, asserted that Brook Mine's permit application fails to meet applicable legal requirements found in the Environmental Quality Act ("EQA"), Wyo. Stat. Ann. §§ 35-11-101 *et seq.*, and DEQ/LQD—Coal Rules and Regulations. BHC Exh. 3. Big Horn primarily focused its objections on the area of the proposed mine overlapping and adjacent to its current

property and facilities, particularly the TR-1 mining area. *See* BHC Exh. 2; Tr. Vol. IV, pp. 841-843; *see generally* Tr. Vol. I-VII.

TR-1 Mining Area and Related Geology and Hydrology

10. Brook Mine proposes to begin mining operations in the TR-1 mining area. *See* DEQ Exh. 12, p. 12-134.

11. The TR-1 mining area is located entirely in the SE¼ of Section 15 and the NE¼ of Section 22, Township 57 North, Range 84 West, 6th P.M., where Brook Mine proposes to cut a highwall trench through the overburden above the targeted coal seams. *See* DEQ Exh. 12, p. 12-134; Tr. Vol. II, p. 204, ln. 10-20.

12. The overburden in the TR-1 mining area is geologically and hydrologically unique and can be distinguished from the overburden in the proposed permit area outside the TR-1 mining area. The TR-1 area overburden is composed of previously mined backfill material and is saturated with groundwater. DEQ Exh. 5, p. 5-014; Tr. Vol. II, p. 205, ln. 8-21, p. 211, ln. 24-25, p. 212, ln. 1-8, p. 214, ln. 7-24.

13. In order to gather data as to the geology in the proposed permit area, including overburden geology, Brook Mine conducted a drilling program consisting of a series of drill holes across the proposed permit area. *See* DEQ Exh. 5 at pp. 5-015, 5-054 through 5-164; Tr. Vol I, p. 87, ln. 6-17, p. 91, ln. 6-10. The drill hole data is found in the permit application at Addendum D5-2. DEQ Exh. 5 at pp. 5-015, 5-054 through 5-164.

14. Brook Mine conducted drill hole testing on a tighter configuration than DEQ's typical 160-acre spacing requirement. Tr. Vol. I, p. 48, ln. 9-10; p. 91, ln. 18-25; p. 92, ln. 1.

15. Brook Mine did not conduct drill hole testing in the TR-1 mining area, nor did it conduct drill hole testing in any part of the approximately 360 acres comprising the SE¹/₄ of Section 15 and the NE¹/₄ of Section 22, Township 57 North, Range 84 West. The permit application contains no geologic data from the distinct overburden within these lands. *See* DEQ Exh. 5, p. 5-054 through 5-164; Tr. Vol. II, p. 210, ln. 5-25, p. 211, ln. 1-23.

16. Brook Mine's permit application does not distinguish the TR-1 area overburden, and does not include specific geological characterization or identification of the TR-1 area overburden, including its geologic strata, nature, structural geology, lithology, thickness, or other factors that may influence mining or reclamation activities. *See* Tr. Vol. II, p. 209 – 211.

17. DEQ/LQD indicated that it intends to impose a permit condition requiring Brook Mine to gather overburden data from the TR-1 area prior to conducting any mining activity or creating any disturbance. Tr. Vol. I, p. 92, ln. 16-23. No such condition is referenced in the permit application or has otherwise been memorialized. *See* Tr. Vol. I, p. 65 ln. 18-25 (stating that DEQ Exh. 1, p. 1-053 contains the location of permit conditions); DEQ Exh. 1, p. 1-053 (showing no current permit conditions placed upon the permit application).

18. Appendix D6 of the permit application (DEQ Exh. 6) contains hydrologic information, including groundwater information. Tr. Vol. I, p. 93, ln. 17-23. Additional groundwater information is located in the Mine Plan, and its groundwater model. *See* DEQ Exh. 12.

19. Appendix D6 of the permit application characterizes the overburden as a whole, repeatedly describing the overburden within the entirety of the proposed permit area as “dry.” *See* DEQ Exh. 6, p. 23-27.

20. The permit application does not characterize any part of the overburden within the proposed permit area as a “potential hydrogeologic unit,” and concedes that Brook Mine installed no groundwater monitor wells and conducted no aquifer tests in any part of the overburden. *Id.*

21. In characterizing all overburden within the proposed permit area as “dry,” the permit application specifically relies on the drill hole logs and data found in Addendum D5-2, which is devoid of data from the TR-1 mining area. *Id.*; DEQ Exh. 5, p. 5-054 through 5-164; Tr. Vol. II, p. 210, ln. 5-25, p. 211, ln. 1-23.

22. DEQ witnesses Kristiansen and Kuchanur, and Big Horn witness Gerlach, all testified that unlike the overburden in the rest of the proposed permit area, the TR-1 area overburden consists of previously mined backfill material, and that this material is saturated with groundwater. *See* Tr. Vol. II, p. 211, ln. 24-25, p. 212, ln. 1-8, p. 214, ln. 7-24; Tr. Vol. III, p. 507, ln. 3-9; Tr. Vol. IV, p. 927-934; *see also* BHC Exh. 8, 9.

23. Nowhere does the permit application differentiate between the previously mined TR-1 area overburden and the overburden in other proposed mining areas which consist of native strata. Tr. Vol. II, p. 205, ln. 8-21, p. 212, ln. 6-19.

24. Brook Mine witness Barron testified that he does not know whether there is groundwater in the TR-1 overburden, Tr. Vol. IV, p. 720, ln. 11-23, and admitted that no

part of Brook Mine's permit application specifically addresses the TR-1 overburden or its groundwater saturation. Tr. Vol. IV, p. 717, ln. 1-4.

25. DEQ witness Kristiansen conceded that the permit application lacks required information as to the TR-1 overburden and its groundwater saturation, and that that the permit application inaccurately characterizes all overburden within the proposed permit area as dry. Tr. Vol. II, p. 214, ln 12-24, p. 216, ln 12-25, p. 217, ln 1-17.

26. Brook Mine's permit application fails to describe groundwater in the TR-1 area overburden. The permit application contains no site-specific data regarding groundwater location, quantity, quality, lithology, or thickness; or its recharge, storage, or discharge characteristics within the TR-1 area overburden. *See* Tr. Vol. II, p. 212, ln. 6-19; Tr. Vol. IV, p. 717, ln. 1-4, p. 720, ln. 19-23.

27. The permit application addresses "Probable Hydrologic Impacts" in section MP.6; groundwater impacts are specifically addressed in section MP.6.2. DEQ Exh. 5, p. 12-055, -059.

28. Section MP.6.2 of the permit application states that mining impacts to the groundwater found in the coal seams, including drawdown and pit inflows, are predicted and discussed in the groundwater model utilized by Brook Mine. *Id.* at 12-060.

29. As to the overburden, section MP 6.2 assumes that the overburden is dry and states that drawdown of groundwater in the overburden was not modeled. *Id.*

30. Brook Mine's "Operation Monitoring Program" is found in the permit application in section MP.7, with groundwater monitoring described in section MP.7.2. *Id.* at 12-062, -064 through -065.

31. Section MP 7.2 of the permit application states, “[g]roundwater monitoring during mining operations will be a continuation of the monitoring program” discussed in Appendix D6. *Id.* at 12-064. Appendix D6 states that no monitor wells exist to monitor the overburden. DEQ Exh. 6, p. 6-023 through -027.

32. The permit application contains no description or assessment of the hydrologic impacts of the proposed mining operations to the groundwater in the TR-1 overburden, and provides no plan whereby Brook Mine will monitor the hydrologic impacts of the proposed mining operations on groundwater in the TR-1 area overburden. *See generally* DEQ Exh. 5 and 12; *see also* Tr. Vol. IV, p. 717, ln. 1-4.

33. The groundwater model utilized by Brook Mine to support its permit application is discussed in Addendum MP-3 of the Mine Plan. DEQ Exh. 12, p. 12-183 through -294.

34. The groundwater model was designed to analyze the potential cumulative hydrological effects of the project and simulate the regional groundwater impacts from the proposed mining operations. DEQ Exh. 12, p. 12-184, -192.

35. The hydrogeologic data used in the groundwater model was limited to observation points, monitor wells and pumping tests, and private well information obtained from the State Engineers Office database. *Id.* at pp. 12-192, -194, -264. None of these data sources provide information as to the unique textural and hydraulic characteristics of the saturated backfill in the TR-1 area overburden. *See generally* DEQ Exh. 12, p. 12-183 through -294; *see also* Tr. Vol. III, p. 513, ln. 11-19; BHC Exh. 9, p. 6.

36. The groundwater model primarily focuses on the Carney and Masters coal seams; treats all overburden within the proposed permit area as dry, native strata; does not utilize any site-specific hydraulic conductivity information from the TR-1 area overburden; and does not model any drawdowns in the TR-1 overburden resulting from mining operations. DEQ Exh. 12, pp. 12-060, -197, -205, -206; BHC Exh. 9, p. 6.

37. The TR-1 area is spatially contained within the geographic area examined by the groundwater model; however, by assuming all overburden in the proposed permit area is dry, impacts to the groundwater in the TR-1 area overburden were not accurately modeled. *See generally* DEQ Exh. 12, p. 12-183 through -294.

38. Brook Mine's permit application states that mining operations will use and rely on pit inflows as a source of water. DEQ Exh. 12, p. 12-066. The application estimates that the proposed mining operations will use approximately 53,000 gallons of water per day (approximately 37 gallons per minute) from pit inflows and states that the estimated inflow amounts are demonstrated in the groundwater model in Addendum MP-3. DEQ Exh. 12, p. 12-116. The groundwater model estimates pit inflows at anywhere between 100 gallons per minute to 0.03 gallons per minute for the life of the mine. *Id.* at 12-254.

39. To facilitate its use of pit inflow water, Brook Mine proposed to place a pump in the TR-1 trench cut to pump out water for operations use for the life of the mine. DEQ Exh. 12, p. 12-052; Tr. Vol. III, p. 556, ln. 1-15.

40. DEQ witness Kuchanur testified that once Brook Mine excavates the trench cut in the TR-1 mining area, groundwater from the TR-1 overburden will flow into the trench cut and mine panels. Tr. Vol. III, p. 556, ln. 1-15.

41. The groundwater model does not accurately reflect or identify the groundwater in the TR-1 overburden, and does not accurately simulate the pit inflows from the TR-1 overburden. *See generally* DEQ Exh. 12, p. 12-183 through -294; *see also* Tr. Vol. IV, p. 717, ln. 1-4.

42. Brook Mine's permit application contemplates the use of groundwater found in the coal seams as a source of water to be used from pit inflows. *See* DEQ Exh. 12, p. 12-254. The permit application never acknowledges any use of the groundwater in the TR-1 overburden, does not identify this groundwater as a source of water for mine operations, and the quality and quantity of water to be used from this source is a complete unknown. *See generally* DEQ Exh. 12.

43. Appendix D6, section D6.2.2.5, of the permit application addresses recharge areas. The permit application does not specifically describe any recharge characteristics of the overburden generally, nor the TR-1 area specifically. DEQ Exh. 6, p. 6-029 through -031. Appendix D.6 of the permit application characterizes all overburden as dry, and relies on the groundwater model found at Addendum MP-3 for any detail concerning groundwater recharge. *Id.*

44. The groundwater model is devoid of any TR-1 overburden data and characterizes recharge in the overburden, generally, as having a uniform recharge rate of between 0.00000012 ft/day/ft² and 0.00008 ft/day/ft² and 0.0005 and 0.35 inches per year. DEQ Exh. 12, p. 12-221.

45. Upon review of materials not in or referenced by the permit application, DEQ witness Kuchanur estimated the TR-1 overburden recharge rate at 0.06 CFS. *See* Tr. Vol VII, p. 1470, ln. 1-16; p. 1471, ln. 14-15.

46. The groundwater in the TR-1 overburden is currently held in place by a low permeability, shale aquitard, or barrier, which physically separates the groundwater located in the overburden from the groundwater located in the coal seams. Tr. Vol. III, p. 508, ln. 2-25, p. 509, ln. 1.

47. In order to access the targeted coal seams, the proposed mining operations in the TR-1 area will excavate and cut through the shale barrier and allow the TR-1 overburden groundwater to flow directly into the trench and mining panels. *Id.*; *see also id* at p. 556, ln. 1-15.

48. Neither the permit application nor the groundwater model contains any data or analysis regarding whether and how Brook Mine will be able to restore the recharge rate of the groundwater in the TR-1 overburden after mining operations cease. *See generally* DEQ Exh. 6, 12 and 13.

Surface Water Monitoring

49. DEQ witness Kunze conceded that Brook Mine needs to revise the number and location of surface water monitor wells proposed in the permit application for the Tongue River. Tr. Vol. II, p. 411, ln. 18-25, p. 412, ln. 1-12.

50. In order to adequately monitor mining impacts on the Tongue River, one monitor well needs to be placed further upstream on the Tongue River, near the furthest upstream point within the proposed permit area; an additional monitor well should be

placed near the proposed permit boundary on the Tongue River a short distance downstream from the confluence of the Tongue River and Goose Creek; and another additional monitor well should be placed on Goose Creek. *Id.*

51. DEQ policy requires permit applications to contain pre-mining monitoring and studies of both surface and groundwater to include monitoring data for a one year period, at minimum. *See* DEQ Exh. 22, pp. 3, 5, 15, 16; *see also* Tr. Vol. II, p. 395, ln. 9-17.

52. The TR-1 mining area is located immediately adjacent to both the Tongue River and Goose Creek, and the confluence of the two surface water bodies. DEQ Ex. 12, p. 12-134; Tr. Vol. II, p. 204, ln. 25, p. 205, ln. 1-7.

53. The permit application does not discuss or analyze whether or to what extent the groundwater in the TR-1 overburden is hydrologically connected to the Tongue River or Goose Creek. *See generally* DEQ Exh. 5 and 12.

54. The evidence suggests a direct hydrological connection exists between the groundwater in the TR-1 overburden and the Tongue River. Tr. Vol. III, p. 498, ln. 19-25, p. 499, ln. 1-19; Tr. Vol. IV, p. 936, ln. 5-11; BHC Exh. 9.

55. Absent information in the permit application regarding the nature and extent of the hydrologic connection between the TR-1 overburden and the Tongue River, it is impossible for Brook Mine or DEQ to determine if or to what extent mining through the saturated TR-1 overburden will adversely impact the Tongue River. *See* Tr. Vol. II, p. 420, ln. 7-19.

56. Neither the monitor wells identified in Brook Mine's permit application nor the additional monitor wells DEQ proposed at hearing will adequately monitor impacts to the Tongue River from mining through the saturated overburden in the TR-1 area. *See* DEQ Exh. 12, p. 12-062 through -064, -112; *see also* Tr. Vol. II, p. 411, ln. 18-25, p. 412, ln. 1-15; DEQ Exh. 6 and 12 *generally*. An additional monitor well on the Tongue River, just north of the TR-1 mining area, is necessary to adequately monitor impacts to the Tongue River from mining in the TR-1 area. *See* DEQ Exh. 12, p. 12-062 through -064, -0112; Tr. Vol. II, p. 420, ln. 7-19.

Access to the TR-1 Area for Testing

57. Brook Mine had legal authority to enter Big Horn property, including the TR-1 area, to conduct exploration and data recovery operations from July 2012 through July 2014, pursuant to an exploration agreement with Big Horn. Tr. Vol. IV, p. 847, ln. 9-16.

58. Brook Mine was gathering information for its permit application, including gathering geology information, and placing monitor and observation wells outside the TR-1 area, during this same period. *See* Tr. Vol. I, p. 51, ln. 18-25.

59. Brook Mine apparently chose not to gather information from the TR-1 mining area during the term of its agreement with Big Horn. *See generally* DEQ Exh. 1-13.

60. Brook Mine allowed its exploration agreement with Big Horn to expire, and never subsequently sought permission to enter Big Horn's property to conduct testing or gather information. Tr. Vol. IV, p. 848, ln. 1-9, p. 855, ln. 17-20.

61. After the expiration of the exploration agreement, and without notice to or permission from Big Horn, Brook Mine sent drilling rigs to Big Horn property. Big Horn discovered unauthorized drilling rigs on its property and contacted law enforcement, which instructed the drilling rig operator to leave Big Horn property. *Id.* at p. 848, ln. 10-25, p. 849, ln. 1-25, p. 850, ln. 1-4.

62. There is no evidence in the record that it was not possible for Brook Mine to acquire geologic or hydrologic information from the TR-1 area.

Underground Coal Fires

63. There is a history of underground coal fires in the proposed permit area. *See* Tr. Vol. II, p. 334, ln. 2-5.

64. Brook Mine acknowledged at hearing that coal fires may exist within the proposed permit boundary. Tr. Vol. IV, p. 722, ln. 16-21.

65. Brook Mine has not conducted any survey or examination of coal fires in the proposed permit area; and the permit application contains no information to support Brook Mine's testimony at hearing that although coal fires may exist, it believes no underground coal fires exist in the proposed permit area. *Id.* at p. 716, ln. 4-17.

Blasting Protections Afforded to Surface Owners

66. At hearing, Big Horn witness Sweeney requested a pre-blasting survey pursuant to Wyo. Stat. Ann. § 35-11-415(b)(xi)(E), and seismic monitoring for Big Horn's shop and other infrastructure located within the proposed permit area. Tr. Vol. IV, p. 860, ln. 17-25, p. 861, ln. 1-16.

67. DEQ and Brook Mine representatives testified that on request from a resident within one half-mile of the proposed permit boundary, seismic monitors could be placed near structures to measure the ongoing impacts from blasting. Tr. Vol. III, p. 618, ln. 12-25, p. 619, ln. 1-2.; Tr. Vol. IV, p. 770, ln. 20-25, p. 771, ln. 1-5, p. 783, ln. 5-19.

Overlapping Permit Boundaries and Related Agreements

68. Brook Mine's permit application states that Big Horn's "permit boundary [is] within Brook Mine's permit boundary," that "all mining operations are covered under individual Permits to Mine," and "[a]greements between the permittees are located in the Adjudication File." DEQ Exh. 12, p. 12-088. In its Reclamation Plan, the permit application states that "the last party to disturb an area will have final reclamation responsibility on the disturbed dual permitted lands." DEQ Exh. 13, p. 13-075.

69. Big Horn requires access to the overlapping property as a landowner with tenants and as a permit holder with outstanding reclamation responsibilities. *See* Tr. Vol. IV, p. 870, ln. 14-21.

70. When two or more parties have overlapping surface coal mine permits, the permit documents may specifically reference any agreements between the parties and expressly provide that each party is only responsible for reclamation resulting from its own disturbance. BHC Exh. 5 and 6.

71. There are no operational, surface use, or overlapping permit boundary agreements between Brook Mine and Big Horn Coal. Tr. Vol. IV, p. 865, ln. 9-15. Brook Mine's permit application incorrectly implies there is an agreement between Brook Mine and Big Horn in the adjudication file. *See* DEQ Exh. 12, p. 12-088.

72. Brook Mine's permit application states that "the last party to disturb an area will have final reclamation responsibility on the disturbed dual permitted lands" rather than stating as DEQ witness Kristiansen conceded, that each party will be responsible for reclamation and maintaining a reclamation bond only as to that party's facilities, operations, and disturbances. *See* DEQ Exh. 13, p. 13-075; Tr. Vol. II, p. 188, ln. 20-25, p. 189, ln. 1-25, p. 190, ln. 1-16.

Surface Owner Protection Bond

73. Brook Mine has not yet submitted a surface owner protection bond to DEQ, as required by Wyo. Stat. Ann. § 35-11-416(a), for the use and benefit of Big Horn as a surface owner within the proposed permit area. *See* Tr. Vol. II, p. 200, ln. 9-25, p. 201, ln. 1.

74. DEQ assured Big Horn that it will determine the amount of the surface owner protection bond prior to permit issuance and only after participation and input from Big Horn. Tr. Vol. II, p. 201, ln. 8-25, p. 202, ln. 1-4.

PROPOSED CONCLUSIONS OF LAW

1. The Council has jurisdiction over this matter pursuant to Wyo. Stat. Ann. §§ 35-11-406(k) and -112(a).

2. EQC conducted the contested case hearing pursuant to DEQ, Practice and Procedure Rules, Chapter 2.

3. Pursuant to the Environmental Quality Act, Wyo. Stat. Ann. §§ 35-11-101 *et seq.*, and applicable Department of Environmental Quality, Land Quality Division, Coal Rules and Regulations, Brook Mine's permit application must contain specific information,

data and other substantive content and analysis regarding the proposed surface coal mining operations, the land and water to be affected, foreseeable impacts from the proposed mining operations, and how the foreseeable impacts will be monitored, minimized and reclaimed.

4. The Council must determine whether Brook Mine has affirmatively established that its permit application contains all legal requirement imposed by the Environmental Quality Act, Wyo. Stat. Ann. §§ 35-11-101 *et seq.*, and applicable Department of Environmental Quality, Land Quality Division, Coal Rules and Regulations.

5. The Council also must determine whether Brook Mine has met its specific burden under Wyo. Stat. Ann. § 35-11-406(n) necessary for approval of its permit application, and, based on that determination, direct DEQ to either issue or deny Brook Mine a permit after making the requisite written findings.

6. **Wyo. Stat. Ann. § 35-11-406(a)(vii) and DEQ, Land Quality Coal Rules, Ch. 2, Section 4(a)(vii), (viii), (x)** require a surface coal mining permit application to provide a general description of the land, including the nature of the overburden, a detailed description of the geology down to the lowest coal seam to be mined, a characterization of the geologic strata down to the lowest coal seam to be mined, the lithological characteristics of each stratum, and a description of any factor in the overburden that will influence mining or reclamation activities.

7. Brook Mine's permit application fails to provide complete and accurate information required by Wyo. Stat. Ann. § 35-11-406(a)(vii) and DEQ, Land Quality Coal Rules, Ch. 2, Section 4(a)(vii), (viii), (x) as to the overburden in the TR-1 mining area.

Descriptions and characterizations in the form of assumptions or based on an extrapolation of data from geographically and geologically distinct areas fail to satisfy these statutory and regulatory requirements.

8. DEQ must either deny the permit application, or require Brook Mine to include the complete and accurate TR-1 specific geologic data and analysis in its permit application, resubmit its application to DEQ and, after approval, re-publish notice of its complete application allowing interested persons to file written objections, pursuant to Wyo. Stat. Ann. § 35-11-406(h)-(k).

—In the alternative, and without waiving BHC's stated position that the application must be denied and resubmitted, if the EQC elects to direct DEQ to impose permit conditions:⁷

DEQ shall issue the permit with an express written condition that, prior to conducting any mining operations, Brook Mine must obtain and analyze TR-1 overburden samples and provide all such data and analysis to DEQ for review and approval in accordance with the applicable statutes and DEQ-Land Quality Coal Rules and Regulations.

9. **Wyo. Stat. Ann. § 35-11-406(a)(vii) and DEQ, Land Quality Coal Rules, Ch. 2, Section 4(a)(vii), (viii), (xii)** require a surface coal mining permit application to provide a description of any subsurface waters known to exist above the deepest projected

⁷ See *supra* Note 4. All alternative Conclusions of Law proposing permit conditions are provided by Big Horn with this same caveat that Big Horn first and foremost asserts that the permit application submitted by Brook Mine is deficient and must be either denied or sent back to Brook Mine to remedy these deficiencies, resubmit the application to DEQ for approval, and re-publish for public review pursuant to Wyo. Stat. Ann. § 35-11-406(h)-(k).

depth of the mining operation; the occurrence, availability, quality and quantity of potentially affected groundwaters; the location of any groundwater; and complete information of groundwater that may be affected in the permit area, including the lithology and thickness of known aquifers and the recharge, storage and discharge characteristics of the groundwater.

10. Brook Mine's permit application fails to provide complete and accurate information required by Wyo. Stat. Ann. § 35-11-406(a)(vii) and DEQ, Land Quality Coal Rules, Ch. 2, Section 4(a)(vii), (viii), (xii), as it fails to identify or describe any groundwater in the TR-1 mining area overburden.

11. DEQ must either deny the permit application, or require Brook Mine to include the complete and accurate TR-1 specific groundwater information and analysis in its permit application, resubmit its application to DEQ and, after approval, re-publish notice of its complete application allowing interested persons to file written objections, pursuant to Wyo. Stat. Ann. § 35-11-406(h)-(k).

—In the Alternative—

DEQ shall issue the permit with an express written condition that, prior to conducting any mining operations, Brook Mine must obtain and analyze additional groundwater information from the TR-1 area overburden and provide all such data and analysis to DEQ for review and approval in accordance with the applicable statutes and DEQ-Land Quality Coal Rules and Regulations.

12. **Wyo. Stat. Ann. § 35-11-406(b)(xvi)** requires a surface coal mining permit application to contain a statement of the source, quality, and quantity of any water to be used in mining or reclamation operations.

13. Brook Mine's permit application fails to provide complete and accurate information required by Wyo. Stat. Ann. § 35-11-406(b)(xvi), as it fails to identify the groundwater in the TR-1 overburden as a source of water for its proposed operations and similarly fails to identify the quality of that water or the quantity to be used in its mining or reclamation operations.

14. DEQ must either deny the permit application, or require Brook Mine to include the complete and accurate information and analysis regarding the TR-1 as a specific water source in its permit application, resubmit its application to DEQ and, after approval, re-publish notice of its complete application allowing interested persons to file written objections, pursuant to Wyo. Stat. Ann. § 35-11-406(h)-(k).

—In the Alternative—

DEQ shall issue the permit with the express written conditions that:

(1) prior to conducting any mining operations, Brook Mine must identify all water sources to be used in its proposed mining and reclamation operations, including groundwater from the TR-1 overburden, by geologic source, including quality and quantity characteristics, and submit this data and analysis to DEQ for review and approval in accordance with applicable statutes and DEQ-Land Quality Coal Rules and Regulations; and

(2) after the conclusion of mining operations in the TR-1 area, the TR-1 trench must be reclaimed without delay, in accordance with applicable law, and may not remain open for use as a source of water for subsequent mining operations on adjacent lands.

15. **Wyo. Stat. Ann. § 35-11-406(b)(xviii) and DEQ, Land Quality Coal Rules, Ch. 2, Section 4(a)(xiv), Section 5(a)(x), Chapter 19 Section 2(a)** require a surface coal mining permit application to contain a plan to minimize disturbances to the prevailing hydrologic balance at the minesite and associated offsite areas and to the quality and quantity of surface and groundwater systems both during and after mining operations; a description of the groundwater and related geology in the permit area sufficient to assess the probable hydrologic consequences; a determination of the probable hydrologic consequences of the proposed operation on the hydrologic regime and the quantity and quality of surface and groundwater systems within the permit area; and a determination of the projected result of the proposed surface coal mining and reclamation operations, which may be expected to change the quality or quantity of the surface and groundwater, its flow, timing and availability, all in sufficient detail to enable the Administrator of the Land Quality Division to determine the probable cumulative hydrologic impacts on surface and groundwater systems.

16. Brook Mine's permit application fails to meet the requirements of Wyo. Stat. Ann. § 35-11-406(b)(xviii) and DEQ, Land Quality Coal Rules, Ch. 2, Section 4(a)(xiv), Section 5(a)(x), Chapter 19 Section 2(a), specifically, as to the lack of any plan or assessment related to probable impacts from mining through the TR-1 overburden, and

any probable change in the quality or quantity of the surface or groundwater in that area, its flow, timing or availability.

17. DEQ must either deny the permit application, or require Brook Mine to include sufficiently detailed, site-specific groundwater data for the TR-1 overburden in its permit application, including the anticipated impacts from mining the TR-1 area on ground and surface waters, resubmit its application to DEQ and, after approval, re-publish notice of its complete application allowing interested persons to file written objections, pursuant to Wyo. Stat. Ann. § 35-11-406(h)-(k).

—In the Alternative—

DEQ shall issue the permit with an express written condition that, prior to conducting any mining operations, Brook Mine must provide a surface and groundwater impact analysis (during-mining and post-mining) that incorporates site-specific textural and hydrological data in the TR-1 mining area, to DEQ for review and approval in accordance with applicable statutes and DEQ-Land Quality Coal Rules and Regulations.

18. **DEQ, Land Quality Coal Rules, Ch. 2, Section 5(a)(ix)** requires a surface coal mining permit application to contain both a groundwater and surface water monitoring plan, based on hydrologic, geologic and other information in the permit application, which identifies the quality and quantity parameters to be monitored, sampling frequency and site locations, and describes how the data will be used to determine the impacts of the mining operations on the hydrologic balance.

19. Brook Mine's permit application fails to meet the requirements of DEQ, Land Quality Coal Rules, Ch. 2, Section 5(a)(ix), as it fails to contain sufficient monitoring locations to determine the impacts of the proposed mining operations in the TR-1 area on surface water within and adjacent to the permit area. The permit application further fails to meet the requirements of DEQ, Land Quality Coal Rules, Ch. 2, Section 5(a)(ix), as it fails to contain sufficient monitoring locations to determine the impacts of mining the TR-1 area on the groundwater located in the TR-1 overburden.

20. DEQ must either deny the permit application, or require Brook Mine to identify and commit to installing additional monitoring locations within its permit application necessary to determine the impacts of mining the TR-1 area on the Tongue River and Goose Creek and the groundwater located in the TR-1 overburden, resubmit its application to DEQ and, after approval, re-publish notice of its complete application allowing interested persons to file written objections, pursuant to Wyo. Stat. Ann. § 35-11-406(h)-(k).

—In the Alternative—

DEQ shall issue the permit with an express written condition that, prior to conducting any mining operations, Brook Mine must submit to DEQ for review and approval in accordance with applicable statutes and DEQ-Land Quality Coal Rules and Regulations, alterations to its water monitoring locations as follows:

First, as recommended by DEQ, move one monitor well farther upstream on the Tongue River near the boundary of the proposed permit area, and add additional monitoring cites on the Tongue River just downstream of the

confluence with Goose Creek and an additional monitoring location on Goose Creek; and

Second, add groundwater monitoring locations in the TR-1 overburden and add an additional surface water monitoring location in the Tongue River just north of the TR-1 mining area.

21. **DEQ, Land Quality Coal Rules, Ch. 2, Section 5(a)(ix)** and its incorporation of Ch. 4, Section 2(h) requires a surface coal mining permit application to include a plan to restore the approximate recharge capacity of groundwater within the permit area to a condition that approximates the pre-mining recharge rate.

22. Brook Mine's permit application fails to provide the information required by DEQ, Land Quality Coal Rules, Ch. 2, Section 5(a)(ix) as to the groundwater in the TR-1 overburden, as there is no a plan to restore the recharge capacity and no accurate information as to the pre-mining recharge capacity of that groundwater.

23. DEQ must either deny the permit application, or require Brook Mine to provide and analyze data concerning the recharge capacity of the TR-1 overburden groundwater and include a plan in the permit application to restore the recharge capacity of the TR-1 overburden groundwater to pre-mining conditions, resubmit its application to DEQ and, after approval, re-publish notice of its complete application allowing interested persons to file written objections, pursuant to Wyo. Stat. Ann. § 35-11-406(h)-(k).

—In the Alternative—

DEQ shall issue the permit with an express written condition that, prior to conducting any mining operations, Brook Mine must determine the recharge

capacity of the TR-1 overburden groundwater and provide a plan to restore the TR-1 overburden groundwater to pre-mining conditions to DEQ for review and approval in accordance with applicable statutes and DEQ-Land Quality Coal Rules and Regulations.

24. **Wyo. Stat. Ann. § 35-11-406(b)(ix), (xiii) and DEQ, Land Quality Coal Rules, Ch. 2, Section 5(a)(iv)** require a surface coal mining permit application to include a plan for insuring that “materials constituting a fire, health or safety hazard uncovered during or created by the mining process are promptly treated or disposed of during the mining process in a manner designed to prevent . . . threats to human or animal health and safety,” contain “procedures proposed to avoid constituting a public nuisance, endangering the public safety, human or animal life,” and include “plans which have been developed to preclude sustained combustion of any materials constituting a fire hazard.”

25. Due to the prevalence and history of coal fires in the area, the lack of any information as to current coal fire activity within the permit area renders Brook Mine’s permit application deficient with regard to the required fire safety planning.

26. DEQ shall issue the permit with an express written condition that, prior to conducting any mining operations, Brook Mine must submit and DEQ must approve a report providing maps, descriptions, photographs, and any existing evidence of underground coal fires within 500 feet of any proposed mining locations and a plan that identifies the specific safety measures Brook Mine will take where underground coal fires exist within 500 feet of any proposed mining location.

27. **Wyo. Stat. Ann. § 35-11-415(b)(xi)(E)** requires surface coal mining operators to provide a pre-blasting survey “of a man-made dwelling or structure within one-half (1/2) mile of any portion of the permitted area,” on request of a resident or owner.

28. Finding Big Horn’s request for a pre-blast survey to be mandated by law, and Big Horn’s request for seismic monitors to be reasonable and available, DEQ shall issue the permit with an express written condition that, prior to conducting any mining operations, Brook Mine, under DEQ direction, will conduct a pre-blast survey of all man-made structures and dwellings belonging to Big Horn within one-half mile of the permit area, and install seismic monitoring devices at each of Big Horn’s facilities sufficient to ensure the protection of Big Horn infrastructure, improvements and tenants.

29. Based on the testimony and evidence of record, Brook Mine’s permit application fails to accurately state there are no operational, surface use, or overlapping permit boundary agreements between Brook Mine and Big Horn. The permit application also fails to accurately and sufficiently set forth the reclamation responsibilities of each party as to disturbance within the overlapping permit boundaries.

30. DEQ shall issue the permit with an express written condition that section MP.22 and section RP.12 of Brook Mine’s mine and reclamation plans must be amended to accurately reflect the following:

- There are no operational, surface use, or overlapping permit boundary agreements between Brook Mine and Big Horn Coal.
- Big Horn maintains a reclamation performance bond adequate to reclaim Big Horn facilities and all disturbances associated within Big Horn operations within Big Horn’s permit area.

- Brook Mine shall maintain a reclamation performance bond sufficient to reclaim all disturbance associated with Brook Mine operations within its permit area.
- Big Horn shall not be responsible for reclamation of any disturbance unrelated to Big Horn operations or facilities, including, but not limited to, Brook Mine disturbance within the remaining lands subject to Big Horn's reclamation performance bond.

31. **Wyo. Stat. Ann. § 35-11-416(a)** requires that when the surface owner is not the mineral owner of the estate proposed to be mined, prior to permit issuance, the operator must execute a bond “for the use and benefit of the surface owner or owners of the land, in an amount sufficient to secure the payment for any damages to the surface estate . . . or to the tangible improvements of the surface owner.”

32. In accordance with DEQ's stated assurance at hearing, no permit shall be issued to Brook Mine unless and until a surface owner protection bond is issued for the benefit of Big Horn and after good faith consultation with Big Horn as to the appropriate bond amount.

PROPOSED CONCLUSIONS OF LAW AS TO WYO. STAT. ANN. § 35-11-406(n)

33. **Wyo. Stat. Ann. § 35-11-406(n)** requires Book Mine, as a surface coal mining permit applicant, to meet its burden of “establishing that his application is in compliance with [the Environmental Quality Act] and all applicable state laws” and provides that “[n]o surface coal mining permit shall be approved unless the applicant affirmatively demonstrates” the following:

- (i) That the application is accurate and complete;
- (ii) That the reclamation plan can accomplish reclamation as required by [the Environmental Quality Act]; and

(iii) That the proposed operation has been designed to prevent material damage to the hydrologic balance outside the permit area.

34. Based on the forgoing findings of fact and conclusions of law:

- Brook Mine has failed to affirmatively establish that its permit application is in compliance with the requirements of the Environmental Quality Act and all applicable rules and regulations.
- Brook Mine's permit application lacks required information, mischaracterizes, and contains inaccurate information as to the TR-1 mining area and its related overburden geology and hydrology, as well as lacks the additional legal requirements stated above. Therefore, Brook Mine has failed to affirmatively demonstrate that its permit application is accurate and complete.
- Brook Mine has failed to affirmatively demonstrate that the reclamation plan can accomplish reclamation as required by the Environmental Quality Act, which emphasizes a standard for restoration to pre-mining conditions⁸, because the permit application fails to sufficiently identify pre-mining conditions in the TR-1 area.
- Brook Mine has failed to affirmatively demonstrate that its proposed operation has been designed to prevent material damage to the hydrologic balance outside the permit area, because it fails to account for or consider critical and unique hydrological conditions in the TR-1

⁸ See DEQ, Land Quality Coal Rules, Ch. 4, Section 2.

area and fails to identify how it will monitor the impacts of the proposed TR-1 area mining operations on the hydrological balance within, let alone outside the proposed permit area.

35. DEQ must either:

- Deny the permit application; or
- Require Brook Mine to complete its permit application in light of the above identified deficiencies, resubmit its application to DEQ and, after approval, re-publish notice of its complete application allowing interested persons to file written objections, pursuant to Wyo. Stat. Ann. § 35-11-406(h)-(k).

—In the Alternative—

DEQ shall issue the permit with all of the express written conditions listed above.

DATED:

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CERTIFICATE OF SERVICE

I hereby certify that on July ____, 2017 a true and correct copy of the foregoing was served by email to the following:

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Subject: BHC Proposed FOF and COL 7.23.17.DOCX
Date: Monday, August 07, 2017 9:26:47 AM
Attachments: [Final Draft BHC Proposed FOF and COL 7.23.17.DOCX](#)

Mr. Ruby,

Please find the attached word version of Big Horn Coal Company's Proposed Findings of Fact and Conclusions of Law.

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*ATTORNEYS FOR OBJECTOR
BIG HORN COAL COMPANY*

**BEFORE THE ENVIRONMENTAL QUALITY COUNCIL
STATE OF WYOMING**

IN RE BROOK MINE APPLICATION)
) **Docket Nos. 17-4802, 17-4803,**
) **and 17-4804 (Consolidated)**
TFN 6 2-025)

**BIG HORN COAL COMPANY’S PROPOSED FINDINGS OF FACT AND
CONCLUSIONS OF LAW**

Big Horn Coal Company, LLC (“Big Horn”), by and through its undersigned counsel of record, hereby submits its Proposed Findings of Fact and Conclusions of Law as directed by the Environmental Quality Council’s (“EQC” or the “Council”) order following the close of evidence at hearing.

INTRODUCTION

The permit application submitted by Brook Mining Company, LLC (“Brook Mine”) fails to meet the legal requirements of a surface coal mining permit application. Brook Mine’s multiple failures to provide critical and required information in its permit application are not minor omissions. Rather, these failures are “deficiencies” that preclude permit approval. The EQC therefore should enter its Findings of Fact, Conclusions of Law,

and Order directing the Department of Environmental Quality (“DEQ”) to either deny Brook Mine’s requested permit, or deem the permit application deficient and require Brook Mine to affirmatively address each of the deficiencies, resubmit its permit application to DEQ, and then republish notice of the compliant permit application for public comment pursuant to the Environmental Quality Act (“EQA”), Wyo. Stat. Ann. § 35-11-406(h)-(k),¹ and the applicable rules and regulations.

I. Background

The record of this contested case hearing patently demonstrates that Brook Mine has spent over three years preparing a permit application that fails to meet statutory and regulatory requirements. Less critical for this Council’s decision, but an important consideration nonetheless, throughout the permit application process and in the hearing before the EQC, Brook Mine consistently demonstrated it has no intent to seriously consider the objections and concerns of nearby landowners or otherwise address the deficiencies in its permit application. It is now up to this Council to do so.

Broadly speaking, this Council must determine whether Brook Mine has satisfied its burden to affirmatively establish that its permit application is legally sufficient and direct whether (and on what terms) the permit application can proceed to the DEQ for final written findings and eventual issuance or denial. *See* Wyo. Stat. Ann. § 35-11-406(k), (p). To be sure, it is not the burden of Big Horn or any other objector to establish that the permit application is insufficient. Brook Mine readily admits it bears the burden of proof in these

¹ According to Wyo. Stat. Ann. § 35-11-103(e)(xxiv) “‘Deficiency’ means an omission or lack of sufficient information serious enough to preclude correction or compliance by stipulation in the approved permit to be issued by the director[.]”

proceedings, which includes the burden of proving to the Council that its permit application is complete and without deficiencies. *See Brook Mine's Brief on Statutes and Regulations that the Council Must Consider*, p. 10. Yet when objectors identified application deficiencies at hearing, Brook Mine never showed the Council or the objectors where the required information could be found in the permit application, nor did Brook Mine demonstrate that the information contained in the application is accurate and complete. Brook Mine instead attempted to silence or cast doubt on objector testimony, and addressed the identified deficiencies in generalities – affirming the type of information contained in the application, how many pages the application contains, and how long Brook Mine and DEQ personnel spent preparing and reviewing the application. Generalities do not satisfy Brook Mine's burden of proof.

The law requires Brook Mine's permit application to stand on its own. Analytical gaps, missing data and inaccurate information required by law to be included in a surface coal mine permit application simply cannot be remedied with testimonial assurances or by reference to DEQ's review process. Moreover, specific surface coal mine application requirements cannot be satisfied with inaccurate assumptions resulting from limited data taken from a large, data diverse geographic area. Brook Mine's permit application itself must contain the information required by statute and regulation. The required data and analysis is either present in the permit application or it is not. Without establishing that its permit application contains *all* required information, and that *all* the required information is *accurate*, Brook Mine fails to meet its burden as a matter of law.

II. Scope of the Council's Review

As this Council is well aware from prior briefing, the parties disagree as to the proper role of the Council and the scope of its review and decision, particularly as to whether the Council is to consider the requirements of section -406(n) and whether the Council is to direct DEQ to approve or deny Brook Mine's permit application at this time. The Council is now well aware of precedent² and the parties' respective positions on this issue, and Big Horn will not repeat those arguments here. Because the Council has declined to rule on whether it will consider Section -406(n)'s requirements prior to the parties' submission of proposed findings of fact and conclusions of law, Big Horn will present its proposed conclusions of law related to section -406(n) requirements separate from its proposed conclusions of law related to the legal requirements for surface coal mine permit applications found elsewhere in the EQA and the DEQ's Land Quality coal rules and regulations. All parties do seem to agree that the Council must review and consider whether Brook Mine's permit application satisfies Wyo. Stat. Ann. § 35-11-406(a)-(k) and the DEQ's Land Quality coal rules and regulations. *See* Briefs of the Parties in response to the Council's *Briefing Order*, dated June 13, 2017.

III. Scope of Big Horn's Objections to Brook Mine's Permit Application

Brook Mine (also often denominated RAMACO in permit documents or testimony) plans to develop coal resources via both open pit and highwall/auger mining methods. DEQ

² See Exhibit 1 to *Brook Mine's Response Brief to Big Horn Coal's Brief Regarding the Scope of the [EQC's] Review and Request for Oral Argument* (demonstrating that in *The Matter of Objections to Amax Coal Company, Eagle Butte Mine, TFN 1 6/212*, the Council specifically made findings of fact and conclusions of law related to the requirements of Section -406(n), and ordered DEQ to take specific action on the permit application).

Exh. 12, p. 12-192. Big Horn is the owner of surface lands, including valuable improvements and facilities, located within Brook Mine's proposed permit area. BHC Exh. 2; Tr. Vol. IV, p. 840, ln. 7-25, p. 840, ln. 1-18. Big Horn also holds an existing coal mine permit that overlaps Brook Mine's proposed permit area and imposes certain reclamation responsibilities on Big Horn, which are enforceable by DEQ. Tr. Vol. IV, p. 836, ln. 11-16. Big Horn's objections to Brook Mine's permit application therefore are reasonably focused on Brook Mine's proposed operations within this overlapping area, more particularly known as the TR-1 mining area, located in in the SE¼ of Section 15 and the NE¼ of Section 22, Township 57 North, Range 84 West, 6th P.M. *See Figure 1; see also* DEQ Exh. 12, p. 12-134, Tr. Vol. II, p. 204, ln. 10-13.

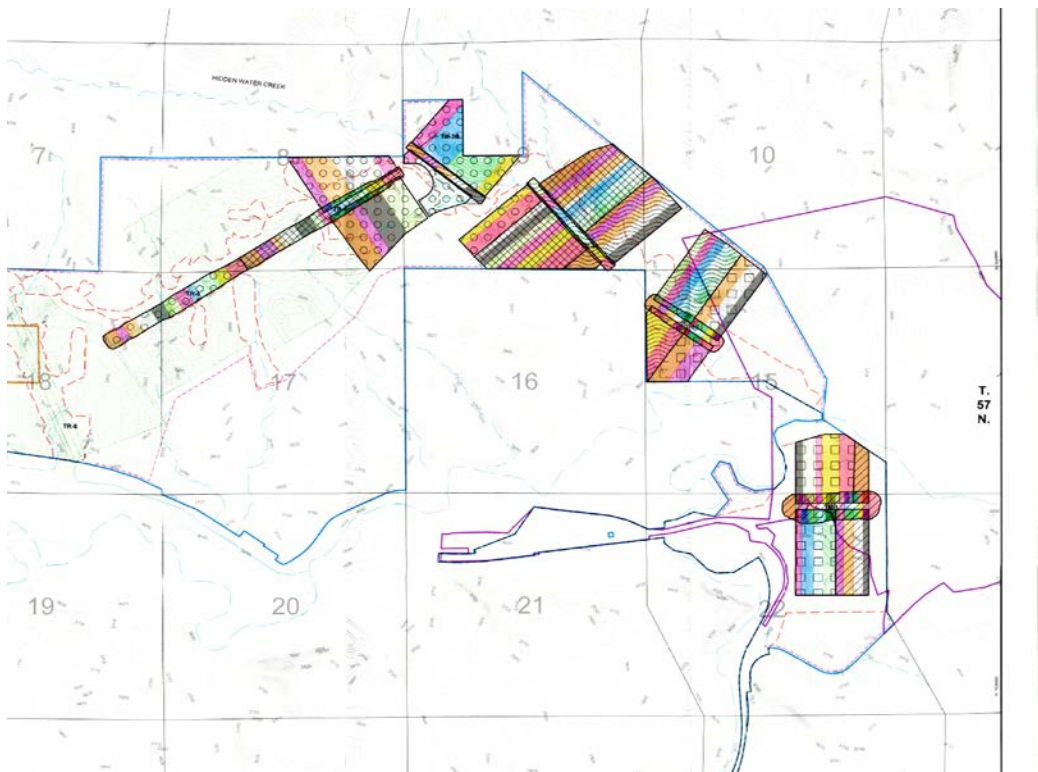


Figure 1. Taken from DEQ Exh. 12, p. 12-134 and showing the TR-1 mining area as the southeastern most mining area.

Evidence of record indisputably demonstrates that Brook Mine failed to provide required, accurate TR-1 area information in its surface coal mine permit application. The evidence further demonstrates that Brook Mine has not satisfied certain legal requirements related to surface water monitoring, underground coal fire analysis and management, overlapping permit boundary analysis and management, and surface owner protection bonding. These requirements must be satisfied prior to permit approval and issuance.

More specifically, Brook Mine's permit application contains and relies on inaccurate, missing or inadequate data and analysis for the TR-1 area, predominantly as it relates to the geology and groundwater located in the overburden above the coal seams Brook Mine proposes to mine. Without complete and accurate information as to the TR-1 area and the projected impacts thereto, and without detailed plans regarding the monitoring of these impacts, it is impossible for Brook Mine, DEQ, Big Horn, or the public to adequately assess Brook Mine's proposed mining operations or the resulting impacts.

The Council cannot fairly or reasonably characterize the flaws in Brook Mine's surface coal mine permit application as minor omissions that can be cured by stipulation or minor permit revisions. *See* Wyo. Stat. Ann. §§ 35-11-103(e)(xxiv); -406(h). The inaccurate, incomplete and missing geologic and hydrologic TR-1 area information constitute legal deficiencies in Brook Mine's permit application. The EQA does not tolerate such deficiencies. The permit application itself must include complete and accurate information, the DEQ must analyze complete and accurate information, and the

public must have the opportunity to review and comment on complete and accurate information *prior to* permit approval. Wyo. Stat. Ann. § 35-11-406(h) – (k).³

Accordingly, the Council must order Brook Mine to cure the deficiencies in its mine permit application by preparing, resubmitting to DEQ, and eventually republishing a legally sufficient surface mine permit application. At the very least, all deficiencies must be cured to the DEQ's and EQC's satisfaction prior to Brook Mine conducting any mining operations.⁴

IV. Relevant Legal Requirements

The following list sets forth the EQA and DEQ Land Quality – Coal Rules and Regulations permit application requirements specifically related to Big Horn's objections.⁵

i. Hydrology and Geology

- **Wyo. Stat. Ann. § 35-11-406(a)(vii)** - A general description of the land which shall include as nearly as possible ... if known, the nature and depth of the overburden, topsoil, subsoil, mineral seams or other deposits and any subsurface waters known to exist above the deepest projected depth of the mining operation.
- **Wyo. Stat. Ann. § 35-11-406(b)(v), (xvi), (xviii)** - A mine and reclamation plan dealing with the extent to which the mining operation will disturb or change the lands

³ Because Brook Mine intends to begin its mining operations in the TR-1 area, *see* DEQ Exh. 12, p. 12-134, any suggestion that Brook should be allowed to gather TR-1 area information and cure the TR-1 related permit application deficiencies following permit approval and/or the initiation of mining operations would risk unforeseen and permanent environmental damage and violate the EQA and DEQ Land Quality Division rules and regulations.

⁴ In its proposed *Conclusions of Law* below, Big Horn provides the Council alternative conclusions in the form of conditions intended to address the deficiencies in Brook Mine's permit application prior to the initiation of mining operations.

To be clear, Big Horn asserts that Brook Mine's permit application is deficient and not eligible for approval under the express provisions of the EQA. Big Horn only offers the proposed conditions as minimal, necessary steps that must be taken in the event the Council orders the DEQ to make its remaining findings and issue the permit.

⁵ All rules and regulations cited herein represent DEQ's, Land Quality – Coal Rules and Regulations. For brevity, the rules and regulations will be referred to herein by Chapter and Section number only.

to be affected and the plan whereby the operator will reclaim the affected lands, to include:

- A map setting forth the drainage plan on, below, above and away from the affected land including subsurface water above the mineral seam to be removed; and further showing the location of all waste water impoundments, any settling ponds, and other water treatment facilities, constructed drainways and natural drainways, and the surface bodies of water receiving this discharge.
 - A statement of the source, quality and quantity of water, if any, to be used in the mining and reclamation operations.
 - A plan to minimize the disturbances to the prevailing hydrologic balance at the minesite and in associated offsite areas and to the quality and quantity of water in surface and ground water systems both during and after mining operations and during reclamation.
- **ENV LQC Ch. 2 § 4(a)(vii), (viii), (x)(A), (xii), (xiv)** - A description of the lands to be affected within the permit area and how these lands will be affected, to include:
- A detailed description of the geology within the proposed permit area down to and including any aquifer⁶ to be adversely affected by mining below the lowest coal seam to be mined, to include structural geology that may influence the required reclamation, and the occurrence, availability, movement, quantity, and quality of potentially affected surface and groundwaters.
 - For the permit area, and adjacent areas, a characterization of the geologic strata down to and including the deeper of either the stratum immediately below the lowest coal seam to be mined, or any aquifer below the lowest coal seam to be mined that may be adversely impacted by mining, to include a statement of the results of test boring holes or core samples collected to show:
 - The location of any groundwater; and
 - Lithologic characteristics and thickness of each stratum and coal seam.
 - A description of the overburden, including the thickness, geological nature or any other factor that will influence the mining or reclamation activities.
 - Complete information on groundwater that may be affected in the permit area or adjacent areas, to include:

⁶ ENV LQC Ch. 1 § 2(j), defines “aquifer” as “a zone, stratum or group of strata that stores and transmits water in sufficient quantities for a specific use.” Nothing in this definition requires that water in a particular zone or stratum be currently used in order to qualify as an aquifer.

- An estimate of the depth and quantity of any groundwater existing in the proposed permit area down to and including the strata immediately below the lowest mineral seam to be mined, for which the operator may be required to conduct testing in order to determine the exact depth, quantity and quality of groundwater in geological formations affected by the mining operations;
 - The lithology and thickness of all known aquifers; and
 - The recharge, storage, and discharge characteristics of the groundwater, all according to the parameters and detail required by the Administrator of the Land Quality Division.
- A description of the surface water and groundwater and related geology in the permit area and general area sufficient to assess the probable hydrologic consequences (PHC). And if the determination of the PHC required by Chapter 19, Section 2(a)(i) indicates that adverse impacts on or off the proposed permit area may occur to the hydrologic balance, then information supplemental to that required under (a)(xi) and (a)(xii) of this Section (requiring complete surface and groundwater information) must be provided to evaluate such PHC and to plan remedial and reclamation activities.
- **ENV LQC Ch. 2 § 5(a)(x)** - A determination of the PHC of the proposed operation on the hydrologic regime and the quantity and quality of surface water and groundwater systems within the permit area and the general area consistent with the information required in Chapter 19, Section 2. The PHC determination shall be based on baseline hydrologic, geologic and other information collected for the permit application and may include data statistically representative of the site. This determination shall specifically address potential adverse hydrologic consequences and describe preventive and remedial measures.
- **ENV LQC Ch. 2 § 5(a)(ix)(C), (D)** - A plan to ensure the protection of the quantity and quality of, and rights to, surface water and groundwater both within and adjacent to the permit area, to include:
 - A plan to restore the approximate recharge capacity of the permit area in accordance with Chapter 4, Section 2(h), which requires the groundwater recharge capacity of reclaimed lands to be restored to a condition that provides a recharge rate approximating the pre-mining recharge rate; and
 - A Surface Water Monitoring Plan based on the PHC determination and the analysis of all baseline hydrologic, geologic, and other information in the permit application.
 - The plan must provide for the monitoring of parameters that relate to the suitability of the surface water for current and approved postmining

land uses and to the objectives for protection of the hydrologic balance as set forth in subsection 5(a)(ix) of Chapter 2.

- The plan must identify the surface water quantity and quality parameters to be monitored, sampling frequency, and site locations, and describe how the data may be used to determine the impacts of the operation upon the hydrologic balance.
- A Ground Water Monitoring Plan based on the PHC determination and the analysis of all baseline hydrologic, geologic, and other information in the permit application.
 - The plan must provide for the monitoring of parameters that relate to the suitability of the groundwater for current and approved postmining land uses and to the objectives for protection of the hydrologic balance set forth in subsection 5(a)(ix) of Chapter 2.
 - The plan must identify the quantity and quality parameters to be monitored, sampling frequency, and site locations, and describe how the data may be used to determine the impacts of the operation upon the hydrologic balance.
- **ENV LQC Ch. 2 § 6(b)** - A reclamation plan that describes how the operator will reclaim the affected lands to the proposed postmining land use in accordance with Chapter 4, Section 2(a), which requires restoration of the land to a condition equal to or greater than the highest previous use.
- **ENV LQC Ch. 19 § 2(a)(i)** - A determination of the projected result of proposed surface coal mining and reclamation operations, both on and off the mine site, which may reasonably be expected to change the quantity or quality of the surface and groundwater; the surface and groundwater flow, timing and availability, the surface and groundwater quality under seasonal flow conditions, including dissolved and suspended solids; and the stream channel conditions. This information shall be in sufficient detail to enable the Administrator of the Land Quality Division to determine the probable cumulative hydrologic impacts on surface and groundwater systems including the impacts resulting from the proposed operation and their interaction with the impacts of all anticipated mining upon all affected hydrologic systems.
 - ii. Underground Coal Fires
- **Wyo. Stat. Ann. § 35-11-406(b)(ix), (xiii)** – A plan for insuring that materials constituting a fire, health or safety hazard uncovered during or created by the mining process are promptly treated or disposed of during the mining process in a manner designed to prevent threats to human or animal health and safety, as well as procedures

proposed to avoid constituting a public nuisance, endangering the public safety, human or animal life.

- **ENV LQC Ch. 2 § 5(a)(iv)** – Contingency plans which have been developed to preclude sustained combustion of any materials constituting a fire hazard.

iii. Blasting Operations

- **Wyo. Stat. Ann. § 35-11-415(b)(xii)(E)** – surface coal mining operators **must**, upon request of a resident or owner, conduct a pre-blasting survey of any man-made dwelling or structure within one-half (1/2) mile of any portion of the permitted area.

iv. Overlapping Permits and Related Agreements

- **ENV LQC CH. 2 § 5(a)(xviii)** – Plans of mine facilities (including overstrip areas) that are to be shared by two or more separately permitted mining operations may be included in one permit application and referenced in the other application(s). Each permittee shall bond the mine facilities unless the permittees sharing it agree to another arrangement for assuming their respective responsibilities. If such agreement is reached, the application shall include a copy of the agreement between or among the parties setting forth the respective bonding responsibilities of each party for the mine facilities.

v. Surface Owner Protection Bond

- **Wyo. Stat. Ann. § 35-11-416(a)** - Where the surface owner is not the owner of the mineral estate proposed to be mined by mining operations, a permit shall not be issued without the execution of a bond or undertaking to the state for the use and benefit of the surface owner or owners of the land, in an amount sufficient to secure the payment for any damages to the surface estate, to the crops and forage, or to the tangible improvements of the surface owner. The amount of the bond shall be determined by the administrator and shall be commensurate with the reasonable value of the surrounding land, and the effect of the overall operation of the landowner. Financial loss resulting from disruption of the surface owner's operation shall be considered as part of the damage.

vi. Wyo. Stat. Ann. § 35-11-406(n) Requirements

- **Wyo. Stat. Ann. § 35-11-406(n)** – The permit applicant must establish that its permit application is in compliance with the EQA and all applicable state laws. No surface coal mining permit shall be approved unless the applicant affirmatively demonstrates and the administrator finds in writing:
 - The application is accurate and complete;

- The reclamation plan can accomplish reclamation as required by the EQA;
- The proposed operation has been designed to prevent material damage to the hydrologic balance outside the permit area.

PROPOSED FINDINGS OF FACT

1. This matter arises from the application of Brook Mining Company, LLC (“Brook Mine”) to the Department of Environmental Quality (“DEQ”), Land Quality Division (“LQD”), for a permit to conduct surface coal mining activities.

2. DEQ/LQD determined Brook Mine’s permit application, TFN 6 2-025, complete and suitable for publication pursuant to Wyo. Stat. Ann. § 35-11-406(h). In accordance with Wyo. Stat. Ann. § 35-11-406(j) and (k), the permit was published to the public and interested parties were required to submit written objections to the application by January 27, 2017. *See Big Horn’s Response to Brook Mine’s Motion to Dismiss Big Horn Coal Company’s Petition for a Contested Case Hearing*, Exhibit D.

3. Objectors in this case, Big Horn Coal Company (“Big Horn”), Powder River Basin Resource Council (“PRBRC”), and Mary Brezik-Fisher and David Fisher, submitted timely objections to the application. *See* BHC Exh. 3; Fisher Exh. 26; PRBRC Exh. 1.

4. Objectors requested an informal conference. DEQ denied these requests, leading to this contested case proceeding. *See Big Horn’s Response to Brook Mine’s Motion to Dismiss Big Horn Coal Company’s Petition for a Contested Case Hearing*, Exhibit A.

5. The Environmental Quality Council (“EQC” or “Council”) conducted a seven (7) day contested case hearing in this matter, receiving evidence regarding the permit

application contents, proposed operations, characteristics of the proposed permit lands, and possible impacts from the proposed operations.

6. Big Horn owns lands and facilities within and immediately adjacent to Brook Mine's proposed permit boundary, particularly the TR-1 mining area and the southeastern portion of the proposed mining area. BHC Exh. 2; Tr. Vol. IV, p. 840, ln. 7-25, p. 840, ln. 1-18. Big Horn owns and operates an industrial shop, rail loadout facility, bridge, access road, and railroad spur on the referenced lands. Big Horn also holds a state coal lease on S½ Section 23 and the N½ Section 26, Township 57 North, Range 84 West, 6th P.M. BHC Exh. 2; *see generally* Tr. Vol. IV, pp. 839-841.

7. Big Horn currently leases its shop to multiple tenants for industrial use and storage. Tr. Vol IV, p. 861, ln. 3-5.

8. Big Horn also holds an existing mining permit, No. 213-T8, that overlaps lands included in Brook Mine's proposed permit boundary. BHC Exh. 2; Tr. Vol. I, p. 78, ln. 7-10. Big Horn maintains a reclamation performance bond with DEQ/LQD on approximately 25 acres of land within Brook Mine's proposed permit boundary. BHC Exh. 5; Tr. Vol. IV, p. 863, ln. 18-22.

9. In its objection letter and at hearing, Big Horn, along with other Objectors, asserted that Brook Mine's permit application fails to meet applicable legal requirements found in the Environmental Quality Act ("EQA"), Wyo. Stat. Ann. §§ 35-11-101 *et seq.*, and DEQ/LQD—Coal Rules and Regulations. BHC Exh. 3. Big Horn primarily focused its objections on the area of the proposed mine overlapping and adjacent to its current

property and facilities, particularly the TR-1 mining area. *See* BHC Exh. 2; Tr. Vol. IV, pp. 841-843; *see generally* Tr. Vol. I-VII.

TR-1 Mining Area and Related Geology and Hydrology

10. Brook Mine proposes to begin mining operations in the TR-1 mining area. *See* DEQ Exh. 12, p. 12-134.

11. The TR-1 mining area is located entirely in the SE¼ of Section 15 and the NE¼ of Section 22, Township 57 North, Range 84 West, 6th P.M., where Brook Mine proposes to cut a highwall trench through the overburden above the targeted coal seams. *See* DEQ Exh. 12, p. 12-134; Tr. Vol. II, p. 204, ln. 10-20.

12. The overburden in the TR-1 mining area is geologically and hydrologically unique and can be distinguished from the overburden in the proposed permit area outside the TR-1 mining area. The TR-1 area overburden is composed of previously mined backfill material and is saturated with groundwater. DEQ Exh. 5, p. 5-014; Tr. Vol. II, p. 205, ln. 8-21, p. 211, ln. 24-25, p. 212, ln. 1-8, p. 214, ln. 7-24.

13. In order to gather data as to the geology in the proposed permit area, including overburden geology, Brook Mine conducted a drilling program consisting of a series of drill holes across the proposed permit area. *See* DEQ Exh. 5 at pp. 5-015, 5-054 through 5-164; Tr. Vol I, p. 87, ln. 6-17, p. 91, ln. 6-10. The drill hole data is found in the permit application at Addendum D5-2. DEQ Exh. 5 at pp. 5-015, 5-054 through 5-164.

14. Brook Mine conducted drill hole testing on a tighter configuration than DEQ's typical 160-acre spacing requirement. Tr. Vol. I, p. 48, ln. 9-10; p. 91, ln. 18-25; p. 92, ln. 1.

15. Brook Mine did not conduct drill hole testing in the TR-1 mining area, nor did it conduct drill hole testing in any part of the approximately 360 acres comprising the SE¹/₄ of Section 15 and the NE¹/₄ of Section 22, Township 57 North, Range 84 West. The permit application contains no geologic data from the distinct overburden within these lands. *See* DEQ Exh. 5, p. 5-054 through 5-164; Tr. Vol. II, p. 210, ln. 5-25, p. 211, ln. 1-23.

16. Brook Mine's permit application does not distinguish the TR-1 area overburden, and does not include specific geological characterization or identification of the TR-1 area overburden, including its geologic strata, nature, structural geology, lithology, thickness, or other factors that may influence mining or reclamation activities. *See* Tr. Vol. II, p. 209 – 211.

17. DEQ/LQD indicated that it intends to impose a permit condition requiring Brook Mine to gather overburden data from the TR-1 area prior to conducting any mining activity or creating any disturbance. Tr. Vol. I, p. 92, ln. 16-23. No such condition is referenced in the permit application or has otherwise been memorialized. *See* Tr. Vol. I, p. 65 ln. 18-25 (stating that DEQ Exh. 1, p. 1-053 contains the location of permit conditions); DEQ Exh. 1, p. 1-053 (showing no current permit conditions placed upon the permit application).

18. Appendix D6 of the permit application (DEQ Exh. 6) contains hydrologic information, including groundwater information. Tr. Vol. I, p. 93, ln. 17-23. Additional groundwater information is located in the Mine Plan, and its groundwater model. *See* DEQ Exh. 12.

19. Appendix D6 of the permit application characterizes the overburden as a whole, repeatedly describing the overburden within the entirety of the proposed permit area as “dry.” *See* DEQ Exh. 6, p. 23-27.

20. The permit application does not characterize any part of the overburden within the proposed permit area as a “potential hydrogeologic unit,” and concedes that Brook Mine installed no groundwater monitor wells and conducted no aquifer tests in any part of the overburden. *Id.*

21. In characterizing all overburden within the proposed permit area as “dry,” the permit application specifically relies on the drill hole logs and data found in Addendum D5-2, which is devoid of data from the TR-1 mining area. *Id.*; DEQ Exh. 5, p. 5-054 through 5-164; Tr. Vol. II, p. 210, ln. 5-25, p. 211, ln. 1-23.

22. DEQ witnesses Kristiansen and Kuchanur, and Big Horn witness Gerlach, all testified that unlike the overburden in the rest of the proposed permit area, the TR-1 area overburden consists of previously mined backfill material, and that this material is saturated with groundwater. *See* Tr. Vol. II, p. 211, ln. 24-25, p. 212, ln. 1-8, p. 214, ln. 7-24; Tr. Vol. III, p. 507, ln. 3-9; Tr. Vol. IV, p. 927-934; *see also* BHC Exh. 8, 9.

23. Nowhere does the permit application differentiate between the previously mined TR-1 area overburden and the overburden in other proposed mining areas which consist of native strata. Tr. Vol. II, p. 205, ln. 8-21, p. 212, ln. 6-19.

24. Brook Mine witness Barron testified that he does not know whether there is groundwater in the TR-1 overburden, Tr. Vol. IV, p. 720, ln. 11-23, and admitted that no

part of Brook Mine's permit application specifically addresses the TR-1 overburden or its groundwater saturation. Tr. Vol. IV, p. 717, ln. 1-4.

25. DEQ witness Kristiansen conceded that the permit application lacks required information as to the TR-1 overburden and its groundwater saturation, and that that the permit application inaccurately characterizes all overburden within the proposed permit area as dry. Tr. Vol. II, p. 214, ln 12-24, p. 216, ln 12-25, p. 217, ln 1-17.

26. Brook Mine's permit application fails to describe groundwater in the TR-1 area overburden. The permit application contains no site-specific data regarding groundwater location, quantity, quality, lithology, or thickness; or its recharge, storage, or discharge characteristics within the TR-1 area overburden. *See* Tr. Vol. II, p. 212, ln. 6-19; Tr. Vol. IV, p. 717, ln. 1-4, p. 720, ln. 19-23.

27. The permit application addresses "Probable Hydrologic Impacts" in section MP.6; groundwater impacts are specifically addressed in section MP.6.2. DEQ Exh. 5, p. 12-055, -059.

28. Section MP.6.2 of the permit application states that mining impacts to the groundwater found in the coal seams, including drawdown and pit inflows, are predicted and discussed in the groundwater model utilized by Brook Mine. *Id.* at 12-060.

29. As to the overburden, section MP 6.2 assumes that the overburden is dry and states that drawdown of groundwater in the overburden was not modeled. *Id.*

30. Brook Mine's "Operation Monitoring Program" is found in the permit application in section MP.7, with groundwater monitoring described in section MP.7.2. *Id.* at 12-062, -064 through -065.

31. Section MP 7.2 of the permit application states, “[g]roundwater monitoring during mining operations will be a continuation of the monitoring program” discussed in Appendix D6. *Id.* at 12-064. Appendix D6 states that no monitor wells exist to monitor the overburden. DEQ Exh. 6, p. 6-023 through -027.

32. The permit application contains no description or assessment of the hydrologic impacts of the proposed mining operations to the groundwater in the TR-1 overburden, and provides no plan whereby Brook Mine will monitor the hydrologic impacts of the proposed mining operations on groundwater in the TR-1 area overburden. *See generally* DEQ Exh. 5 and 12; *see also* Tr. Vol. IV, p. 717, ln. 1-4.

33. The groundwater model utilized by Brook Mine to support its permit application is discussed in Addendum MP-3 of the Mine Plan. DEQ Exh. 12, p. 12-183 through -294.

34. The groundwater model was designed to analyze the potential cumulative hydrological effects of the project and simulate the regional groundwater impacts from the proposed mining operations. DEQ Exh. 12, p. 12-184, -192.

35. The hydrogeologic data used in the groundwater model was limited to observation points, monitor wells and pumping tests, and private well information obtained from the State Engineers Office database. *Id.* at pp. 12-192, -194, -264. None of these data sources provide information as to the unique textural and hydraulic characteristics of the saturated backfill in the TR-1 area overburden. *See generally* DEQ Exh. 12, p. 12-183 through -294; *see also* Tr. Vol. III, p. 513, ln. 11-19; BHC Exh. 9, p. 6.

36. The groundwater model primarily focuses on the Carney and Masters coal seams; treats all overburden within the proposed permit area as dry, native strata; does not utilize any site-specific hydraulic conductivity information from the TR-1 area overburden; and does not model any drawdowns in the TR-1 overburden resulting from mining operations. DEQ Exh. 12, pp. 12-060, -197, -205, -206; BHC Exh. 9, p. 6.

37. The TR-1 area is spatially contained within the geographic area examined by the groundwater model; however, by assuming all overburden in the proposed permit area is dry, impacts to the groundwater in the TR-1 area overburden were not accurately modeled. *See generally* DEQ Exh. 12, p. 12-183 through -294.

38. Brook Mine's permit application states that mining operations will use and rely on pit inflows as a source of water. DEQ Exh. 12, p. 12-066. The application estimates that the proposed mining operations will use approximately 53,000 gallons of water per day (approximately 37 gallons per minute) from pit inflows and states that the estimated inflow amounts are demonstrated in the groundwater model in Addendum MP-3. DEQ Exh. 12, p. 12-116. The groundwater model estimates pit inflows at anywhere between 100 gallons per minute to 0.03 gallons per minute for the life of the mine. *Id.* at 12-254.

39. To facilitate its use of pit inflow water, Brook Mine proposed to place a pump in the TR-1 trench cut to pump out water for operations use for the life of the mine. DEQ Exh. 12, p. 12-052; Tr. Vol. III, p. 556, ln. 1-15.

40. DEQ witness Kuchanur testified that once Brook Mine excavates the trench cut in the TR-1 mining area, groundwater from the TR-1 overburden will flow into the trench cut and mine panels. Tr. Vol. III, p. 556, ln. 1-15.

41. The groundwater model does not accurately reflect or identify the groundwater in the TR-1 overburden, and does not accurately simulate the pit inflows from the TR-1 overburden. *See generally* DEQ Exh. 12, p. 12-183 through -294; *see also* Tr. Vol. IV, p. 717, ln. 1-4.

42. Brook Mine's permit application contemplates the use of groundwater found in the coal seams as a source of water to be used from pit inflows. *See* DEQ Exh. 12, p. 12-254. The permit application never acknowledges any use of the groundwater in the TR-1 overburden, does not identify this groundwater as a source of water for mine operations, and the quality and quantity of water to be used from this source is a complete unknown. *See generally* DEQ Exh. 12.

43. Appendix D6, section D6.2.2.5, of the permit application addresses recharge areas. The permit application does not specifically describe any recharge characteristics of the overburden generally, nor the TR-1 area specifically. DEQ Exh. 6, p. 6-029 through -031. Appendix D.6 of the permit application characterizes all overburden as dry, and relies on the groundwater model found at Addendum MP-3 for any detail concerning groundwater recharge. *Id.*

44. The groundwater model is devoid of any TR-1 overburden data and characterizes recharge in the overburden, generally, as having a uniform recharge rate of between 0.00000012 ft/day/ft² and 0.00008 ft/day/ft² and 0.0005 and 0.35 inches per year. DEQ Exh. 12, p. 12-221.

45. Upon review of materials not in or referenced by the permit application, DEQ witness Kuchanur estimated the TR-1 overburden recharge rate at 0.06 CFS. *See* Tr. Vol VII, p. 1470, ln. 1-16; p. 1471, ln. 14-15.

46. The groundwater in the TR-1 overburden is currently held in place by a low permeability, shale aquitard, or barrier, which physically separates the groundwater located in the overburden from the groundwater located in the coal seams. Tr. Vol. III, p. 508, ln. 2-25, p. 509, ln. 1.

47. In order to access the targeted coal seams, the proposed mining operations in the TR-1 area will excavate and cut through the shale barrier and allow the TR-1 overburden groundwater to flow directly into the trench and mining panels. *Id.*; *see also id* at p. 556, ln. 1-15.

48. Neither the permit application nor the groundwater model contains any data or analysis regarding whether and how Brook Mine will be able to restore the recharge rate of the groundwater in the TR-1 overburden after mining operations cease. *See generally* DEQ Exh. 6, 12 and 13.

Surface Water Monitoring

49. DEQ witness Kunze conceded that Brook Mine needs to revise the number and location of surface water monitor wells proposed in the permit application for the Tongue River. Tr. Vol. II, p. 411, ln. 18-25, p. 412, ln. 1-12.

50. In order to adequately monitor mining impacts on the Tongue River, one monitor well needs to be placed further upstream on the Tongue River, near the furthest upstream point within the proposed permit area; an additional monitor well should be

placed near the proposed permit boundary on the Tongue River a short distance downstream from the confluence of the Tongue River and Goose Creek; and another additional monitor well should be placed on Goose Creek. *Id.*

51. DEQ policy requires permit applications to contain pre-mining monitoring and studies of both surface and groundwater to include monitoring data for a one year period, at minimum. *See* DEQ Exh. 22, pp. 3, 5, 15, 16; *see also* Tr. Vol. II, p. 395, ln. 9-17.

52. The TR-1 mining area is located immediately adjacent to both the Tongue River and Goose Creek, and the confluence of the two surface water bodies. DEQ Ex. 12, p. 12-134; Tr. Vol. II, p. 204, ln. 25, p. 205, ln. 1-7.

53. The permit application does not discuss or analyze whether or to what extent the groundwater in the TR-1 overburden is hydrologically connected to the Tongue River or Goose Creek. *See generally* DEQ Exh. 5 and 12.

54. The evidence suggests a direct hydrological connection exists between the groundwater in the TR-1 overburden and the Tongue River. Tr. Vol. III, p. 498, ln. 19-25, p. 499, ln. 1-19; Tr. Vol. IV, p. 936, ln. 5-11; BHC Exh. 9.

55. Absent information in the permit application regarding the nature and extent of the hydrologic connection between the TR-1 overburden and the Tongue River, it is impossible for Brook Mine or DEQ to determine if or to what extent mining through the saturated TR-1 overburden will adversely impact the Tongue River. *See* Tr. Vol. II, p. 420, ln. 7-19.

56. Neither the monitor wells identified in Brook Mine's permit application nor the additional monitor wells DEQ proposed at hearing will adequately monitor impacts to the Tongue River from mining through the saturated overburden in the TR-1 area. *See* DEQ Exh. 12, p. 12-062 through -064, -112; *see also* Tr. Vol. II, p. 411, ln. 18-25, p. 412, ln. 1-15; DEQ Exh. 6 and 12 *generally*. An additional monitor well on the Tongue River, just north of the TR-1 mining area, is necessary to adequately monitor impacts to the Tongue River from mining in the TR-1 area. *See* DEQ Exh. 12, p. 12-062 through -064, -0112; Tr. Vol. II, p. 420, ln. 7-19.

Access to the TR-1 Area for Testing

57. Brook Mine had legal authority to enter Big Horn property, including the TR-1 area, to conduct exploration and data recovery operations from July 2012 through July 2014, pursuant to an exploration agreement with Big Horn. Tr. Vol. IV, p. 847, ln. 9-16.

58. Brook Mine was gathering information for its permit application, including gathering geology information, and placing monitor and observation wells outside the TR-1 area, during this same period. *See* Tr. Vol. I, p. 51, ln. 18-25.

59. Brook Mine apparently chose not to gather information from the TR-1 mining area during the term of its agreement with Big Horn. *See generally* DEQ Exh. 1-13.

60. Brook Mine allowed its exploration agreement with Big Horn to expire, and never subsequently sought permission to enter Big Horn's property to conduct testing or gather information. Tr. Vol. IV, p. 848, ln. 1-9, p. 855, ln. 17-20.

61. After the expiration of the exploration agreement, and without notice to or permission from Big Horn, Brook Mine sent drilling rigs to Big Horn property. Big Horn discovered unauthorized drilling rigs on its property and contacted law enforcement, which instructed the drilling rig operator to leave Big Horn property. *Id.* at p. 848, ln. 10-25, p. 849, ln. 1-25, p. 850, ln. 1-4.

62. There is no evidence in the record that it was not possible for Brook Mine to acquire geologic or hydrologic information from the TR-1 area.

Underground Coal Fires

63. There is a history of underground coal fires in the proposed permit area. *See* Tr. Vol. II, p. 334, ln. 2-5.

64. Brook Mine acknowledged at hearing that coal fires may exist within the proposed permit boundary. Tr. Vol. IV, p. 722, ln. 16-21.

65. Brook Mine has not conducted any survey or examination of coal fires in the proposed permit area; and the permit application contains no information to support Brook Mine's testimony at hearing that although coal fires may exist, it believes no underground coal fires exist in the proposed permit area. *Id.* at p. 716, ln. 4-17.

Blasting Protections Afforded to Surface Owners

66. At hearing, Big Horn witness Sweeney requested a pre-blasting survey pursuant to Wyo. Stat. Ann. § 35-11-415(b)(xi)(E), and seismic monitoring for Big Horn's shop and other infrastructure located within the proposed permit area. Tr. Vol. IV, p. 860, ln. 17-25, p. 861, ln. 1-16.

67. DEQ and Brook Mine representatives testified that on request from a resident within one half-mile of the proposed permit boundary, seismic monitors could be placed near structures to measure the ongoing impacts from blasting. Tr. Vol. III, p. 618, ln. 12-25, p. 619, ln. 1-2.; Tr. Vol. IV, p. 770, ln. 20-25, p. 771, ln. 1-5, p. 783, ln. 5-19.

Overlapping Permit Boundaries and Related Agreements

68. Brook Mine's permit application states that Big Horn's "permit boundary [is] within Brook Mine's permit boundary," that "all mining operations are covered under individual Permits to Mine," and "[a]greements between the permittees are located in the Adjudication File." DEQ Exh. 12, p. 12-088. In its Reclamation Plan, the permit application states that "the last party to disturb an area will have final reclamation responsibility on the disturbed dual permitted lands." DEQ Exh. 13, p. 13-075.

69. Big Horn requires access to the overlapping property as a landowner with tenants and as a permit holder with outstanding reclamation responsibilities. *See* Tr. Vol. IV, p. 870, ln. 14-21.

70. When two or more parties have overlapping surface coal mine permits, the permit documents may specifically reference any agreements between the parties and expressly provide that each party is only responsible for reclamation resulting from its own disturbance. BHC Exh. 5 and 6.

71. There are no operational, surface use, or overlapping permit boundary agreements between Brook Mine and Big Horn Coal. Tr. Vol. IV, p. 865, ln. 9-15. Brook Mine's permit application incorrectly implies there is an agreement between Brook Mine and Big Horn in the adjudication file. *See* DEQ Exh. 12, p. 12-088.

72. Brook Mine's permit application states that "the last party to disturb an area will have final reclamation responsibility on the disturbed dual permitted lands" rather than stating as DEQ witness Kristiansen conceded, that each party will be responsible for reclamation and maintaining a reclamation bond only as to that party's facilities, operations, and disturbances. *See* DEQ Exh. 13, p. 13-075; Tr. Vol. II, p. 188, ln. 20-25, p. 189, ln. 1-25, p. 190, ln. 1-16.

Surface Owner Protection Bond

73. Brook Mine has not yet submitted a surface owner protection bond to DEQ, as required by Wyo. Stat. Ann. § 35-11-416(a), for the use and benefit of Big Horn as a surface owner within the proposed permit area. *See* Tr. Vol. II, p. 200, ln. 9-25, p. 201, ln. 1.

74. DEQ assured Big Horn that it will determine the amount of the surface owner protection bond prior to permit issuance and only after participation and input from Big Horn. Tr. Vol. II, p. 201, ln. 8-25, p. 202, ln. 1-4.

PROPOSED CONCLUSIONS OF LAW

1. The Council has jurisdiction over this matter pursuant to Wyo. Stat. Ann. §§ 35-11-406(k) and -112(a).

2. EQC conducted the contested case hearing pursuant to DEQ, Practice and Procedure Rules, Chapter 2.

3. Pursuant to the Environmental Quality Act, Wyo. Stat. Ann. §§ 35-11-101 *et seq.*, and applicable Department of Environmental Quality, Land Quality Division, Coal Rules and Regulations, Brook Mine's permit application must contain specific information,

data and other substantive content and analysis regarding the proposed surface coal mining operations, the land and water to be affected, foreseeable impacts from the proposed mining operations, and how the foreseeable impacts will be monitored, minimized and reclaimed.

4. The Council must determine whether Brook Mine has affirmatively established that its permit application contains all legal requirement imposed by the Environmental Quality Act, Wyo. Stat. Ann. §§ 35-11-101 *et seq.*, and applicable Department of Environmental Quality, Land Quality Division, Coal Rules and Regulations.

5. The Council also must determine whether Brook Mine has met its specific burden under Wyo. Stat. Ann. § 35-11-406(n) necessary for approval of its permit application, and, based on that determination, direct DEQ to either issue or deny Brook Mine a permit after making the requisite written findings.

6. **Wyo. Stat. Ann. § 35-11-406(a)(vii) and DEQ, Land Quality Coal Rules, Ch. 2, Section 4(a)(vii), (viii), (x)** require a surface coal mining permit application to provide a general description of the land, including the nature of the overburden, a detailed description of the geology down to the lowest coal seam to be mined, a characterization of the geologic strata down to the lowest coal seam to be mined, the lithological characteristics of each stratum, and a description of any factor in the overburden that will influence mining or reclamation activities.

7. Brook Mine's permit application fails to provide complete and accurate information required by Wyo. Stat. Ann. § 35-11-406(a)(vii) and DEQ, Land Quality Coal Rules, Ch. 2, Section 4(a)(vii), (viii), (x) as to the overburden in the TR-1 mining area.

Descriptions and characterizations in the form of assumptions or based on an extrapolation of data from geographically and geologically distinct areas fail to satisfy these statutory and regulatory requirements.

8. DEQ must either deny the permit application, or require Brook Mine to include the complete and accurate TR-1 specific geologic data and analysis in its permit application, resubmit its application to DEQ and, after approval, re-publish notice of its complete application allowing interested persons to file written objections, pursuant to Wyo. Stat. Ann. § 35-11-406(h)-(k).

—In the alternative, and without waiving BHC's stated position that the application must be denied and resubmitted, if the EQC elects to direct DEQ to impose permit conditions:⁷

DEQ shall issue the permit with an express written condition that, prior to conducting any mining operations, Brook Mine must obtain and analyze TR-1 overburden samples and provide all such data and analysis to DEQ for review and approval in accordance with the applicable statutes and DEQ-Land Quality Coal Rules and Regulations.

9. **Wyo. Stat. Ann. § 35-11-406(a)(vii) and DEQ, Land Quality Coal Rules, Ch. 2, Section 4(a)(vii), (viii), (xii)** require a surface coal mining permit application to provide a description of any subsurface waters known to exist above the deepest projected

⁷ See *supra* Note 4. All alternative Conclusions of Law proposing permit conditions are provided by Big Horn with this same caveat that Big Horn first and foremost asserts that the permit application submitted by Brook Mine is deficient and must be either denied or sent back to Brook Mine to remedy these deficiencies, resubmit the application to DEQ for approval, and re-publish for public review pursuant to Wyo. Stat. Ann. § 35-11-406(h)-(k).

depth of the mining operation; the occurrence, availability, quality and quantity of potentially affected groundwaters; the location of any groundwater; and complete information of groundwater that may be affected in the permit area, including the lithology and thickness of known aquifers and the recharge, storage and discharge characteristics of the groundwater.

10. Brook Mine's permit application fails to provide complete and accurate information required by Wyo. Stat. Ann. § 35-11-406(a)(vii) and DEQ, Land Quality Coal Rules, Ch. 2, Section 4(a)(vii), (viii), (xii), as it fails to identify or describe any groundwater in the TR-1 mining area overburden.

11. DEQ must either deny the permit application, or require Brook Mine to include the complete and accurate TR-1 specific groundwater information and analysis in its permit application, resubmit its application to DEQ and, after approval, re-publish notice of its complete application allowing interested persons to file written objections, pursuant to Wyo. Stat. Ann. § 35-11-406(h)-(k).

—In the Alternative—

DEQ shall issue the permit with an express written condition that, prior to conducting any mining operations, Brook Mine must obtain and analyze additional groundwater information from the TR-1 area overburden and provide all such data and analysis to DEQ for review and approval in accordance with the applicable statutes and DEQ-Land Quality Coal Rules and Regulations.

12. **Wyo. Stat. Ann. § 35-11-406(b)(xvi)** requires a surface coal mining permit application to contain a statement of the source, quality, and quantity of any water to be used in mining or reclamation operations.

13. Brook Mine's permit application fails to provide complete and accurate information required by Wyo. Stat. Ann. § 35-11-406(b)(xvi), as it fails to identify the groundwater in the TR-1 overburden as a source of water for its proposed operations and similarly fails to identify the quality of that water or the quantity to be used in its mining or reclamation operations.

14. DEQ must either deny the permit application, or require Brook Mine to include the complete and accurate information and analysis regarding the TR-1 as a specific water source in its permit application, resubmit its application to DEQ and, after approval, re-publish notice of its complete application allowing interested persons to file written objections, pursuant to Wyo. Stat. Ann. § 35-11-406(h)-(k).

—In the Alternative—

DEQ shall issue the permit with the express written conditions that:

(1) prior to conducting any mining operations, Brook Mine must identify all water sources to be used in its proposed mining and reclamation operations, including groundwater from the TR-1 overburden, by geologic source, including quality and quantity characteristics, and submit this data and analysis to DEQ for review and approval in accordance with applicable statutes and DEQ-Land Quality Coal Rules and Regulations; and

(2) after the conclusion of mining operations in the TR-1 area, the TR-1 trench must be reclaimed without delay, in accordance with applicable law, and may not remain open for use as a source of water for subsequent mining operations on adjacent lands.

15. **Wyo. Stat. Ann. § 35-11-406(b)(xviii) and DEQ, Land Quality Coal Rules, Ch. 2, Section 4(a)(xiv), Section 5(a)(x), Chapter 19 Section 2(a)** require a surface coal mining permit application to contain a plan to minimize disturbances to the prevailing hydrologic balance at the minesite and associated offsite areas and to the quality and quantity of surface and groundwater systems both during and after mining operations; a description of the groundwater and related geology in the permit area sufficient to assess the probable hydrologic consequences; a determination of the probable hydrologic consequences of the proposed operation on the hydrologic regime and the quantity and quality of surface and groundwater systems within the permit area; and a determination of the projected result of the proposed surface coal mining and reclamation operations, which may be expected to change the quality or quantity of the surface and groundwater, its flow, timing and availability, all in sufficient detail to enable the Administrator of the Land Quality Division to determine the probable cumulative hydrologic impacts on surface and groundwater systems.

16. Brook Mine's permit application fails to meet the requirements of Wyo. Stat. Ann. § 35-11-406(b)(xviii) and DEQ, Land Quality Coal Rules, Ch. 2, Section 4(a)(xiv), Section 5(a)(x), Chapter 19 Section 2(a), specifically, as to the lack of any plan or assessment related to probable impacts from mining through the TR-1 overburden, and

any probable change in the quality or quantity of the surface or groundwater in that area, its flow, timing or availability.

17. DEQ must either deny the permit application, or require Brook Mine to include sufficiently detailed, site-specific groundwater data for the TR-1 overburden in its permit application, including the anticipated impacts from mining the TR-1 area on ground and surface waters, resubmit its application to DEQ and, after approval, re-publish notice of its complete application allowing interested persons to file written objections, pursuant to Wyo. Stat. Ann. § 35-11-406(h)-(k).

—In the Alternative—

DEQ shall issue the permit with an express written condition that, prior to conducting any mining operations, Brook Mine must provide a surface and groundwater impact analysis (during-mining and post-mining) that incorporates site-specific textural and hydrological data in the TR-1 mining area, to DEQ for review and approval in accordance with applicable statutes and DEQ-Land Quality Coal Rules and Regulations.

18. **DEQ, Land Quality Coal Rules, Ch. 2, Section 5(a)(ix)** requires a surface coal mining permit application to contain both a groundwater and surface water monitoring plan, based on hydrologic, geologic and other information in the permit application, which identifies the quality and quantity parameters to be monitored, sampling frequency and site locations, and describes how the data will be used to determine the impacts of the mining operations on the hydrologic balance.

19. Brook Mine's permit application fails to meet the requirements of DEQ, Land Quality Coal Rules, Ch. 2, Section 5(a)(ix), as it fails to contain sufficient monitoring locations to determine the impacts of the proposed mining operations in the TR-1 area on surface water within and adjacent to the permit area. The permit application further fails to meet the requirements of DEQ, Land Quality Coal Rules, Ch. 2, Section 5(a)(ix), as it fails to contain sufficient monitoring locations to determine the impacts of mining the TR-1 area on the groundwater located in the TR-1 overburden.

20. DEQ must either deny the permit application, or require Brook Mine to identify and commit to installing additional monitoring locations within its permit application necessary to determine the impacts of mining the TR-1 area on the Tongue River and Goose Creek and the groundwater located in the TR-1 overburden, resubmit its application to DEQ and, after approval, re-publish notice of its complete application allowing interested persons to file written objections, pursuant to Wyo. Stat. Ann. § 35-11-406(h)-(k).

—In the Alternative—

DEQ shall issue the permit with an express written condition that, prior to conducting any mining operations, Brook Mine must submit to DEQ for review and approval in accordance with applicable statutes and DEQ-Land Quality Coal Rules and Regulations, alterations to its water monitoring locations as follows:

First, as recommended by DEQ, move one monitor well farther upstream on the Tongue River near the boundary of the proposed permit area, and add additional monitoring cites on the Tongue River just downstream of the

confluence with Goose Creek and an additional monitoring location on Goose Creek; and

Second, add groundwater monitoring locations in the TR-1 overburden and add an additional surface water monitoring location in the Tongue River just north of the TR-1 mining area.

21. **DEQ, Land Quality Coal Rules, Ch. 2, Section 5(a)(ix)** and its incorporation of Ch. 4, Section 2(h) requires a surface coal mining permit application to include a plan to restore the approximate recharge capacity of groundwater within the permit area to a condition that approximates the pre-mining recharge rate.

22. Brook Mine's permit application fails to provide the information required by DEQ, Land Quality Coal Rules, Ch. 2, Section 5(a)(ix) as to the groundwater in the TR-1 overburden, as there is no a plan to restore the recharge capacity and no accurate information as to the pre-mining recharge capacity of that groundwater.

23. DEQ must either deny the permit application, or require Brook Mine to provide and analyze data concerning the recharge capacity of the TR-1 overburden groundwater and include a plan in the permit application to restore the recharge capacity of the TR-1 overburden groundwater to pre-mining conditions, resubmit its application to DEQ and, after approval, re-publish notice of its complete application allowing interested persons to file written objections, pursuant to Wyo. Stat. Ann. § 35-11-406(h)-(k).

—In the Alternative—

DEQ shall issue the permit with an express written condition that, prior to conducting any mining operations, Brook Mine must determine the recharge

capacity of the TR-1 overburden groundwater and provide a plan to restore the TR-1 overburden groundwater to pre-mining conditions to DEQ for review and approval in accordance with applicable statutes and DEQ-Land Quality Coal Rules and Regulations.

24. **Wyo. Stat. Ann. § 35-11-406(b)(ix), (xiii) and DEQ, Land Quality Coal Rules, Ch. 2, Section 5(a)(iv)** require a surface coal mining permit application to include a plan for insuring that “materials constituting a fire, health or safety hazard uncovered during or created by the mining process are promptly treated or disposed of during the mining process in a manner designed to prevent . . . threats to human or animal health and safety,” contain “procedures proposed to avoid constituting a public nuisance, endangering the public safety, human or animal life,” and include “plans which have been developed to preclude sustained combustion of any materials constituting a fire hazard.”

25. Due to the prevalence and history of coal fires in the area, the lack of any information as to current coal fire activity within the permit area renders Brook Mine’s permit application deficient with regard to the required fire safety planning.

26. DEQ shall issue the permit with an express written condition that, prior to conducting any mining operations, Brook Mine must submit and DEQ must approve a report providing maps, descriptions, photographs, and any existing evidence of underground coal fires within 500 feet of any proposed mining locations and a plan that identifies the specific safety measures Brook Mine will take where underground coal fires exist within 500 feet of any proposed mining location.

27. **Wyo. Stat. Ann. § 35-11-415(b)(xi)(E)** requires surface coal mining operators to provide a pre-blasting survey “of a man-made dwelling or structure within one-half (1/2) mile of any portion of the permitted area,” on request of a resident or owner.

28. Finding Big Horn’s request for a pre-blast survey to be mandated by law, and Big Horn’s request for seismic monitors to be reasonable and available, DEQ shall issue the permit with an express written condition that, prior to conducting any mining operations, Brook Mine, under DEQ direction, will conduct a pre-blast survey of all man-made structures and dwellings belonging to Big Horn within one-half mile of the permit area, and install seismic monitoring devices at each of Big Horn’s facilities sufficient to ensure the protection of Big Horn infrastructure, improvements and tenants.

29. Based on the testimony and evidence of record, Brook Mine’s permit application fails to accurately state there are no operational, surface use, or overlapping permit boundary agreements between Brook Mine and Big Horn. The permit application also fails to accurately and sufficiently set forth the reclamation responsibilities of each party as to disturbance within the overlapping permit boundaries.

30. DEQ shall issue the permit with an express written condition that section MP.22 and section RP.12 of Brook Mine’s mine and reclamation plans must be amended to accurately reflect the following:

- There are no operational, surface use, or overlapping permit boundary agreements between Brook Mine and Big Horn Coal.
- Big Horn maintains a reclamation performance bond adequate to reclaim Big Horn facilities and all disturbances associated within Big Horn operations within Big Horn’s permit area.

- Brook Mine shall maintain a reclamation performance bond sufficient to reclaim all disturbance associated with Brook Mine operations within its permit area.
- Big Horn shall not be responsible for reclamation of any disturbance unrelated to Big Horn operations or facilities, including, but not limited to, Brook Mine disturbance within the remaining lands subject to Big Horn's reclamation performance bond.

31. **Wyo. Stat. Ann. § 35-11-416(a)** requires that when the surface owner is not the mineral owner of the estate proposed to be mined, prior to permit issuance, the operator must execute a bond “for the use and benefit of the surface owner or owners of the land, in an amount sufficient to secure the payment for any damages to the surface estate . . . or to the tangible improvements of the surface owner.”

32. In accordance with DEQ's stated assurance at hearing, no permit shall be issued to Brook Mine unless and until a surface owner protection bond is issued for the benefit of Big Horn and after good faith consultation with Big Horn as to the appropriate bond amount.

PROPOSED CONCLUSIONS OF LAW AS TO WYO. STAT. ANN. § 35-11-406(n)

33. **Wyo. Stat. Ann. § 35-11-406(n)** requires Book Mine, as a surface coal mining permit applicant, to meet its burden of “establishing that his application is in compliance with [the Environmental Quality Act] and all applicable state laws” and provides that “[n]o surface coal mining permit shall be approved unless the applicant affirmatively demonstrates” the following:

- (i) That the application is accurate and complete;
- (ii) That the reclamation plan can accomplish reclamation as required by [the Environmental Quality Act]; and

(iii) That the proposed operation has been designed to prevent material damage to the hydrologic balance outside the permit area.

34. Based on the forgoing findings of fact and conclusions of law:

- Brook Mine has failed to affirmatively establish that its permit application is in compliance with the requirements of the Environmental Quality Act and all applicable rules and regulations.
- Brook Mine's permit application lacks required information, mischaracterizes, and contains inaccurate information as to the TR-1 mining area and its related overburden geology and hydrology, as well as lacks the additional legal requirements stated above. Therefore, Brook Mine has failed to affirmatively demonstrate that its permit application is accurate and complete.
- Brook Mine has failed to affirmatively demonstrate that the reclamation plan can accomplish reclamation as required by the Environmental Quality Act, which emphasizes a standard for restoration to pre-mining conditions⁸, because the permit application fails to sufficiently identify pre-mining conditions in the TR-1 area.
- Brook Mine has failed to affirmatively demonstrate that its proposed operation has been designed to prevent material damage to the hydrologic balance outside the permit area, because it fails to account for or consider critical and unique hydrological conditions in the TR-1

⁸ See DEQ, Land Quality Coal Rules, Ch. 4, Section 2.

area and fails to identify how it will monitor the impacts of the proposed TR-1 area mining operations on the hydrological balance within, let alone outside the proposed permit area.

35. DEQ must either:

- Deny the permit application; or
- Require Brook Mine to complete its permit application in light of the above identified deficiencies, resubmit its application to DEQ and, after approval, re-publish notice of its complete application allowing interested persons to file written objections, pursuant to Wyo. Stat. Ann. § 35-11-406(h)-(k).

—In the Alternative—

DEQ shall issue the permit with all of the express written conditions listed above.

DATED:

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Clayton H. Gregersen (WSB # 7-5677)
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CERTIFICATE OF SERVICE

I hereby certify that on July ____, 2017 a true and correct copy of the foregoing was served by email to the following:

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To: [Jeffrey S. Pope \(JSPope@hollandhart.com\)](mailto:JSPope@hollandhart.com); [Lynne Boomgaarden](#); [andrew kuhlmann](#); [Shannon Anderson](#); [Jay Gilbertz](#)
Subject: Proposed Findings of facts, Conclusions of Law
Date: Monday, August 07, 2017 9:06:58 AM

Dear Counsel:

If possible would you please email me your proposed findings and conclusions in word format.

Thanks

Jim Ruby

From: Shannon Anderson
To: [Jeffrey S. Pope](#); [Isaac Sutphin](#)
Cc: lboomgaarden@crowleyfleck.com; cgregersen@crowleyfleck.com; jgilbertz@yonkeetoner.com; andrew.kuhlmann@wyo.gov; james.larock@wyo.gov; [Jim Ruby](#); ryan.schelhaas@wyo.gov
Subject: Upcoming Ramaco Meetings
Date: Monday, August 07, 2017 8:37:31 AM

Jeff & Isaac,

We are wondering if you could elaborate on your client's quote in this article about meetings. We know you will respect the restrictions on ex parte communications with the EQC and its staff, but just wanted clarification about the "various" regulatory agencies your client will be meeting with.

The Wyoming council has 60 days to publish its findings. "There is still some confusion about what precise concerns and remedies are on the table," Ramaco's Atkins said. He expects to have "greater clarity" over the next few days after meeting with staff at various Wyoming regulatory agencies.

Thank you, Shannon

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Wyoming panel temporarily blocks new PRB mine: Update

02 Aug 2017 13:38 (-04:00 GMT)

Adds comments from the Wyoming DEQ

Washington, 2 August (Argus) — Wyoming regulators have blocked temporarily the development of a controversial new mine in the Powder River basin (PRB).

The Environmental Quality Council yesterday voted 4-1 to send Ramaco's permit application for its Brook mine back to the state Department of Environmental Quality (DEQ) for revision, over concerns that the proposal does not adequately address the project's potential environmental effects.

Ramaco is still feeling "very positive and remain(s) confident that the mine permit will ultimately be approved," chief executive Randall Atkins said today.

But the council warned that the company has not yet met its "burden to prove that this mining operation will adequately provide reclamation," member David Bagley (D) said, noting that he is specifically worried about subsidence, or the development of sinkholes, near the mining site.

The proposed permit also fails to demonstrate that the operations will not cause damage to "alluvial valley floors" or hydrologic systems outside the permit area, Bagley added.

Bob LeResche, chair of the Powder River Basin Resource Council — a conservation group that has opposed the project — praised the council's decision.

The application "did not adequately protect public health and safety, land and water," he said. By advancing Ramaco's mining plan, the DEQ did not properly "represent the citizens of the state" and "they were pretty soundly rebuked."

The DEQ had deemed Ramaco's application technically complete but sent it to the state environmental council for review after LeResche's group filed a [complaint](#) asking for a face-to-face meeting about the proposal.

"We felt it was important to put this in front of an impartial group," said DEQ public information officer Keith Guille.

Ramaco started the process to develop Brook mine in 2014, when prompt quarter prices for PRB 8,800 Btu/lb coal averaged \$12.58/short ton and the basin produced 418.2mn st (379.4mn metric tonnes) of sub-bituminous coal. Last year, the prompt quarter price averaged \$10.45/st, while output fell to 319.2mn st, the lowest level in at least 13 years.

Weaker market conditions caused Ramaco to explore other options for Brook mine's coal. The company is now [planning](#) to develop a mine-mouth manufacturing site and research park that would help develop cost-effective technologies to use coal to create products like carbon fiber, activated carbon and building materials.

Council member Tim Flitner (R) said the Brook mine has the potential to be "a good project" but noted that Ramaco Carbon's plan has not addressed earlier "misgivings" about negative environmental impacts of the development.

LeResche questioned the economic wisdom of the new proposal.

Similar projects have been tried in recent years, drawing significant federal grant money without getting results, he said.

The Wyoming council has 60 days to publish its findings. "There is still some confusion about what precise concerns and remedies are on the table," Ramaco's Atkins said. He expects to have "greater clarity" over the next few days after meeting with staff at various Wyoming regulatory agencies.

Guille, of the DEQ, said he could not speculate on how long the permitting process might take.

"This isn't something that's put together within an afternoon — it takes years, months," he said. "But ultimately we've got something of an application here, it's not a complete start-over."

4339666

Send comments to feedback@argusmedia.com

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Subject: Big Horn Coal's Motion to Strike and Response to DEQ's Comments and Brook Mine's Joinder
Date: Tuesday, August 01, 2017 10:57:51 AM
Attachments: [BHC's Motion to Strike and Response to DEQ's Comments and Brook's Joinder.pdf](#)

Good morning,

Attached please find *Big Horn Coal's Motion to Strike and Response to DEQ's Comments on Proposed Permit Conditions and Brook Mine's Joinder* filed with the EQC.

Thank you.

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There is no question that these filings were not authorized, nor contemplated, by the Environmental Quality Council's *Briefing Order*, dated June 13, 2017. Neither DEQ, nor Brook Mine, requested by motion the ability to file these "comments," but rather injected their positions on their own accord. Only making matters worse, both DEQ and Brook Mine inappropriately used these pleadings as a method to further argue the merits of their position and assert additional legal argument. This practice is unauthorized, prejudicial to the other parties in this matter, and should not be permitted by the Council.

In addition, the comments made by DEQ are disingenuous and misleading. DEQ has attempted to lead the Council to believe that both it and Brook Mine lack access to private property, such as Big Horn's, within the permit area, and that because of this permit conditions requiring access to such property should be modified accordingly. *DEQ's Comments*, p. 2. As this Council is aware from earlier proceedings related to Brook Mine's proposed mining operations, Docket No. 16-1601, Brook Mine has obtained an Order in Lieu of Consent to access Big Horn property. Big Horn has stated it intends to abide by any access provided by a valid Order in Lieu of Consent, and Big Horn has executed a Surface Land Owner's Consent authorizing DEQ to enter upon Big Horn property to carry out mine inspections related to Brook Mine's permitted operations. Tr. Vol. IV, p. 900. The Surface Land Owner's Consent document is attached hereto as **Exhibit A**.

WHEREFORE, for the foregoing reasons and for those reasons set forth in both the Fishers' and Powder River Basin Resource Council's *Motions to Strike* DEQ's Comments on Proposed Permit Conditions and Brook Mine's Joinder of those Comments, Big Horn respectfully requests that the Council strike DEQ's "comments" and Brook Mine's joinder from the record of this matter, and not consider either of these filings in its deliberations or decision in this matter.

DATED: August 1, 2017.

By 
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*Attorney for Objectors
Big Horn Coal Company*

CERTIFICATE OF SERVICE

I hereby certify that on August 1, 2017, a true and correct copy of the foregoing was served by email to the following:

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A handwritten signature in blue ink, reading "Lynette Boonstra", written over a horizontal line.

SURFACE LAND OWNER'S CONSENT

Big Horn Coal Company, LLC (Surface Land Owner) CERTIFIES that it is the surface owner of the following described property on which Brook Mining Company, LLC (Applicant) proposes to operate or property which must be crossed to access Applicant's operations as proposed in Applicant's mining and reclamation plans:

As described in the attached Attachment A, incorporated herein

Land Owner and Applicant are parties to an action pending before the Wyoming Environmental Quality Council entitled *In Re Brook Mine Application*, Civil Action No. 16-1601. Without waiving any rights which Land Owner may have in that action or any subsequent appeal, Land Owner hereby grants access to the above described property to the Department of Environmental Quality, Land Quality Division, to enter and carry out mine inspections related to Applicant's permitted operations. Such entry and inspections shall be conducted during normal business hours and in compliance with all applicable federal, state and local laws, permit conditions, and mining industry safety practices. Nothing in this consent should be construed as consent by Land Owner to Applicant's mining and reclamation plans or consent to enter and carry out those mining and reclamation programs on said lands except as may be ordered by the Wyoming Environmental Quality Council or a court of competent jurisdiction.

Dated this 18 day of October, 20 16.



Surface Land Owner (Signature)

JORDAN SWEENEY

Name (printed or typed)

STATE OF UTAH)
) ss.
COUNTY OF SALT LAKE)

Subscribed and sworn to before me by Yidan Sweeney this 18 day of
October, 2016.

Witness my hand and official seal.

SEAL



[Signature]
Notary Public

My Commission expires _____

ATTACHMENT A

[Description of Big Horn Coal Co. lands within current Brook Mine Permit area]

Township 57 North, Range 84 West, 6th P.M., Sheridan County, WY

Section 9: SW $\frac{1}{4}$ NW $\frac{1}{4}$, SW $\frac{1}{4}$, SE $\frac{1}{4}$ part containing 159 acres more or less, SW $\frac{1}{4}$ NE $\frac{1}{4}$ part containing 36 acres more or less, SE $\frac{1}{4}$ NE $\frac{1}{4}$ part containing 8 acres more or less, NW $\frac{1}{4}$ NE $\frac{1}{4}$ part containing 5 acres more or less

Section 10: SW $\frac{1}{4}$ part containing 73 acres more or less

Section 15: NW $\frac{1}{4}$, W $\frac{1}{2}$ NE $\frac{1}{4}$ part containing 42 acres more or less, SE $\frac{1}{4}$ part containing 88 acres more or less, SE $\frac{1}{4}$ SW $\frac{1}{4}$ part containing 4 acres more or less

Section 21: NE $\frac{1}{4}$ part containing 36 acres more or less, NW $\frac{1}{4}$ part containing 5 acres more or less

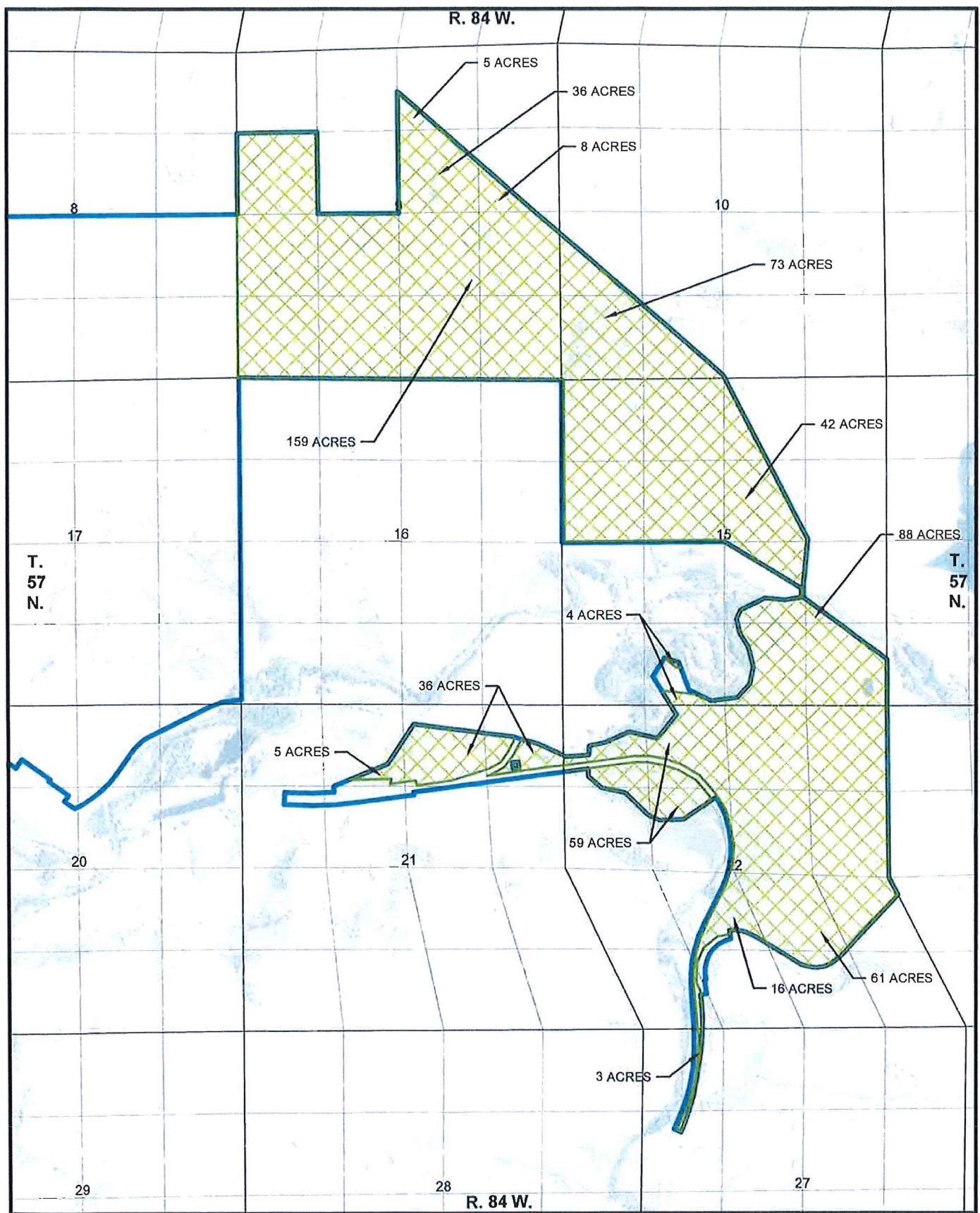
Section 22: NW $\frac{1}{4}$ part containing 59 acres more or less, NE $\frac{1}{4}$, SE $\frac{1}{4}$ part containing 61 acres more or less, SW $\frac{1}{4}$ part containing 16 acres more or less

Section 27: W $\frac{1}{2}$ NW $\frac{1}{4}$ part containing 3 acres more or less

(the "Big Horn Coal Co. Surface Lands" Exhibit 1 to Attachment A)

EXHIBIT 1 TO ATTACHMENT A

(BIG HORN COAL CO. SURFACE LANDS)



From: Shannon Anderson
To: [Jay Gilbertz](#); [Jan Kelley](#); lboomgaarden@crowleyfleck.com; cgregersen@crowleyfleck.com; todd.parfitt@wyo.gov; andrew.kuhlmann@wyo.gov; james.larock@wyo.gov; alan.edwards@wyo.gov; [Jim Ruby](#)
Cc: [Thomas Sansonetti](#); [Isaac Sutphin](#); [Jeffrey S. Pope](#); [Carri Svec](#)
Subject: RE: Brook Mine Application -Fisher"s Motion to Strike "Comments"
Date: Tuesday, August 01, 2017 7:26:55 AM
Attachments: [2017 8-1 response to DEQ & Brook.pdf](#)

And please find our motion to strike attached.

Shannon Anderson
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From: Jay Gilbertz [mailto:JGilbertz@yonkeetoner.com]
Sent: Monday, July 31, 2017 4:16 PM
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Cc: Thomas Sansonetti; Isaac Sutphin; Jeffrey S. Pope; Carri Svec
Subject: Brook Mine Application -Fisher's Motion to Strike "Comments"

Attached is the Fisher's motion to strike "comments" by DEQ and Brook.

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**BEFORE THE ENVIRONMENTAL QUALITY COUNCIL
STATE OF WYOMING**

IN RE BROOK MINE APPLICATION)
)
 TFN 6 2-025) DOCKET 17-4802

**POWDER RIVER BASIN RESOURCE COUNCIL'S MOTION TO STRIKE DEQ AND
BROOK MINE "COMMENTS" ON PERMIT CONDITIONS AND TERMS**

The Power River Basin Resource Council hereby moves to strike the Department of Environmental Quality (DEQ) “comments” filed with the EQC and Brook Mining Company, LLC’s (Brook) joinder to those comments.

The Fishers’ laid out a strong cause for a motion to strike, and for the sake of judicial efficiency we incorporate their arguments by reference here. The Resource Council finds it completely disingenuous for both Brook and DEQ to represent to the parties and the EQC that they would consider conditions from the EQC during the hearing and then act to prevent the EQC from weighing proposed conditions in its decision-making process.

Furthermore, it is also important to note that DEQ specifically asked the EQC for the opportunity to “comment” on the last day of the hearing. Tr. at 1561-62. At that time the EQC was noncommittal but said it would lay out the process in a briefing order. *Id.* That order – dated June 13, 2017 – did not provide an opportunity for the DEQ – or any other party – to provide “comments” on any other parties’ proposed findings or proposed permit terms and conditions.

Therefore, DEQ and Brook's pleadings are out of order, prejudicial to other parties, and should be stricken and not considered by the EQC in its decision today.

Respectfully submitted this 1st day of August, 2017.

/s/ Shannon Anderson
Shannon Anderson
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934 N. Main St., Sheridan, WY 82801
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sanderson@powderriverbasin.org

CERTIFICATE OF SERVICE

I hereby certify that on June 30, 2017, I served a copy of the foregoing **MOTION TO STRIKE** on the following parties by electronic mail, and through the EQC's electronic filing system, which will send a notice of electronic filing to all counsel and parties of record.

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Cc: [Thomas Sansonetti](#); [Isaac Sutphin](#); [Jeffrey S. Pope](#); [Carri Svec](#)
Subject: Brook Mine Application -Fisher"s Motion to Strike "Comments"
Date: Monday, July 31, 2017 4:16:02 PM
Attachments: [Fishers" Motion To Strike.Comments.pdf](#)

Attached is the Fisher's motion to strike "comments" by DEQ and Brook.

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Mary Brezik-Fisher and David Fisher*

**BEFORE THE ENVIRONMENTAL QUALITY COUNCIL
STATE OF WYOMING**

IN RE BROOK MINE APPLICATION)	
	)	DOCKET 17-4802
TFN 6 2-025)	
)	

**FISHERS' MOTION TO STRIKE
DEQ'S "COMMENTS" ON PROPOSED CONDITIONS
AND BROOK MINE'S JOINDER OF "COMMENTS"**

Objectors Mary Brezik-Fisher and David Fisher, through their undersigned attorney Jay A. Gilbertz, of Yonkee & Toner, LLP, hereby file this Motion to Strike the "Comments" of DEQ and Brook Mine and consideration of the same.

The EQC set a very specific briefing schedule at the conclusion of the contested case proceedings. That schedule required the parties to file "Findings of Fact and Conclusions of Law" within a specified time. The scheduling did not allow or provide for the parties to file rebuttal documents, responses, traverses or "comments" on the filings of other parties. Nevertheless, DEQ has attempted to gain the last word by improperly filing a subsequent pleading addressing the merits of the filings of the other parties and has been joined by Brook Mine in this effort.

The EQC did not provide for these later filings attempted by DEQ and Brook nor were the

other parties advised or permitted an opportunity to respond to the Findings and Conclusions offered by DEQ or Brook. The Objectors should not suffer prejudice by following the rules and procedure established by the EQC when others choose to willfully ignore the procedure and file responses anyway.

The result is both DEQ and Brook asserting rather silly propositions by taking the position (either directly or indirectly) that the EQC has no authority to modify the proposed permit through the use of conditions. Neither DEQ nor Brook took that position during the proceedings and both elicited testimony to the contrary. Brook elicited testimony from its engineer Jeff Barron that it “welcomed” conditions the EQC found appropriate, and DEQ asked every landowner to describe any conditions to the permit that the landowner requested the EQC to consider. Now, both claim the EQC has no authority to modify the permit.

Nothing could be further from the truth. Wyoming Statute §35-11-112 defines the power and authority of the EQC and specifically states that the council may “*Order that any permit, license, certification or variance be granted, denied, suspended, revoked or **modified***” Wyo. Stat. §35-11-112(c)(ii) (LexisNexis 2015) (emphasis added). Clearly, the EQC has the power and authority to modify the conditions of a pending permit, particularly when it finds that such modifications are in furtherance of the Act’s goal of protecting and reclaiming the land, air and water of Wyoming and protecting the health and safety of Wyoming residents.

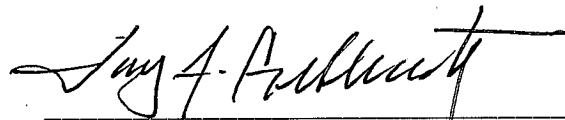
Amazingly, DEQ has gone so far as to advocate that the EQC should not consider more and better financial security for Wyoming and its land and water, claiming that a condition requiring Brook to have further financial assurance cannot be imposed as it “binds third parties”. Requiring that Brook (a company with no mining or reclamation history and evidently next to no assets) have further financial surety from its parent or partner company does not “bind third parties” to the permit

conditions, it simply requires that Brook obtain those assurances as a prerequisite to mining. No one is obligated to provide the assurance, but if Brook cannot obtain and present those assurances, it cannot mine. Brook has provided a plethora of non-binding verbal assurances, it and its partners or parent company should also provide Wyoming with the financial assurances to back up those claims. This assurance does not benefit the Objectors, just the state and citizens of Wyoming. It is astounding the DEQ does not seek this financial assurance itself.

WHEREFORE, for the foregoing reasons, the Fishers respectfully request that the “comments” of DEQ and “joinder” of Brook be struck and that the EQC consider neither pleading in its deliberations or decision in this matter.

DATED this 31th day of July, 2017.

YONKEE & TONER, LLP



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I, Jay A. Gilbertz, hereby certify that on the 31th day of July, 2017, I served a true and correct copy of the above and foregoing by *electronic transmission*, duly addressed as follows:

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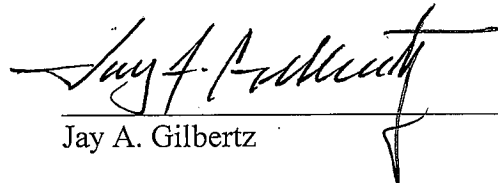
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Cc: [Thomas Sansonetti](#); [Isaac Sutphin](#); [Jeffrey S. Pope](#); [Carri Svec](#)
Subject: Brook Mine Application - Brook's Joinder in the DEQ's Comments on Other Parties' Proposed Permit Conditions
Date: Monday, July 31, 2017 12:33:37 PM
Attachments: [2017-07-31 Brook's Joinder in the DEQ's Comments on other Parties' Propo....pdf](#)

Attached please find Brook Mine's Joinder in the DEQ's Comments on Other Parties' Proposed Permit Conditions

Jan Kelley

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and Sami Falzone*

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ATTORNEYS FOR PERMIT APPLICANT
BROOK MINING COMPANY, LLC

**BEFORE THE ENVIRONMENTAL QUALITY COUNCIL
STATE OF WYOMING**

IN RE BROOK MINE APPLICATION)	
	)	Civil Action No. 17-4802
TFN 6 2-025)	

**BROOK MINE’S JOINDER IN THE DEPARTMENT OF ENVIRONMENTAL
QUALITY’S COMMENTS ON OTHER PARTIES’ PROPOSED PERMIT CONDITIONS**

Brook Mine (Brook) joins the Department of Environmental Quality’s (DEQ) comments on the objecting parties’ proposed permit conditions and objects to any conditions that differ from those DEQ has already stated it will require. Brook agrees with DEQ that no other permit conditions are necessary for the Council to find Brook’s permit is complete and without deficiencies. (DEQ Comments at 1.) Likewise, the Council lacks the authority to impose permit conditions because it exists to oversee DEQ action not assume DEQ’s regulatory mantle. (Brook’s Brief on Statutes and Regulations that the Council Must Consider, 2-6, 9.)

Brook would add only that the objectors’ proposed conditions seek to modify not just Brook’s permit application but the permitting process itself. The Environmental Quality Act allows the public to voice concerns about whether DEQ has properly analyzed a permit application. Neither the Act, case law, nor regulations suggest that members of the public have a

right to shape a permit application to fit their desires. As a result, no law suggests that the public hearing in Wyo. Stat. § 35-11-406(k) should be a forum to reshape a permit application.

Therefore, the Council should not accept the objecting parties' invitation to exceed its statutory authority and the language of the Act. *See Amoco Prod. Co. v. State Bd. of Equalization*, 12 P.3d 668, 673 (Wyo. 2000); *Platte Dev. Co. v. State, Envtl. Quality Council*, 966 P.2d 972, 975 (Wyo. 1998).

DATED: July 31, 2017.



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From: Jan Kelley
To: lboomgaarden@crowleyfleck.com; cgregersen@crowleyfleck.com; todd.parfitt@wyo.gov; sanderson@powderriverbasin.org; andrew.kuhlmann@wyo.gov; james.larock@wyo.gov; alan.edwards@wyo.gov; jgilbertz@yonkeetoner.com; [Jim Ruby](#)
Cc: [Thomas Sansonetti](#); [Isaac Sutphin](#); [Jeffrey S. Pope](#); [Carri Svec](#)
Subject: Brook Mine Application -- Brook's Motion to Strike PRBRC's Supplemental Expert Report
Date: Wednesday, July 26, 2017 12:31:39 PM
Attachments: [2017-07-26 Brook's Motion to Strike PRBRC Supp Expert Report.pdf](#)
[Exhibit 1.pdf](#)
[Proposed Order.pdf](#)

Attached please find:

1. Brook's Motion to Strike PRBRC's Supplemental Expert Report;
2. Exhibit 1; and
3. Proposed Order.

Jan Kelley

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ATTORNEYS FOR PERMIT APPLICANT
BROOK MINING COMPANY, LLC

**BEFORE THE ENVIRONMENTAL QUALITY COUNCIL
STATE OF WYOMING**

IN RE BROOK MINE APPLICATION)	
	)	Civil Action No. 17-4802
TFN 6 2-025)	

**BROOK MINE’S MOTION TO STRIKE POWDER RIVER BASIN RESOURCE
COUNCIL’S SUPPLEMENTAL EXPERT REPORT**

INTRODUCTION

A month and a half after the end of the June 7th hearing, three months after the April 21st deadline for written discovery, and four months after the March 17th deadline to name expert witnesses, Powder River Basin Resource Council (PRBRC) submitted a new expert report with its proposed findings of fact and conclusions of law. Exhibit A to those findings is a July 11, 2017 letter from Mark Eslinger to Shannon Anderson. Mr. Eslinger provides “information concerning the Ground Control Plan and its relation to subsidence.” Mr. Eslinger describes the law he believes applies to a ground control plan. He concludes that “the Ground Control Plan does not deal with subsidence.” He also attached his resume. Mr. Eslinger’s letter is an expert report. *See* Wyo. R. Civ. P. 26(a)(2)(B) (stating an expert report must contain an expert’s opinion, the basis for that opinion, and a curriculum vitae.)

Allowing or considering a new expert report after the expert designation deadline, after discovery, and after the hearing undermines Brook Mine's (Brook) basic right to a fair hearing—a reversible error. While Brook does not doubt the Council has tired of motions, PRBRC's attempt to introduce new expert testimony has left Brook no choice.¹ Therefore, Brook requests the Council strike Exhibit A and the reference to it in paragraph 104 of PRBRC's proposed findings.

ARGUMENT

The Council conducts contested cases with reference to the Wyoming Rules of Civil Procedure. Wyo. Admin. Code ENV Practice & Proc. Ch. 2, § 2. Wyoming's Rules of Civil Procedure allow a decision-maker to strike "redundant, immaterial, impertinent, or scandalous" matters from pleadings. Wyo. R. Civ. P. 12(f).

At best, PRBRC submitting Exhibit A is redundant. PRBRC's designated expert, Dr. Marino, discussed the Mine Safety and Health Administration (MSHA) generally and why he did not think Brook's ground control plan would address subsidence. At worst, PRBRC submitting Exhibit A is an underhanded tactic. PRBRC knew long ago that Brook planned to develop and submit an MSHA ground control plan engineered to prevent subsidence. PRBRC's objection letter dated January 27, 2017 states "[t]he Subsidence Control Plan references a Ground Control Plan that is approved by MSHA and is required under 30 C.F.R. § 77.1000." (PRBRC Hr'g Ex. 1 at 12.) From January 27, 2017 until the expert designation deadline of March 17, PRBRC had

¹ In an effort to avoid filing this motion, Brook's counsel emailed PRBRC's counsel and requested PRBRC withdraw Exhibit A and the reference to Exhibit A in paragraph 104. (See email attached as Exhibit 1.) PRBRC has not responded to Brook's request.

time to designate an expert on this issue. But PRBRC did not. It waited until discovery, the hearing, the final briefing, and any chance of Brook responding had ended.

This attempt to smuggle in additional expert testimony also fails Wyoming's five factor test for supplementing or adding expert reports after the expert designation or report deadline. Those factors are: 1) "whether allowing the evidence would incurably surprise or prejudice the opposing party;" 2) "whether excluding the evidence would incurably prejudice the party seeking to introduce it;" 3) "whether the party seeking to introduce the testimony failed to comply with the evidentiary rules inadvertently or willfully;" 4) "the impact of allowing the proposed testimony on the orderliness and efficiency of the trial;" and 5) "the impact of excluding the proposed testimony on the completeness of the information before the court or jury." *Forbes v. Forbes*, 2015 WY 13, ¶ 83, 341 P.3d 1041, 1063 (Wyo. 2015).

Allowing Exhibit A would incurably prejudice Brook because Brook has no chance to respond beyond this motion. But PRBRC would suffer no prejudice because it presented testimony about Brook's ground control plan. PRBRC has acted willfully because it could have designated and submitted the opinions in Exhibit A on time. Its knowledge of Brook's ground control plan in January and designation of three experts before the March 17th deadline prove as much. Allowing Exhibit A would impact more than the orderliness or efficiency of the hearing, it would defeat Brook's right to rebut evidence. Finally, excluding Exhibit A would not impact the completeness of information because PRBRC already presented testimony on the issue.

Therefore, Brook requests the Council strike Exhibit A to PRBRC's proposed findings of fact and conclusions of law and the reference to Exhibit A in paragraph 104. In the alternative, Brook requests the Council state it will not consider either as part of its decision in this case.²

² Brook has included a proposed order to this effect.

DATED: July 26, 2017.



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BROOK MINING COMPANY, LLC

CERTIFICATE OF SERVICE

I hereby certify that on July 26, 2017, I served a true and correct copy of the foregoing by email to the following:

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Exhibit 1

From: Jeffrey S. Pope
Sent: Tuesday, July 25, 2017 11:56 AM
To: Shannon Anderson
Cc: Carri Svec; Isaac Sutphin; Thomas Sansonetti
Subject: Exhibit A to Findings of Fact

Shannon,

We have reviewed the findings and conclusions you submitted yesterday, including Exhibit A. Exhibit A is an expert report submitted far beyond the expert designation deadline, after the close of evidence, and in a manner that precludes a response. It also attempts to rebut known issues, namely that the permit committed to an MSHA ground control plan as part of addressing subsidence. Simply put, it is improper.

We request that you withdraw Exhibit A and revise your findings to delete any reference to Exhibit A, which appears to be just paragraph 104. We are happy to stipulate to you filing a revised findings that delete Exhibit A and any references. We ask that you do this by 5pm today.

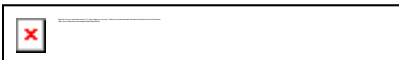
If you elect to do nothing, then we will file a motion to strike. I am emailing you in the hopes we can avoid having to file that motion.

Please let me know what you intend to do.

Thank you,

Jeff

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**BEFORE THE ENVIRONMENTAL QUALITY COUNCIL
STATE OF WYOMING**

IN RE BROOK MINE APPLICATION)	
	)	Civil Action No. 17-4802
TFN 6 2-025)	

**ORDER GRANTING BROOK MINE’S MOTION TO STRIKE POWDER RIVER BASIN
RESOURCE COUNCIL’S SUPPLEMENTAL EXPERT REPORT**

THIS MATTER having come before the Council on Brook Mine’s Motion to Strike Powder River Basin Resource Council’s Supplemental Expert Report, the Council FINDS the Powder River Basin Resource Council has included a supplemental expert report as Exhibit A to its proposed findings of fact and conclusions of law. The report is untimely and prejudicial to the other parties in the case.

IT IS HEREBY ORDERED that Exhibit A to PRBRC’s proposed findings of fact and conclusions of law and the reference to Exhibit A in paragraph 104 is stricken and the Council will not consider either as part of its decision in this case.

DATED: July ____, 2017.

Dr. David M. Bagley
Hearing Officer
Environmental Quality Council

CERTIFICATE OF SERVICE

I, Jim Ruby, hereby certify that on July _____, 2017, I served a true and correct copy of the foregoing by email to the following:

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Cc: [Jeffrey S. Pope](#); [Carri Svec](#)
Subject: Fisher's Findings of Fact and Conclusions of Law
Date: Monday, July 24, 2017 5:57:31 PM
Attachments: [FISHER Findings Of Fact And Conclusions Of Law.pdf](#)

Dear All: Attached are the Fisher's Proposed Findings and Conclusions

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**BEFORE THE ENVIRONMENTAL QUALITY COUNCIL
STATE OF WYOMING**

IN RE BROOK MINE APPLICATION)
)
TFN 6 2-025)
)
)

DOCKET 17-4802

**FISHERS' PROPOSED FINDINGS OF FACT AND
CONCLUSIONS OF LAW**

Objectors Mary Brezik-Fisher and David Fisher, through their undersigned attorney Jay A. Gilbertz, of Yonkee & Toner, LLP, hereby file their proposed findings of fact and conclusions of law.

As the Council now knows, this proposed coal mine is situated in and adjacent to the historically important Tongue River and its alluvial valley floor which is home to farming predating Wyoming's statehood, historic structures, abundant wildlife, recreation and over one hundred landowners and dozens of homeowners within one-half mile of the mine boundary. It is a very special place in Wyoming and mining should not be permitted unless it has been affirmatively demonstrated by sound scientific study that material harm to this resource will not occur.

Brook Mine's permit application is grossly inadequate in affirmatively demonstrating this in a number of ways and is consequently not a "complete" application allowing for permit issuance at this time. More thorough and scientifically complete studies and baseline monitoring need to be

done in order to show that the mine will not cause subsidence or material damage to the hydrologic balance and the adjacent alluvial valley floor.

The Fishers' Findings of Fact and Conclusions of Law will be broken into two distinct sections. The first addresses findings and conclusions as they relate to the fact that the permit application is currently incomplete and thus not ready to move to the Director of the DEQ for review. The second addresses conditions that must be placed upon a permit that could be issued.

SECTION I. COMPLETENESS OF PERMIT

A. CONCLUSIONS OF LAW RELATED TO THE COMPLETENESS OF BROOK'S APPLICATION:

1. Before an application for a permit for a surface coal mine can proceed to the publication phase, the application must be "determined complete" by DEQ. Wyo. Stat. §35-11-406(g) (LexisNexis 2015).
2. The plain and ordinary definition of "complete" is "having all necessary parts, elements, or steps." *Merriam Webster's Collegiate Dictionary*, 10th Ed. (1995).
3. As part of reviewing decision making by the DEQ, the EQC has the authority to review DEQ's determination of whether or not the Brook Mine application is in fact "complete" and ready for further review. §35-11-406(k) (LexisNexis 2015).
4. "The applicant for a surface coal mining permit has the burden of establishing that his application is in compliance with this act and all applicable state laws" Wyo. Stat. §35-11-406(n) (LexisNexis 2015). Brook Mining Company, LLC is the applicant in this instance.
5. Wyoming Statute §35-11-106(n) is part of "this act" (meaning the Environmental Quality Act) and therefore applies to all surface coal mining applications. §35-11-406(n) (LexisNexis 2015) and §35-11-101 (LexisNexis 2015).
6. Wyoming Statute §35-11-106(n) provides in part:
 - (n) The applicant for a surface coal mining permit has the burden of establishing that his application is in compliance with this act and all applicable state laws. No surface coal mining permit shall be approved unless the applicant affirmatively demonstrates and the administrator finds in writing:
 - (i) The application is accurate and complete;
 - (ii) The reclamation plan can accomplish reclamation as required by this act;

(iii) The proposed operation has been designed to prevent material damage to the hydrologic balance outside the permit area;

(v) The proposed operation would:

(B) Not materially damage the quantity or quality of water in surface or underground water systems that supply these alluvial valley floors.

Wyo. Stat. §35-11-406(n) (LexisNexis 2015).

7. In order to be accurate and complete, a surface coal mining application must contain meaningfully complete information of compliance with all applicable rules and regulations, including the information which forms the basis for the applicant's affirmative demonstration of compliance with the requirements of Wyo. Stat. §35-11-406(n).
8. While Wyo. Stat. §35-11-406(n) provides that the administrator of the DEQ must make findings that the proposed mine will meet the subsection (n) requirements, the subsection also clearly states that a permit may not be issued unless "the applicant affirmatively demonstrates" that its mine will be in compliance with subsection (n). Wyo. Stat. §35-11-406(n) (LexisNexis 2015). In order to be complete, the application must contain the information affirmatively demonstrating compliance with subsection (n).
9. "Affirmatively demonstrating" as required by the Environmental Quality Act requires more than generalized or conclusory statements such as "no harm is expected". Wyo. Stat. §35-11-406(n) (LexisNexis 2015).
10. In addition to the requirements of §35-11-406, DEQ regulations require that as part of its application an applicant must also provide information "and evaluations on the potential for and the extent of subsidence, and the effect it may have on structures, the continued use of the surface land and aquifers or recharge areas". If subsidence may cause damage, a subsidence control plan is required. Wyo. Admin. Rules, DEQ-LQD, Underground Coal Mines, Ch. 7 §1(a)(v).

B. FINDINGS OF FACT RELATED TO THE COMPLETENESS OF BROOK'S APPLICATION:

1. Expert witness Mike Wireman (Wireman) testified before the EQC. Wireman is an expert in geo-hydrology with extensive experience in hydrology and decades of experience as evidenced by his testimony and CV which are part of the record. (*POW Exhibit 18, Wireman Testimony Vol. VI @ pgs. 1327-1335*)

2. The EQC finds Mr. Wireman to be a well-qualified expert who gave credible and reliable testimony on the topic of hydrology. To the extent his opinions and testimony are cited as the basis of findings of fact in these findings, the EQC has resolved any conflicts or dispute between testimony of others and in favor of Mr. Wireman's testimony and has found him to be the more credible and reliable witness.
3. The hydrologic studies done by the applicant Brook Mine thus far along with the other available data do not provide a sound scientific basis from which it can be concluded that the proposed mining operation has been designed to "prevent material damage to the hydrologic balance outside the permit area". (*Wireman Testimony Vol. VI @ pgs. 1400-1401*)
4. Mr. Wireman testified to several deficiencies in the hydrologic studies done thus far which evidence that the applicant, Brook Mining Company, LLC, has not affirmatively demonstrated that its mine will prevent material damage to the hydrologic balance outside the permit area, including:
 - a. The hydrologic review and assessment failed to account in any way for how dewatering of the coal seams would impact the water in other ground water aquifers. (*Wireman Testimony Vol. VI @ pg. 1344*);
 - b. The hydrologic review and assessment was unacceptably sparse with only one (1) pump test done in the far eastern portion of the permit area and only two (2) site specific hydraulic conductivity values (one for each seam of coal) over the entire permit area. (*Wireman Testimony Vol. VI @ pg. 1354*) Hydraulic conductivity measures the rate at which water flows in an aquifer. (*Wireman Testimony Vol. VI @ pg. 1360*) The permit area encompassed an area of approximately 4,500 acres. (*Kuchanur Testimony Vol. III @ pg. 535; Kristiansen Testimony Vol. I @ pg. 50*);
 - i. DEQ admitted that the hydrology and flow of water and geology was complex and could change significantly in short distances. (*Kristiansen Testimony Vol. IV, @ pgs. 302-303*);
 - c. The hydrologic review and assessment only used one porosity value or hydraulic conductivity value for the entire permit area which cannot account for the heterogeneity or diversity of the geology in the permit area. (*Wireman Testimony Vol. VI @ pg. 1355*) Furthermore, data was not collected from monitoring wells during the pumping tests in the Slater Creek area as would be expected and appropriate. (*Wireman Testimony Vol. VI @ pgs. 1363-64*)
 - d. Using only one porosity value for the entire permit area fails to take into account seasonal changes which can alter direction of flow, velocity of flow and quantity of flow to a particular area. (*Wireman Testimony Vol. VI @ pg. 1355*)

- e. Proper investigation and testing for potential ground water impacts require the development of a hydrograph over at least a full 12-month cycle to take into account seasonal changes in quantity, quality and flow of water in these aquifers. (*Wireman Testimony Vol. VI @ pg. 1345*) Brook's testing failed to collect any surface water data from October through March, a period of about 6 months or ½ of a yearly hydrograph, and historic data reflects that Hidden Water Creek only flows in the winter months during a time Brook collected no data on that drainage. (*Wireman Testimony Vol. VI @ pg. 1361*)
 - f. Inadequate testing and data collection was done on the overburden, underburden, Tongue River alluvium and Slater Creek alluvium to make scientific predictions about hydrologic impacts. (*Wireman Testimony Vol. VI @ pg. 1361*)
 - g. No monitoring or baseline wells were used to establish the baseline water in the Tongue River alluvium. (*Wireman Testimony Vol. VI @ pg. 1365*)
 - h. The data used for the recharge of the aquifers is not site specific and is vaguely identified not allowing for peer review of those assumptions. (*Wireman Testimony Vol. VI @ pg. 1363*) Moreover, the groundwater aquifer assessment contains no discussion of vertical intervals or lithology which affect the potentially impacted domestic wells. (*Wireman Testimony Vol. VI @ pg. 1367*)
 - i. In general, there is a dearth or lack of supporting hydrologic data to support the conclusions Brook attempts to draw from its study. (*Wireman Testimony Vol. VI @ pg. 1363*)
5. Substantial concern exists that material damage would be done to the hydrologic balance inside and/or outside the permit area (*Wireman Testimony Vol. VI @ pgs. 1398-1399*) and the testing done was wholly inadequate to conclude there will not be material hydrologic impacts. (*Wireman Testimony Vol. VI @ pgs. 1373; 1442*)
 6. The permit application submitted by Brook Mine does not contain the information necessary to affirmatively demonstrate that material damage to the hydrological balance outside the permit area will be prevented. (*Wireman Testimony Vol. VI @ pgs. 1398-1399; 1442*)
 7. The hydrologic studies done thus far by the applicant Brook Mine, along with the other available data, do not provide a sound scientific basis from which it can be concluded that the mining will "not materially damage the quantity or quality of water in surface or underground water systems that supply" alluvial valley floors that are within the mine boundary or within one-half mile of the proposed mine boundary. (*Wireman Testimony Vol. VI @ pgs. 1400-1401, 1441-1443*)

8. Substantial concern remains that material damage would be done to the quantity or quality of water in the surface or underground water that supplies alluvial valley floors or areas likely to be alluvial valley floors that are either in or within one-half mile of the permit area. (*Wireman Testimony Vol. VI @ pgs. 1389-1392 and 1373*)
9. Wireman testified that even a small reduction in the amount or volume of water being supplied to the alluvium of the alluvial valley floors located within the permit boundary can cause material damage to the productivity of these valley floors. (*Wireman Testimony Vol. VI @ pgs. 1396-1398*)
10. A number of documents authored by Brook's engineering expert acknowledge a communication or connectivity between the water in the coal seams and the water in the alluvium of alluvial valley floors or areas likely to be alluvial valley floors, including:
 - a. "Therefore, it is likely that the Carney coal would lose water to the Tongue River alluvium" – DEQ Exhibit 12, pg. 231.
 - b. Recognition of water communication between the alluvium and the Carney coal seam stating: "regions where the Carney seam subcrops into Slater Creek or Tongue River alluvial material" – See DEQ Exhibit 13, pg. 051, RP.8.3 *Aquifer Reconstruction*.
 - c. Recognition of water communication between the alluvium and Masters coal seam stating: "Masters Seam are assumed to include infiltration from overlying strata, communication with river alluvium" – See DEQ Exhibit 13, pg. 051, RP.8.3 *Aquifer Reconstruction*.
11. The above statements are consistent with Mr. Wireman's opinions that there is communication between the water in the coal seams and the water in the alluvium of these alluvial valley floors. (*Wireman Testimony Vol. VI @ pgs. 1388-1389*)
12. It was uncontested that as part of mining the coal, Brook Mine will de-water the coal seam.
13. De-watering the coal seam will interrupt the natural flow of water in the coal seams which supply and communicate with the river alluvium. (*Wireman Testimony Vol. VI @ pgs. 1400-1401*)
14. The perturbing of the natural flow of water in this system will be further exacerbated if overburden subsidizes into the cavity left by coal removal. (*Wireman Testimony Vol. VI @ pgs. 1370-71*)
15. Brook Mine did not call a hydrology expert to demonstrate how its permit application contained the information and proof that its application demonstrated that the mining

operation would be in compliance with Wyo. Stat. §35-11-406(n).

16. **Brook Mine, who bore the burden of proof, did not call its own hydrology expert to counter the testimony of Mr. Wireman.**
17. Testimony revealed that there are over 350 water wells ("357") identified which could be potentially impacted. (*Barron Testimony Vol. IV @pg. 778; Wireman Testimony Vol. VI @pg. 1344*)
18. Draw-down in domestic/stock water wells are predicted to as much as 25 feet. (*Kuchanur Testimony Vol. III @pgs. 541-543 and DEQ Exhibit 12-251, Table 4.9-1*)
19. Brook Mine has the burden of proof on these issues.
20. Wyo. Admin. Rules, DEQ-LQD, Underground Coal Mining, Ch. 7 §1(a)(v) requires that as part of its permit application, Brook Mine have a subsidence control plan.
21. Dr. Marino testified before the Council and is a very qualified expert in the area of underground mine subsidence with decades of experience as shown by his testimony and his CV which was received as POW Exhibit 18. (*Marino Testimony Vol. VI @pgs. 1192-1198*)
22. The EQC finds Dr. Marino to be a well-qualified expert who gave credible and reliable testimony on the topic of hydrology. To the extent his opinions and testimony are cited as the basis of findings of fact in these findings, the EQC has resolved any conflicts or dispute between testimony in favor of Dr. Marino's testimony and has found him to be the more credible and reliable witness.
23. **Neither Brook Mine nor DEQ offered any expert testimony from an expert with similar qualifications to Dr. Marino.**
24. There have been inadequate studies and testing done to draw any scientific conclusions as to the long-term risk of subsidence at the proposed Brook Mine. (*Marino Testimony Vol. VI @pg. 1246*)
25. Without these studies and based on current available information, the risk of subsidence as a result of the coal mining by Brook Mine is substantial. (*Marino Testimony Vol. VI @pg. 1200 and POW Exhibit 11 Powerpoint*)
26. The deficiencies and total lack of a subsidence plan were explained in detail by Dr. Marino

and are encompassed in his Powerpoint presentation received as Powder River demonstrative Exhibit 11 and include:

- a. Proper mine subsidence assessment requires assessing the strength and stability of the roof, floor and pillar materials that will support the mine void. (*Marino Testimony Vol. VI @ pgs. 1205-10*)
- b. Appropriate data was not collected to do a site specific assessment of the strength and stability of the roof, floor and pillar materials at the proposed Brook mine. (*Marino Testimony Vol. VI @ pgs. 1211, 1228-1229*)
- c. Faulting in the overburden has not been studied or documented to know what impact known geologic faults may have on subsidence risk. (*Marino Testimony Vol. VI @ pgs. 1218-19*)
- d. For long-term mine stability, safety factors should be 1.6 to 2.0 or higher depending on conditions. (*Marino Testimony Vol. VI @ pg. 1286*)
- e. Using information from the permit, coal pillar pressures could reach 1,300 pounds per square inch resulting in a safety factor of less than 1.0. (*Marino Testimony Vol. VI @ pg. 1226*)
- f. The clay-stone known to exist in the overburden and underburden can have bearing strength of as little as 300 pounds per square inch resulting in a safety factor of less than 1.0 (*Marino Testimony Vol. VI @ pg. 1227*)
- g. The subsidence control plan exhibits a lack geomechanical understanding of the long-term and short-term stability of the mine. (*Marino Testimony Vol. VI @ pg. 1228*)
- h. There is insufficient information or data in the permit application and very limited analysis of subsidence risk in the documents such that the subsidence potential cannot be assessed. (*Marino Testimony Vol. VI @ pg. 1228*)
- i. Based upon Dr. Marino's review of many subsidence control plans during the decades of his experience, the Brook Mine subsidence assessment is well below industry standards. (*Marino Testimony Vol. VI @ pg. 1228*)
- j. Based upon what is reported in the mine plan the risk of subsidence at the Brook Mine is high. (*Marino Testimony Vol. VI @ pgs. 1228-29*)

- k. The calculations in the mine plan improperly used coal strength data for bituminous coal rather than the sub-bituminous coal which exists at the site. (*Marino Testimony Vol. VI @ pgs. 1226-27, 1234, 1247*)
 - l. The formula used in the application to calculate strength/bearing capacity is for extraction heights of 7 feet or less and in the Brook Mine extraction can reach 20 feet. (*Marino Testimony Vol. VI @ pg. 1227*)
 - m. Complete subsidence control plans are typically stamped by a professional engineer and no such plan is part of the Brook Mine application. (*Marino Testimony Vol. VI @ pgs. 1238-39*)
 - n. The mine plan is not complete due to the lack of proper testing and analysis to determine the risk of subsidence due to mining activities. (*Marino Testimony Vol. VI @ pg. 1244*)
- 27. Through its engineer Jeff Barron, Brook Mine **admitted** that the studies and work suggested by Dr. Marino are necessary steps for a proper mine subsidence plan. (*Barron Testimony Vol. III @ pgs. 674-675*)
 - 28. DEQ and Brook Mine have contended that a subsidence control plan would be part of an MSHA Ground Control Plan or that a MSHA Ground Control Plan would constitute a subsidence control plan. (*Barron Testimony Vol. VII @ pgs. 1533-1534*)
 - 29. A MSHA Ground Control Plan and a subsidence plan are two different plans which address different things. They are not synonymous with each other. (*Marino Testimony Vol. VI @ pgs. 1202-03, 1237, 1241*)
 - 30. A MSHA Ground Control Plan primarily addresses the safety of miners and workers during mining activities while a subsidence control plan addresses the potential for long-term subsidence for decades after mining is completed. *Id.*
 - 31. Without the proper studies the risk for subsidence cannot be properly gauged or assessed and likewise the potential environmental and reclamation impacts and consequences cannot be properly gauged or assessed.
 - 32. Absent this information it is not possible to determine whether the reclamation plan is likely to "accomplish reclamation as required by this act" as is dictated by Wyo. Stat. §35-11-406(n)(ii).

33. Because Brook Mine's application does not contain the information which affirmatively demonstrates that the proposed mine would be in compliance with Wyo. Stat. §35-11-406(n), the application is incomplete and must be denied at this time.
34. Brook Mine may complete the necessary reports and studies to supply the information satisfying its obligation to affirmatively demonstrate that its mining activities will be in compliance with Wyo. Stat. §35-11-406(n) and properly study the subsidence risk and then resubmit its application.

SECTION II. PERMIT CONDITIONS REQUIRED

In the event the EQC determines that it will allow Brook Mine's application for a coal mining permit and that it is ready to be further considered without the application containing the information which affirmatively demonstrates that the project will be in compliance with §35-11-406(n) and without a complete subsidence control plan, the Fishers request that the EQC place conditions on the permit which set parameters for the future potential mining activities. The following findings of fact and conclusions of law are proposed for that reason. The Fishers in no way concede or waive their claims that Brook Mine's application is incomplete and does not provide the necessary background information and data to be in compliance with the Environmental Quality Act and associated rules and regulations, and they specifically retain their right to appeal and fully challenge these deficiencies.

A. FINDINGS OF FACT IN RELATION TO PERMIT CONDITIONS:

Subsidence Issues:

1. The risk of subsidence and subsidence control have not yet properly been studied or assessed by Brook Mining Company, LLC. (*See Findings of Fact in Section I above*).
2. Based upon the information reported and available in the mine plan the risk of subsidence at the Brook Mine is high, unless shown otherwise by proper studies and calculations. (*Marino Testimony Vol. VI @ pgs. 1228-29*)
3. Mining should not proceed if there is a risk of material subsidence.

4. Testimony from landowners demonstrate that subsidence issues related to historic mining in the area are ongoing. Mr. Buyok, a retired engineer, testified that he recently nearly lost a four-wheel-drive tractor in an area on his property which subsided as he drove over the area and that continual subsidence is an ongoing concern. (*Buyok Testimony Vol. IV @ pgs. 1019-1022; Buyok Testimony Vol. V @ pgs. 1045-1047*)
5. The EQC finds that it is appropriate, proper and reasonable that as a condition of permit issuance, the permit have a condition requiring that prior to any mining activity at any of the proposed locations, Brook Mine will be required to supply a study evidencing that there is a low risk of long-term subsidence at that location. The permit condition shall read as follows:

Prior to any mining activity at any location, the mining company shall submit and DEQ shall approve a Subsidence Control Plan that demonstrates a low risk of long-term subsidence bearing the stamp of a professional engineer licensed in Wyoming. Such plan will be a formal subsidence control plan addressing the long-term risk of subsidence and prepared consistently with the industry standards for long-term subsidence prediction and control and demonstrate reliance upon a safety factor of 2.0 or higher. An MSHA Ground Control Plan will not qualify as a Subsidence Control Plan.

Bonding Issues:

6. Wyoming environmental protection laws are designed to ensure proper and adequate reclamation is accomplished to protect Wyoming's land, air and water quality and avoid Wyoming and its taxpayers being left with reclamation responsibilities created by mining operators. See §35-11-102 et. seq.
7. Wyoming has experienced problems with Abandoned Mine Lands projects and has recently encountered risks of very large coal mining operations with significant resources being unable to meet their reclamation obligations, including Arch Coal Company, Alpha Natural Resources, and Peabody.
8. Several witnesses, including Ramaco executive Kenneth Woodring, testified that coal mining operations can encounter unforeseen environmental challenges during operations which are not covered by the reclamation bond. (*Woodring Testimony Vol. IV @ pgs. 827-829*)
9. Incremental bonding is for reasonably "foreseen" reclamation costs. The Objectors have all questioned whether the potential problems and reclamation have been properly assessed by Brook Mine.
10. Brook Mining Company, LLC is the sole applicant for this mining permit and despite repeated references to Ramaco Resources, Inc., Ramaco is not a permit applicant. (*See Permit Application*) However, Ramaco and Brook Mining Company, LLC were often

referred to interchangeably, and representatives of Ramaco (Ken Woodring) testified in support of the application.

11. Pursuant to Wyoming Statute §17-16-1630, all corporations registered in the State of Wyoming must submit an Annual Report to the Wyoming Secretary of State's Office. Wyo.Stat. §17-16-1630 (LexisNexis 2015)
12. An offer of proof was made by the Fishers demonstrating that Brook Mining Company, LLC has reported to the Wyoming Secretary of State that its total assets are worth \$250,000 or less. (*Fishers' Exhibit 27, Offer Of Proof filed with EQC on May 25, 2017*) [A recent Annual Report was filed with the Wyoming Secretary of State's Office by Brook Mining Company, LLC dated June 19, 2017 still showing total assets worth \$250,000 or less.] (See Exhibit A attached hereto.)
13. Neither Brook nor Ramaco has an operating history in Wyoming or any other state demonstrating a history of satisfying its reclamation and environmental obligations.
14. Brook Mining Company, LLC has no current employees.
15. Brook Mining Company, LLC through its witnesses, including Jeff Barron and Ramaco's consultant Ken Woodring, expressed confidence in the soundness and environmental safeguards of the mine plan. (*Woodring Testimony Vol. IV @ pgs. 828-829; Barron Testimony Vol. IV @ pg. 808*) These expressions of confidence are properly backed up by financial surety to the State of Wyoming to assure reclamation and environmental liabilities are born by the industry and not the State of Wyoming and its taxpayers, which is the policy of this State. Wyo. Stat. §35-11-102 et. seq.
16. The EQC finds that it is appropriate, proper and reasonable that as a condition of permit issuance and to insure responsible development, and that reclamation is completed by the operator and not borne by the State of Wyoming and its taxpayers, that all reclamation and environmental liabilities of Brook Mining Company, LLC be guaranteed by Ramaco Resources, Inc. This condition shall read as follows:

Prior to commencement of any mining operations, Ramaco Resources, Inc. shall provide a written guarantee to the State of Wyoming guaranteeing the payment and satisfaction of all reclamation and environmental liabilities of Brook Mining Company, LLC.

Blasting Issues:

17. As proposed, Brook Mine's blasting plan provides that the company can conduct blasting at any time during daylight hours (sunrise to sunset) without any further restrictions on blasting times. (*Emme Testimony Vol. III @ pg. 638*)

18. No justification or reason was given by Brook or DEQ as to why blasting would be a necessary aspect of mining operations on such a broad daylight to dark basis every day.
19. Indeed, Doug Emme of the DEQ indicated that Brook Mine originally proposed a more restricted blasting schedule and were encouraged by DEQ to broaden the blasting schedule to all daylight hours every day of the year. (*Emme Testimony Vol. III @ pg. 623; Barron Testimony Vol. IV @ pg. 800*)
20. Witnesses from both Brook Mine and the DEQ testified that the blasting at Brook Mine **would not be** similar to that in the Campbell County coal mines where unlimited daylight blasting is allowed and necessary. Mr. Woodring indicated that the Brook Mine operation would be a "small mine by comparison" to other coal mines. (*Emme Testimony Vol. III @ pgs. 638-639; Barron Testimony Vol. IV @ pg. 782; Woodring Testimony Vol. IV @ pg. 820*)
21. The only justification given for the unlimited daylight blasting was that "safety concerns" might arise if a blasting time was about to expire after explosives had been set and for unforeseen reasons the company could not facilitate blasting within the designated blasting time. (*Barron Testimony Vol. IV @ pg. 801*)
22. However, Doug Emme testified that the DEQ will allow blasting outside of designated times, including in the dark, for safety or emergency reasons and only requires or requests that the operator alert DEQ of the situation. (*Emme Testimony Vol. III @ pg. 586*)
23. When asked by Council Members Lally, Agopian and counsel if it would be reasonable to put some restrictions on blasting given the nature of Brook Mine's proposed operation and the large number of landowners involved, DEQ's Emme replied that it is possible to include conditions restricting the blasting operation. (*Emme Testimony Vol. III @ pgs. 617-618, 639-640*)
24. Testimony revealed that many residential homes are located within one-half mile of the permit boundary and blasting has the potential to be disruptive and bothersome to a large number of residents as well as concerns about damage from vibrations associated with the blasting. (*Emme Testimony Vol. III @ pg. 584; Buyok Testimony Vol. IV @ pgs. 1019-1020, 1022, 1045-1046*)
25. Although working from DEQ's Sheridan offices only a few miles from the proposed mine site, Mr. Emme who reviewed and approved Brook Mine's blasting plan on behalf of DEQ, had not visited the area of the mine site or explored the large number of potentially affected landowners or historic stone structures and other structures prior to approving the blasting plan. (*Emme Testimony Vol. III @ pg. 603*)

26. There is no provision in the current mine plan to restrict or limit blasting during high wind or weather events. (*Emme Testimony Vol. III @ pgs. 608-609*)
27. DEQ has implemented conditions on other mine permits regarding restrictions on blasting during inversions or high wind events and the mines themselves have voluntarily put restrictions on their blasting operations. (*Emme Testimony Vol. III @ pgs. 608-609*)
28. Neither Brook Mine nor DEQ presented any evidence to suggest why such restrictions were not appropriate or infeasible at the proposed Brook mine.
29. For the above reasons, including the fact that no justification or reason was stated for why blasting will be necessary from sunrise to sunset every day of the week throughout the year, the EQC finds that reasonable limitations on blasting times are an appropriate condition of permit issuance. This condition shall read substantially as follows:

Absent a demonstration of good cause, Brook Mine shall restrict its blasting to daylight hours between 9:00 a.m. and 4:00 p.m. local time, Monday through Friday and shall conduct no blasting on legal holidays. Brook Mine shall also be required to limit blasting as directed by the DEQ during inversions, high wind events and other conditions deemed by the DEQ to constitute a safety or health concern.

Seismic Monitoring:

30. The Fishers and other landowners expressed a desire to have seismic monitoring placed on their property to measure the strength of the shock waves or "vibration" which reach their residence during blasting. (*Fisher Testimony Vol. V @ pgs. 1165-1166*); *Bocek Testimony Vol V @ pg. 1093*; *Collins Testimony Vol. V @ pgs. 1086-1087*)
31. DEQ personnel, including Doug Emme, testified that in other mining operations the DEQ has installed such seismic monitoring on the property of homeowners near mines where blasting is occurring. (*Emme Testimony Vol. III @ pgs. 618-619*)
32. Brook's engineer, Jeff Barron, testified that he is familiar with requests for seismic monitoring and that his employer Western Water has installed seismic monitoring regarding other mine operations in the Powder River Basin. (*Barron Testimony Vol. IV @ pgs. 770-771, 783*)
33. Neither Brook nor DEQ offered any evidence why such seismic monitoring was not appropriate or was impractical at the Brook Mine.
34. Testimony from several landowners, including Mary Fisher, indicated that historic rock

structures are located on their property and they are concerned about the impact blasting will have on these structures. (*Bocek Testimony Vol. V @pg. 1093; Collins Testimony Vol. V @pg. 1086; Fisher Testimony Vol. V @pg. 1143*)

35. For the above reasons, the EQC finds that it is reasonable and appropriate that as a condition of permit issuance, the operator Brook Mine will be required at its expense to install and maintain appropriate seismic monitoring during blasting. Such condition shall read substantially as follows:

Brook Mine shall install and maintain seismic monitoring as directed by DEQ on the property of any residential homeowner who requests such monitoring and lives within one-half mile of the permit boundary. Brook Mine shall share all data or information collected from such monitoring with the DEQ and with the homeowner requesting the monitoring.

Alluvial Valley Floors:

36. DEQ Exhibit #16 reflects that DEQ has designated a significant area adjacent to the Brook Mine as "Potential AVF" (alluvial valley floor). The regulations provide that alluvial valley floors are subject to greater protections.
37. DEQ Exhibit #16 reflected that this "potential AVF" was not formally classified by DEQ as AVF due to claims of access being denied by landowners in the area. (*Kristiansen Testimony Vol. II @pg. 304*)
38. On cross-examination, BJ Kristiansen, could not or would not name one landowner who had refused DEQ access for purposes of determining if their property was classified as AVF and admitted that the Objectors such as the Fishers, Mr. Bocek and Mr. Buyok had not denied DEQ access nor had DEQ even asked for access. (*Kristiansen Testimony Vol. II @pgs. 303-305*)
39. DEQ admitted that the lands labeled as "Potential AVF" on DEQ #16 and shown in Fisher Exhibit #1 are "probably" alluvial valley floor lands although DEQ has not yet designated them as such. *Id.*
40. DEQ admitted there could be communication between the coal seam aquifers and the alluvial valley floor aquifers and therefore DEQ could not say that material damage to the AVF aquifer would not happen as a result of mining. *Id.*
41. **For the above reasons, the EQC finds that it is reasonable and appropriate that as a condition of permit issuance, the DEQ shall seek access from all willing landowners and perform a formal assessment of whether the areas it has already designated as "Potential AVF" in DEQ Exhibit #16 qualify for formal designation as AVF, and the**

EQC directs the DEQ to do so and further determine if additional alluvial valley aquifer monitoring wells should be required in this area.

Domestic Water Wells:

42. Draw-down in domestic/stock water wells are predicted to be as much as 25 feet. (*Kuchanur Testimony Vol. III @ pg. 541 and DEQ Exhibit 12-251, Table 4.9-1*)
43. Expert Wireman testified that due to the confined nature of the coal aquifer, even a small reduction in the water available could have a material impact on domestic water users such as the Fishers who obtain their water from the coal seam. (*Wireman Testimony, Vol. VI @ pgs. 1382-85*)
44. Landowner John Buyok testified that in times of prolonged drought his water well became incapable of producing water and pumped only sediment from the bottom of the well. (*Buyok Testimony, Vol. V, @ pgs. 1038-39*). This testimony is consistent with the description and concerns expressed by Mr. Wireman.
45. Brook Mine has committed in its mine plan to remedy any material damage to the quantity or quality of the water in the domestic water wells for landowners within one-half mile of the permit boundary. (*See Brook Mine Permit*)
46. The EQC determines that it is appropriate that the permit should contain a condition which further defines Brook's obligations in the event a domestic/stock water well is materially harmed in quantity or quality. Such condition shall read as follows:

In the event DEQ determines there is a reasonable basis to conclude that mining operations have caused material damage to the quantity or quality of water in a domestic water well located in the permit area or within one-half mile of the permit boundary, Brook shall supply substitute water of the same or better quality and quantity as previously existed, including drilling a replacement well when appropriate.

Conditions Conceded by Brook and DEQ Which Must Be Incorporated In The Permit:

47. DEQ and Brook Mine have agreed that it would be appropriate to include both registered and adjudicated wells in the mine plan. (*DEQ Answer To Fishers' Interrogatory No. 10* (attached as Exhibit B); *Kristiansen Testimony Vol. II @ pgs. 290-291*; *Barron Testimony Vol. IV @ pg. 800*; *Kuchanur Testimony Vol. III @ pgs. 500-501*)
48. DEQ has agreed to amend the mine plan to include additional monitoring stations upstream and downstream of the Tongue River. (*DEQ Answer To Fishers' Interrogatory No. 11* (attached as Exhibit B); *Kristiansen Testimony Vol. II @ pg. 290*; *Barron Testimony Vol. IV @ pg. 800*; *Kunze Testimony Vol. II @ pgs. 411-412*)

49. Matt Kunze from DEQ further recommended that there be a monitoring site on Goose Creek to have additional data to ensure a more accurate interpretation of the upstream-downstream comparison in the Tongue River. (*Kunze Testimony Vol. II @ pg. 412*)
50. **Therefore, all three of the above conditions should be incorporated in the Brook Mine Plan.**

DEQ's and Brook Mine's Acceptance Of Conditions Imposed by EQC:

51. Importantly, throughout the contested case hearing in this matter, both DEQ and Brook Mine (through its engineer Jeff Barron) repeatedly agreed to comply with conditions that EQC deemed appropriate and reasonable. Mr. Barron testified that conditions could be "useful information for the council" and conditions would be "welcome" and "accepted". (*Barron Testimony Vol. IV @ pgs. 779-780, 781-788. See also references above regarding DEQ acknowledgments and Kristiansen Testimony Vol. II @ pg. 291*)

B. CONCLUSIONS OF LAW RELATIVE TO THE CONDITIONS:

1. Wyoming DEQ and the EQC are empowered to place conditions on the issuance of a coal mining permit which relate to blasting, seismic monitoring and blasting during certain atmospheric conditions by virtue of the fact that Chapter 2 of the Land Quality Division Rules-Coal relating to "Application Requirements" requires that the operator submit a blasting plan acceptable to the DEQ. Wyo. Admin. Rules, DEQ-LQD, Coal, Ch. 2 §5(a)(vii).
2. Wyoming DEQ and EQC are empowered to place conditions on issuance of a coal mining permit which assure financial responsibility for environmental obligations. The Environmental Quality Act's stated goal and the policy of Wyoming are to ensure proper reclamation of disturbance and the protection of the quality of Wyoming's land, air and water. See §35-11-102 et. seq. Hence, requiring sufficient financial surety for such obligations, such as requiring that a parent or related company to the applicant provide a financial guarantee of the reclamation and environmental obligations of an applicant, is within the power of the agency.
3. Wyoming DEQ and EQC are empowered to place a condition on issuance of a coal mining permit requiring that appropriate and proper subsidence investigation and mitigation are undertaken as part of issuing a permit, because a Subsidence Control Plan is a required part of any such application involving a component of underground mining. Wyo. Admin. Rules, DEQ-LQD-Underground Coal Mines, Ch. 7 §1(a)(v).
4. Wyoming DEQ and EQC are empowered to place a condition on issuance of a coal mining permit requiring that appropriate and proper hydrologic studies, monitoring and protections be regulated as part of issuing a permit so as to prevent material damage to hydrologic

balance outside the permit area and protections in the event of such damage. Wyo. Stat. §35-11-406(n)(iii) (LexisNexis 2015).

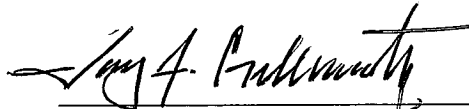
5. DEQ and the EQC are empowered with the designation and protection of alluvial valley floors through the permitting and enforcement process. Wyo. Stat. §35-11-406(n)(v) (LexisNexis 2015).

IV. CONCLUSION

There have been insufficient studies done to demonstrate that the proposed mine plan will not cause material damage to the hydrologic balance in this historic and important river valley, and the application is thus incomplete and must be denied at this time pending a more scientific and reasoned assessment of the risks. In the event the permit is allowed to proceed, it must only be allowed to do so with the critical conditions set forth above which provide protection for the rugged and resilient landowners who have been here for decades and for the valuable air, land and water resources of the State of Wyoming.

DATED this 24th day of July, 2017.

YONKEE & TONER, LLP



Jay A. Gilbertz, WSB # 63087

Attorney for Objector Fishers

319 West Dow Street

P.O. Box 6288

Sheridan, WY 82801

Telephone: (307) 674-7451

Telefax: (307) 672-6250

CERTIFICATE OF SERVICE

I, Jay A. Gilbertz, hereby certify that on the 24th day of July, 2017, I served a true and correct copy of the above and foregoing *by electronic transmission*, duly addressed as follows:

Andrew Kuhlmann
James LaRock
Wyoming Attorney General's Office
andrew.kuhlmann@wyo.gov
James.larock@wyo.gov

Todd Parfitt
Director, DEQ
Todd.Parfitt@wyo.gov

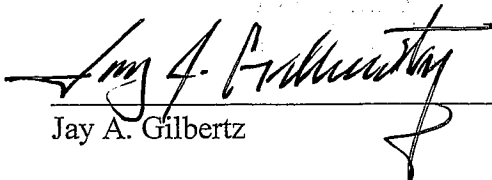
Alan Edwards
Deputy Director, DEQ
Alan.edwards@wyo.gov

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Powder River Basin Resource Council
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Lynnette J. Boomgaarden
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lboomgaarden@crowleyfleck.com
cgregersen@crowleyfleck.com


Jay A. Gilbertz

2015

Limited Liability Company Annual Report

Due on or Before: August 1, 2015
ID: 2013-000649463
State of Formation: Wyoming
License Tax Paid: \$50.00
AR Number: 02202090

For Office Use Only

Wyoming Secretary of State
200 West 24th Street, Cheyenne, WY 82002-0020
307-777-7311
<https://wyobiz.wy.gov/Business/AnnualReport.aspx>

Brook Mining Company, LLC

1: Mailing Address

1101 Sugarview Dr Suite 201
Sheridan, WY 82801

2: Principal Office Address

1101 Sugarview Dr Ste 201
Sheridan, WY 82801

Phone: (307) 674-8000
Email: bubernosky@umpllc.com

Current Registered Agent:

Throne Law Office, P.C.
424 N Main St Ste 201
Sheridan, WY 82801

• Please review the current Registered Agent information and, if it needs to be changed or updated, complete the appropriate Statement of Change form available from the Secretary of State's website at <http://soswy.state.wy.us>

I hereby certify under the penalty of perjury that the information I am submitting is true and correct to the best of my knowledge.

byron wayne ubernosky
Signature

byron wayne ubernosky
Printed Name

March 13, 2015
Date

The fee is \$50 or two-tenths of one mill on the dollar (\$.0002), whichever is greater.

Instructions:

1. Complete the required worksheet.
2. Sign and date this form and return it to the Secretary of State at the address provided above.

FILED

MAY 25 2017

Jim Ruby, Executive Secretary
Environmental Quality Council

EXHIBIT A

offered by
Fishers

2016

Limited Liability Company Annual Report

Due on or Before: August 1, 2016
ID: 2013-000649463
State of Formation: Wyoming
License Tax Paid: \$50.00
AR Number: 02484643

For Office Use Only

Wyoming Secretary of State
2020 Carey Avenue, Cheyenne, WY 82002-0020
307-777-7311
<https://wyobiz.wy.gov/Business/AnnualReport.aspx>

Brook Mining Company, LLC

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424 N Main St Ste 201
Sheridan, WY 82801

• Please review the current Registered Agent information and, if it needs to be changed or updated, complete the appropriate Statement of Change form available from the Secretary of State's website at <http://soswy.state.wy.us>

I hereby certify under the penalty of perjury that the information I am submitting is true and correct to the best of my knowledge.

Byron Ubernosky

Signature

Byron Ubernosky

Printed Name

April 25, 2016

Date

The fee is \$50 or two-tenths of one mill on the dollar (\$.0002), whichever is greater.

Instructions:

1. Complete the required worksheet.
2. Sign and date this form and return it to the Secretary of State at the address provided above.

FILED

MAY 25 2017

Jim Ruby, Executive Secretary
Environmental Quality Council

offered by
Fishers JR

2017

Limited Liability Company Annual Report

Due on or Before: August 1, 2017
ID: 2013-000649463
State of Formation: Wyoming
License Tax Paid: \$50.00
AR Number: 02868255

For Office Use Only

Wyoming Secretary of State
2020 Carey Avenue, Cheyenne, WY 82002-0020
307-777-7311
<https://wyobiz.wy.gov/Business/AnnualReport.aspx>

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Current Registered Agent:

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424 N Main St Ste 201
Sheridan, WY 82801

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Phone: (307) 674-8000

Email: bubernosky@umpllc.com

I hereby certify under the penalty of perjury that the information I am submitting is true and correct to the best of my knowledge.

byron ubernosky
Signature

byron ubernosky
Printed Name

June 19, 2017
Date

The fee is \$50 or two-tenths of one mill on the dollar (\$.0002), whichever is greater.

Instructions:

1. Complete the required worksheet.
2. Sign and date this form and return it to the Secretary of State at the address provided above.

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Senior Assistant Attorney General
James LaRock (Wyo. Bar No. 7-5814)
Assistant Attorney General
Wyoming Attorney General's Office
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Attorneys for the State of Wyoming
Department of Environmental Quality

**BEFORE THE ENVIRONMENTAL QUALITY COUNCIL
STATE OF WYOMING**

IN RE BROOK MINE APPLICATION

)

)

Dockets 17-4802 (Consolidated)

TFN 6 2-025

)

DEPARTMENT OF ENVIRONMENTAL QUALITY'S RESPONSE TO OBJECTORS
MARY BREZIK-FISHER AND DAVID FISHER'S INTERROGATORIES

Respondent, the State of Wyoming, Department of Environmental Quality ("Department"), through its undersigned counsel, hereby responds to Mary Brezik-Fisher and David Fisher's, Interrogatories. The following Discovery Responses are provided in accordance with Chapter 2, Sections 10 and 14 of the Department of Environmental Quality's and the Environmental Quality Council's Rules of Practice and Procedure, and Wyoming Rules of Civil Procedure 26 and 33.

INTERROGATORIES

INTERROGATORY NO. 1: Identify the basis for a determination by DEQ that geotechnical studies demonstrate a scientific basis for the conclusion that the proposed Mine Plan for Brook Mine does not present a risk of subsidence, sloughing or other geotechnical risks and the specific and mandatory requirements of the Mine Plan which dictate how the operator is obligated to respond in the event geotechnical problems are encountered. Your answer should include the name, address, and telephone number of all individuals or companies which DEQ is aware of that conducted Geotechnical studies for the purpose of investigating the geotechnical conditions in the area where Brook Mine proposes to conduct mining activities, whether the DEQ has conducted its own studies and the DEQ's basis for relying on any studies submitted by Brook Mine.

EXHIBIT B

Environmental Quality Council hearings. This interrogatory would also require DEQ to provide disclosures prior to the timeline established in the scheduling order in this matter. Additionally, this interrogatory requests information protected by work product and attorney-client privilege.

Moreover, this interrogatory is vague, overly broad, and unduly burdensome to the extent that it requests all documents supplied to, and "all other documents of any sort reviewed" by DEQ expert witnesses. DEQ's expert witnesses have not been specifically retained to provide expert testimony in this matter and therefore the documents they have reviewed or had available to them include all of DEQ's files regarding this permit application extending over the long period during which DEQ has reviewed the permit application.

Without waiving these objections, with respect to subparagraph #1, DEQ has already provided this information in its expert witness disclosures provided to the parties.

With respect to subparagraph #2, DEQ has already provided this information in its expert witness disclosures provided to the parties. DEQ reserves its right to provide its witness disclosures according to the scheduling order and the Rules of Civil Procedure.

With respect to subparagraph #3, this information can be found in documents produced in response to Request for Production 5.

With respect to subparagraph #4, this information can be found in document produced in response to Request for Production 5.

With respect to subparagraph #5, all of the expert witnesses designated by DEQ are employees of the agency and were not specifically retained to provide expert testimony in this case. DEQ's expert witnesses have reviewed and had available to them the permit application and its related files. DEQ experts have also reviewed or had available to them correspondence, email, and other documents exchanged between DEQ, its counsel, and those experts are privileged work product, attorney-client communication, or documents covered by the deliberative process privilege. It is unduly burdensome and unreasonable for DEQ to identify each document that its witnesses may have reviewed or had available to them over the last five years.

INTERROGATORY NO. 10: Identify whether the mine plan requires that domestic and stock wells which are impacted or damaged by mine operations will be repaired and/or replaced if the wells are "registered" with the Wyoming State Engineer's Office as opposed to being "adjudicated".

ANSWER:

The Brook Mine permit application, Mine Plan MP 5.8 currently states, "If any adjudicated water rights are determined to be effected by the dewatering process of the Brook Mine, that water right will be replaced with a water source of similar quantity and quality as required by Wyoming Statute §35-11-415(b)(xii), until such time that the original surface water right's functionality is restored." Based on the comments received during the public notice period, LQD will require the mine to revise the above language to include all wells that are registered with the Wyoming State Engineer's Office.

INTERROGATORY NO. 11: Identify the locations of all monitoring stations on the Tongue River which are included in the mine plan and include in your answer whether monitoring

stations are located upstream and downstream of the permit boundary and why DEQ considers the identified stations adequate to monitor for potential adverse impacts on the Tongue River by the Brook mining operation.

ANSWER:

As noted in Mine Plan Section MP.7.1 and Table MP.7-1 of the Brook Mine Permit Application, the Tongue River at two existing USGS stations outside the permit boundary (Station No. 06299980 – *Tongue River at Monarch, WY* and Station No. 06306300 - *Tongue River at State Line near Decker, MT*) will be part of the operational monitoring plan during the mining phase of the permit. The location of the USGS Station No. 06299980 is shown in Mine Plan Exhibit MP.7-1 of the Brook Mine permit application. The location of the USGS Station No. 06306300 is shown in Appendix D6 Exhibit D6.1-1 of the Brook Mine permit application. USGS Station No. 06299980 is not located upstream of the permit boundary; it is located downstream of the confluence of Slater Creek and the Tongue River. USGS Station No. 06306300 is located downstream of the permit boundary in Montana, just north of the Wyoming state line.

Based on the comments received during the public notice period, LQD may recommend revising the locations of monitoring stations on the Tongue River and Goose Creek.

INTERROGATORY NO. 12: What is DEQ's current understanding of the annual and total coal production estimates presented by Brook Mine and/or Ramaco representatives in the first five years of production, and since those estimates appear to have changed over time, explain how DEQ has been able to accurately evaluate the potential impacts to air quality, water quality and resources, and land resources?

ANSWER:

The production estimates in the Brook Mine permit application are located in Table MP.2-1. DEQ's understanding is that the estimates in that table are current.

INTERROGATORY NO. 13: How many surface coal mine applications and permits for new surface coal mines, including highwall mining, in the State of Wyoming have the DEQ offices in Wyoming and the DEQ offices in Sheridan County reviewed and evaluated within the last twenty years?

ANSWER:

During the past 20 years, LQD has reviewed and approved 4 new permit applications, 2 of which were processed by the Sheridan District 3 office. Also during the past 20 years, the LQD has reviewed and approved 46 permit amendments, which add new area to an existing permits. The Sheridan District 3 office has processed 29 of the 46 permit amendments. The information submitted by applicants and reviewed/approved by LQD is the same for an amendment and for a new application, with the only difference being that an amendment is not assigned a new permit number. In fact, amendments may be more complex than a new permit because the mine plan and reclamation plan have to combine with the existing permit.

Verification

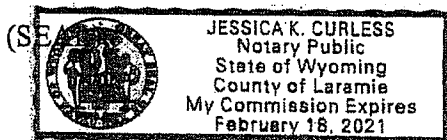
I, Alan Edwards, the Deputy Director of the Wyoming Department of Environmental Quality, have reviewed the Wyoming Department of Environmental Quality's responses to Objector Mary Brezik-Fisher and David Fisher's interrogatories, and I hereby confirm that they have been prepared under my direction and are true and correct to the best of my knowledge and belief.

Alan Edwards

STATE OF WYOMING)
) ss
COUNTY OF LARAMIE)

Subscribed and sworn to before me this 20th day of April, 2017 by
Alan Edwards.

Jessica K. Curless
Notary Public



My Commission Expires: Feb. 18, 2021

From: Wendy Drake
To: Andrew.kuhlmann@wyo.gov; James.larock@wyo.gov; Alan.edwards@wyo.gov; TLSansonetti@hollandhart.com; INSutphin@hollandhart.com; JSPope@hollandhart.com; jmkelley@hollandhart.com; csvec@hollandhart.com; Todd.Parfitt@wyo.gov; sanderson@powderriverbasin.org; jGilbertz@yonkeetoner.com; Jim.ruby@wyo.gov
Cc: Lynne.Boomgaarden; Clayton.Gregersen
Subject: EQC 17-4802: Big Horn Coal Company's Proposed Findings of Fact and Conclusions of Law
Date: Monday, July 24, 2017 4:49:20 PM
Attachments: [BHC Proposed FOF and COL.PDF](#)

Good afternoon,

Please find attached *Big Horn Coal Company's Proposed Findings of Fact and Conclusions of Law* filed with the EQC this afternoon in Docket No. 17-4802.

Thank you.

Wendy Drake
Assistant to Lynne Boomgaarden,
Amanda H. Newton, and Blake A. Klinkner
307-772-4846
wdrake@crowleyfleck.com

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*ATTORNEYS FOR OBJECTOR
BIG HORN COAL COMPANY*

**BEFORE THE ENVIRONMENTAL QUALITY COUNCIL
STATE OF WYOMING**

IN RE BROOK MINE APPLICATION)
) **Docket Nos. 17-4802, 17-4803,**
) **and 17-4804 (Consolidated)**
TFN 6 2-025)

**BIG HORN COAL COMPANY'S PROPOSED FINDINGS OF FACT AND
CONCLUSIONS OF LAW**

Big Horn Coal Company, LLC ("Big Horn"), by and through its undersigned counsel of record, hereby submits its Proposed Findings of Fact and Conclusions of Law as directed by the Environmental Quality Council's ("EQC" or the "Council") order following the close of evidence at hearing.

INTRODUCTION

The permit application submitted by Brook Mining Company, LLC ("Brook Mine") fails to meet the legal requirements of a surface coal mining permit application. Brook Mine's multiple failures to provide critical and required information in its permit application are not minor omissions. Rather, these failures are "deficiencies" that preclude permit approval. The EQC therefore should enter its Findings of Fact, Conclusions of Law,

and Order directing the Department of Environmental Quality (“DEQ”) to either deny Brook Mine’s requested permit, or deem the permit application deficient and require Brook Mine to affirmatively address each of the deficiencies, resubmit its permit application to DEQ, and then republish notice of the compliant permit application for public comment pursuant to the Environmental Quality Act (“EQA”), Wyo. Stat. Ann. § 35-11-406(h)-(k),¹ and the applicable rules and regulations.

I. Background

The record of this contested case hearing patently demonstrates that Brook Mine has spent over three years preparing a permit application that fails to meet statutory and regulatory requirements. Less critical for this Council’s decision, but an important consideration nonetheless, throughout the permit application process and in the hearing before the EQC, Brook Mine consistently demonstrated it has no intent to seriously consider the objections and concerns of nearby landowners or otherwise address the deficiencies in its permit application. It is now up to this Council to do so.

Broadly speaking, this Council must determine whether Brook Mine has satisfied its burden to affirmatively establish that its permit application is legally sufficient and direct whether (and on what terms) the permit application can proceed to the DEQ for final written findings and eventual issuance or denial. *See* Wyo. Stat. Ann. § 35-11-406(k), (p). To be sure, it is not the burden of Big Horn or any other objector to establish that the permit application is insufficient. Brook Mine readily admits it bears the burden of proof in these

¹ According to Wyo. Stat. Ann. § 35-11-103(e)(xxiv) “‘Deficiency’ means an omission or lack of sufficient information serious enough to preclude correction or compliance by stipulation in the approved permit to be issued by the director[.]”

proceedings, which includes the burden of proving to the Council that its permit application is complete and without deficiencies. *See Brook Mine's Brief on Statutes and Regulations that the Council Must Consider*, p. 10. Yet when objectors identified application deficiencies at hearing, Brook Mine never showed the Council or the objectors where the required information could be found in the permit application, nor did Brook Mine demonstrate that the information contained in the application is accurate and complete. Brook Mine instead attempted to silence or cast doubt on objector testimony, and addressed the identified deficiencies in generalities – affirming the type of information contained in the application, how many pages the application contains, and how long Brook Mine and DEQ personnel spent preparing and reviewing the application. Generalities do not satisfy Brook Mine's burden of proof.

The law requires Brook Mine's permit application to stand on its own. Analytical gaps, missing data and inaccurate information required by law to be included in a surface coal mine permit application simply cannot be remedied with testimonial assurances or by reference to DEQ's review process. Moreover, specific surface coal mine application requirements cannot be satisfied with inaccurate assumptions resulting from limited data taken from a large, data diverse geographic area. Brook Mine's permit application itself must contain the information required by statute and regulation. The required data and analysis is either present in the permit application or it is not. Without establishing that its permit application contains ***all*** required information, and that ***all*** the required information is ***accurate***, Brook Mine fails to meet its burden as a matter of law.

II. Scope of the Council's Review

As this Council is well aware from prior briefing, the parties disagree as to the proper role of the Council and the scope of its review and decision, particularly as to whether the Council is to consider the requirements of section -406(n) and whether the Council is to direct DEQ to approve or deny Brook Mine's permit application at this time. The Council is now well aware of precedent² and the parties' respective positions on this issue, and Big Horn will not repeat those arguments here. Because the Council has declined to rule on whether it will consider Section -406(n)'s requirements prior to the parties' submission of proposed findings of fact and conclusions of law, Big Horn will present its proposed conclusions of law related to section -406(n) requirements separate from its proposed conclusions of law related to the legal requirements for surface coal mine permit applications found elsewhere in the EQA and the DEQ's Land Quality coal rules and regulations. All parties do seem to agree that the Council must review and consider whether Brook Mine's permit application satisfies Wyo. Stat. Ann. § 35-11-406(a)-(k) and the DEQ's Land Quality coal rules and regulations. *See* Briefs of the Parties in response to the Council's *Briefing Order*, dated June 13, 2017.

III. Scope of Big Horn's Objections to Brook Mine's Permit Application

Brook Mine (also often denominated RAMACO in permit documents or testimony) plans to develop coal resources via both open pit and highwall/auger mining methods. DEQ

² See Exhibit 1 to *Brook Mine's Response Brief to Big Horn Coal's Brief Regarding the Scope of the [EQC's] Review and Request for Oral Argument* (demonstrating that in *The Matter of Objections to Amax Coal Company, Eagle Butte Mine, TFN 1 6/212*, the Council specifically made findings of fact and conclusions of law related to the requirements of Section -406(n), and ordered DEQ to take specific action on the permit application).

Exh. 12, p. 12-192. Big Horn is the owner of surface lands, including valuable improvements and facilities, located within Brook Mine's proposed permit area. BHC Exh. 2; Tr. Vol. IV, p. 840, ln. 7-25, p. 840, ln. 1-18. Big Horn also holds an existing coal mine permit that overlaps Brook Mine's proposed permit area and imposes certain reclamation responsibilities on Big Horn, which are enforceable by DEQ. Tr. Vol. IV, p. 836, ln. 11-16. Big Horn's objections to Brook Mine's permit application therefore are reasonably focused on Brook Mine's proposed operations within this overlapping area, more particularly known as the TR-1 mining area, located in in the SE¼ of Section 15 and the NE¼ of Section 22, Township 57 North, Range 84 West, 6th P.M. *See Figure 1; see also* DEQ Exh. 12, p. 12-134, Tr. Vol. II, p. 204, ln. 10-13.

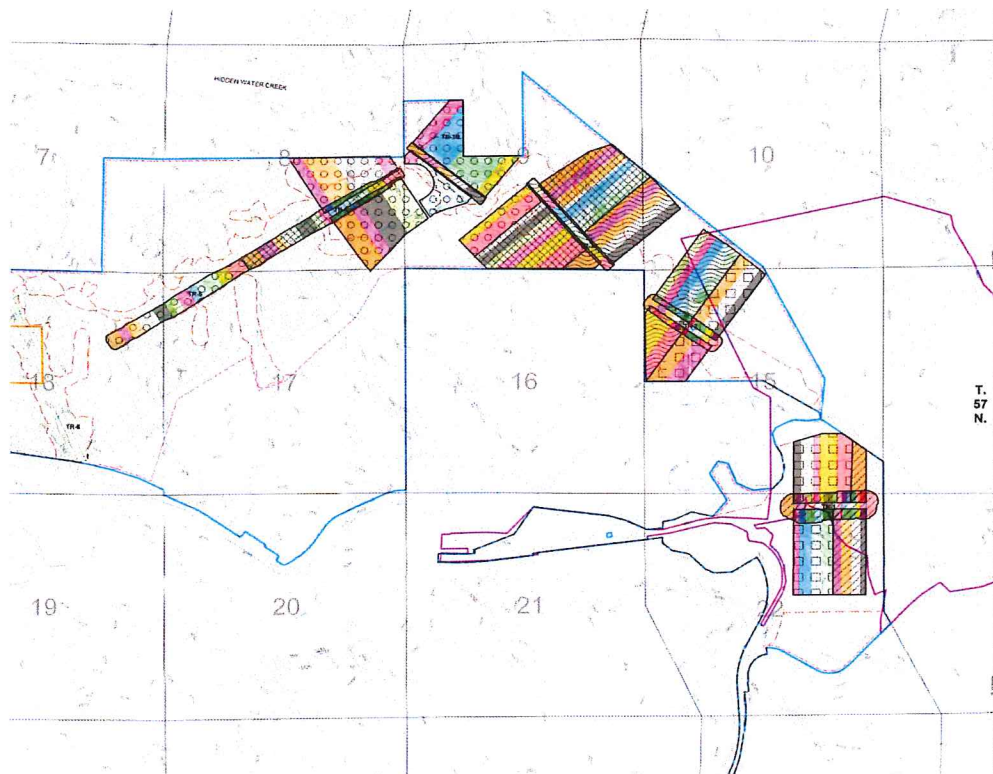


Figure 1. Taken from DEQ Exh. 12, p. 12-134 and showing the TR-1 mining area as the southeastern most mining area.

Evidence of record indisputably demonstrates that Brook Mine failed to provide required, accurate TR-1 area information in its surface coal mine permit application. The evidence further demonstrates that Brook Mine has not satisfied certain legal requirements related to surface water monitoring, underground coal fire analysis and management, overlapping permit boundary analysis and management, and surface owner protection bonding. These requirements must be satisfied prior to permit approval and issuance.

More specifically, Brook Mine's permit application contains and relies on inaccurate, missing or inadequate data and analysis for the TR-1 area, predominantly as it relates to the geology and groundwater located in the overburden above the coal seams Brook Mine proposes to mine. Without complete and accurate information as to the TR-1 area and the projected impacts thereto, and without detailed plans regarding the monitoring of these impacts, it is impossible for Brook Mine, DEQ, Big Horn, or the public to adequately assess Brook Mine's proposed mining operations or the resulting impacts.

The Council cannot fairly or reasonably characterize the flaws in Brook Mine's surface coal mine permit application as minor omissions that can be cured by stipulation or minor permit revisions. *See* Wyo. Stat. Ann. §§ 35-11-103(e)(xxiv); -406(h). The inaccurate, incomplete and missing geologic and hydrologic TR-1 area information constitute legal deficiencies in Brook Mine's permit application. The EQA does not tolerate such deficiencies. The permit application itself must include complete and accurate information, the DEQ must analyze complete and accurate information, and the

public must have the opportunity to review and comment on complete and accurate information *prior to* permit approval. Wyo. Stat. Ann. § 35-11-406(h) – (k).³

Accordingly, the Council must order Brook Mine to cure the deficiencies in its mine permit application by preparing, resubmitting to DEQ, and eventually republishing a legally sufficient surface mine permit application. At the very least, all deficiencies must be cured to the DEQ's and EQC's satisfaction prior to Brook Mine conducting any mining operations.⁴

IV. Relevant Legal Requirements

The following list sets forth the EQA and DEQ Land Quality – Coal Rules and Regulations permit application requirements specifically related to Big Horn's objections.⁵

i. Hydrology and Geology

- **Wyo. Stat. Ann. § 35-11-406(a)(vii)** - A general description of the land which shall include as nearly as possible ... if known, the nature and depth of the overburden, topsoil, subsoil, mineral seams or other deposits and any subsurface waters known to exist above the deepest projected depth of the mining operation.
- **Wyo. Stat. Ann. § 35-11-406(b)(v), (xvi), (xviii)** - A mine and reclamation plan dealing with the extent to which the mining operation will disturb or change the lands

³ Because Brook Mine intends to begin its mining operations in the TR-1 area, *see* DEQ Exh. 12, p. 12-134, any suggestion that Brook should be allowed to gather TR-1 area information and cure the TR-1 related permit application deficiencies following permit approval and/or the initiation of mining operations would risk unforeseen and permanent environmental damage and violate the EQA and DEQ Land Quality Division rules and regulations.

⁴ In its proposed *Conclusions of Law* below, Big Horn provides the Council alternative conclusions in the form of conditions intended to address the deficiencies in Brook Mine's permit application prior to the initiation of mining operations.

To be clear, Big Horn asserts that Brook Mine's permit application is deficient and not eligible for approval under the express provisions of the EQA. Big Horn only offers the proposed conditions as minimal, necessary steps that must be taken in the event the Council orders the DEQ to make its remaining findings and issue the permit.

⁵ All rules and regulations cited herein represent DEQ's, Land Quality – Coal Rules and Regulations. For brevity, the rules and regulations will be referred to herein by Chapter and Section number only.

to be affected and the plan whereby the operator will reclaim the affected lands, to include:

- A map setting forth the drainage plan on, below, above and away from the affected land including subsurface water above the mineral seam to be removed; and further showing the location of all waste water impoundments, any settling ponds, and other water treatment facilities, constructed drainways and natural drainways, and the surface bodies of water receiving this discharge.
 - A statement of the source, quality and quantity of water, if any, to be used in the mining and reclamation operations.
 - A plan to minimize the disturbances to the prevailing hydrologic balance at the minesite and in associated offsite areas and to the quality and quantity of water in surface and ground water systems both during and after mining operations and during reclamation.
- **ENV LQC Ch. 2 § 4(a)(vii), (viii), (x)(A), (xii), (xiv)** - A description of the lands to be affected within the permit area and how these lands will be affected, to include:
- A detailed description of the geology within the proposed permit area down to and including any aquifer⁶ to be adversely affected by mining below the lowest coal seam to be mined, to include structural geology that may influence the required reclamation, and the occurrence, availability, movement, quantity, and quality of potentially affected surface and groundwaters.
 - For the permit area, and adjacent areas, a characterization of the geologic strata down to and including the deeper of either the stratum immediately below the lowest coal seam to be mined, or any aquifer below the lowest coal seam to be mined that may be adversely impacted by mining, to include a statement of the results of test boring holes or core samples collected to show:
 - The location of any groundwater; and
 - Lithologic characteristics and thickness of each stratum and coal seam.
 - A description of the overburden, including the thickness, geological nature or any other factor that will influence the mining or reclamation activities.
 - Complete information on groundwater that may be affected in the permit area or adjacent areas, to include:

⁶ ENV LQC Ch. 1 § 2(j), defines “aquifer” as “a zone, stratum or group of strata that stores and transmits water in sufficient quantities for a specific use.” Nothing in this definition requires that water in a particular zone or stratum be currently used in order to qualify as an aquifer.

- An estimate of the depth and quantity of any groundwater existing in the proposed permit area down to and including the strata immediately below the lowest mineral seam to be mined, for which the operator may be required to conduct testing in order to determine the exact depth, quantity and quality of groundwater in geological formations affected by the mining operations;
 - The lithology and thickness of all known aquifers; and
 - The recharge, storage, and discharge characteristics of the groundwater, all according to the parameters and detail required by the Administrator of the Land Quality Division.
- A description of the surface water and groundwater and related geology in the permit area and general area sufficient to assess the probable hydrologic consequences (PHC). And if the determination of the PHC required by Chapter 19, Section 2(a)(i) indicates that adverse impacts on or off the proposed permit area may occur to the hydrologic balance, then information supplemental to that required under (a)(xi) and (a)(xii) of this Section (requiring complete surface and groundwater information) must be provided to evaluate such PHC and to plan remedial and reclamation activities.
- **ENV LQC Ch. 2 § 5(a)(x)** - A determination of the PHC of the proposed operation on the hydrologic regime and the quantity and quality of surface water and groundwater systems within the permit area and the general area consistent with the information required in Chapter 19, Section 2. The PHC determination shall be based on baseline hydrologic, geologic and other information collected for the permit application and may include data statistically representative of the site. This determination shall specifically address potential adverse hydrologic consequences and describe preventive and remedial measures.
- **ENV LQC Ch. 2 § 5(a)(ix)(C), (D)** - A plan to ensure the protection of the quantity and quality of, and rights to, surface water and groundwater both within and adjacent to the permit area, to include:
 - A plan to restore the approximate recharge capacity of the permit area in accordance with Chapter 4, Section 2(h), which requires the groundwater recharge capacity of reclaimed lands to be restored to a condition that provides a recharge rate approximating the pre-mining recharge rate; and
 - A Surface Water Monitoring Plan based on the PHC determination and the analysis of all baseline hydrologic, geologic, and other information in the permit application.
 - The plan must provide for the monitoring of parameters that relate to the suitability of the surface water for current and approved postmining

land uses and to the objectives for protection of the hydrologic balance as set forth in subsection 5(a)(ix) of Chapter 2.

- The plan must identify the surface water quantity and quality parameters to be monitored, sampling frequency, and site locations, and describe how the data may be used to determine the impacts of the operation upon the hydrologic balance.
- A Ground Water Monitoring Plan based on the PHC determination and the analysis of all baseline hydrologic, geologic, and other information in the permit application.
 - The plan must provide for the monitoring of parameters that relate to the suitability of the groundwater for current and approved postmining land uses and to the objectives for protection of the hydrologic balance set forth in subsection 5(a)(ix) of Chapter 2.
 - The plan must identify the quantity and quality parameters to be monitored, sampling frequency, and site locations, and describe how the data may be used to determine the impacts of the operation upon the hydrologic balance.
- **ENV LQC Ch. 2 § 6(b)** - A reclamation plan that describes how the operator will reclaim the affected lands to the proposed postmining land use in accordance with Chapter 4, Section 2(a), which requires restoration of the land to a condition equal to or greater than the highest previous use.
- **ENV LQC Ch. 19 § 2(a)(i)** - A determination of the projected result of proposed surface coal mining and reclamation operations, both on and off the mine site, which may reasonably be expected to change the quantity or quality of the surface and groundwater; the surface and groundwater flow, timing and availability, the surface and groundwater quality under seasonal flow conditions, including dissolved and suspended solids; and the stream channel conditions. This information shall be in sufficient detail to enable the Administrator of the Land Quality Division to determine the probable cumulative hydrologic impacts on surface and groundwater systems including the impacts resulting from the proposed operation and their interaction with the impacts of all anticipated mining upon all affected hydrologic systems.
 - ii. Underground Coal Fires
- **Wyo. Stat. Ann. § 35-11-406(b)(ix), (xiii)** – A plan for insuring that materials constituting a fire, health or safety hazard uncovered during or created by the mining process are promptly treated or disposed of during the mining process in a manner designed to prevent threats to human or animal health and safety, as well as procedures

proposed to avoid constituting a public nuisance, endangering the public safety, human or animal life.

- **ENV LQC Ch. 2 § 5(a)(iv)** – Contingency plans which have been developed to preclude sustained combustion of any materials constituting a fire hazard.

iii. Blasting Operations

- **Wyo. Stat. Ann. § 35-11-415(b)(xii)(E)** – surface coal mining operators **must**, upon request of a resident or owner, conduct a pre-blasting survey of any man-made dwelling or structure within one-half (1/2) mile of any portion of the permitted area.

iv. Overlapping Permits and Related Agreements

- **ENV LQC CH. 2 § 5(a)(xviii)** – Plans of mine facilities (including overstrip areas) that are to be shared by two or more separately permitted mining operations may be included in one permit application and referenced in the other application(s). Each permittee shall bond the mine facilities unless the permittees sharing it agree to another arrangement for assuming their respective responsibilities. If such agreement is reached, the application shall include a copy of the agreement between or among the parties setting forth the respective bonding responsibilities of each party for the mine facilities.

v. Surface Owner Protection Bond

- **Wyo. Stat. Ann. § 35-11-416(a)** - Where the surface owner is not the owner of the mineral estate proposed to be mined by mining operations, a permit shall not be issued without the execution of a bond or undertaking to the state for the use and benefit of the surface owner or owners of the land, in an amount sufficient to secure the payment for any damages to the surface estate, to the crops and forage, or to the tangible improvements of the surface owner. The amount of the bond shall be determined by the administrator and shall be commensurate with the reasonable value of the surrounding land, and the effect of the overall operation of the landowner. Financial loss resulting from disruption of the surface owner's operation shall be considered as part of the damage.

vi. Wyo. Stat. Ann. § 35-11-406(n) Requirements

- **Wyo. Stat. Ann. § 35-11-406(n)** – The permit applicant must establish that its permit application is in compliance with the EQA and all applicable state laws. No surface coal mining permit shall be approved unless the applicant affirmatively demonstrates and the administrator finds in writing:
 - The application is accurate and complete;

- The reclamation plan can accomplish reclamation as required by the EQA;
- The proposed operation has been designed to prevent material damage to the hydrologic balance outside the permit area.

PROPOSED FINDINGS OF FACT

1. This matter arises from the application of Brook Mining Company, LLC (“Brook Mine”) to the Department of Environmental Quality (“DEQ”), Land Quality Division (“LQD”), for a permit to conduct surface coal mining activities.

2. DEQ/LQD determined Brook Mine’s permit application, TFN 6 2-025, complete and suitable for publication pursuant to Wyo. Stat. Ann. § 35-11-406(h). In accordance with Wyo. Stat. Ann. § 35-11-406(j) and (k), the permit was published to the public and interested parties were required to submit written objections to the application by January 27, 2017. *See Big Horn’s Response to Brook Mine’s Motion to Dismiss Big Horn Coal Company’s Petition for a Contested Case Hearing*, Exhibit D.

3. Objectors in this case, Big Horn Coal Company (“Big Horn”), Powder River Basin Resource Council (“PRBRC”), and Mary Brezik-Fisher and David Fisher, submitted timely objections to the application. *See* BHC Exh. 3; Fisher Exh. 26; PRBRC Exh. 1.

4. Objectors requested an informal conference. DEQ denied these requests, leading to this contested case proceeding. *See Big Horn’s Response to Brook Mine’s Motion to Dismiss Big Horn Coal Company’s Petition for a Contested Case Hearing*, Exhibit A.

5. The Environmental Quality Council (“EQC” or “Council”) conducted a seven (7) day contested case hearing in this matter, receiving evidence regarding the permit

application contents, proposed operations, characteristics of the proposed permit lands, and possible impacts from the proposed operations.

6. Big Horn owns lands and facilities within and immediately adjacent to Brook Mine's proposed permit boundary, particularly the TR-1 mining area and the southeastern portion of the proposed mining area. BHC Exh. 2; Tr. Vol. IV, p. 840, ln. 7-25, p. 840, ln. 1-18. Big Horn owns and operates an industrial shop, rail loadout facility, bridge, access road, and railroad spur on the referenced lands. Big Horn also holds a state coal lease on S½ Section 23 and the N½ Section 26, Township 57 North, Range 84 West, 6th P.M. BHC Exh. 2; *see generally* Tr. Vol. IV, pp. 839-841.

7. Big Horn currently leases its shop to multiple tenants for industrial use and storage. Tr. Vol IV, p. 861, ln. 3-5.

8. Big Horn also holds an existing mining permit, No. 213-T8, that overlaps lands included in Brook Mine's proposed permit boundary. BHC Exh. 2; Tr. Vol. I, p. 78, ln. 7-10. Big Horn maintains a reclamation performance bond with DEQ/LQD on approximately 25 acres of land within Brook Mine's proposed permit boundary. BHC Exh. 5; Tr. Vol. IV, p. 863, ln. 18-22.

9. In its objection letter and at hearing, Big Horn, along with other Objectors, asserted that Brook Mine's permit application fails to meet applicable legal requirements found in the Environmental Quality Act ("EQA"), Wyo. Stat. Ann. §§ 35-11-101 *et seq.*, and DEQ/LQD—Coal Rules and Regulations. BHC Exh. 3. Big Horn primarily focused its objections on the area of the proposed mine overlapping and adjacent to its current

property and facilities, particularly the TR-1 mining area. *See* BHC Exh. 2; Tr. Vol. IV, pp. 841-843; *see generally* Tr. Vol. I-VII.

TR-1 Mining Area and Related Geology and Hydrology

10. Brook Mine proposes to begin mining operations in the TR-1 mining area. *See* DEQ Exh. 12, p. 12-134.

11. The TR-1 mining area is located entirely in the SE¼ of Section 15 and the NE¼ of Section 22, Township 57 North, Range 84 West, 6th P.M., where Brook Mine proposes to cut a highwall trench through the overburden above the targeted coal seams. *See* DEQ Exh. 12, p. 12-134; Tr. Vol. II, p. 204, ln. 10-20.

12. The overburden in the TR-1 mining area is geologically and hydrologically unique and can be distinguished from the overburden in the proposed permit area outside the TR-1 mining area. The TR-1 area overburden is composed of previously mined backfill material and is saturated with groundwater. DEQ Exh. 5, p. 5-014; Tr. Vol. II, p. 205, ln. 8-21, p. 211, ln. 24-25, p. 212, ln. 1-8, p. 214, ln. 7-24.

13. In order to gather data as to the geology in the proposed permit area, including overburden geology, Brook Mine conducted a drilling program consisting of a series of drill holes across the proposed permit area. *See* DEQ Exh. 5 at pp. 5-015, 5-054 through 5-164; Tr. Vol I, p. 87, ln. 6-17, p. 91, ln. 6-10. The drill hole data is found in the permit application at Addendum D5-2. DEQ Exh. 5 at pp. 5-015, 5-054 through 5-164.

14. Brook Mine conducted drill hole testing on a tighter configuration than DEQ's typical 160-acre spacing requirement. Tr. Vol. I, p. 48, ln. 9-10; p. 91, ln. 18-25; p. 92, ln. 1.

15. Brook Mine did not conduct drill hole testing in the TR-1 mining area, nor did it conduct drill hole testing in any part of the approximately 360 acres comprising the SE¼ of Section 15 and the NE¼ of Section 22, Township 57 North, Range 84 West. The permit application contains no geologic data from the distinct overburden within these lands. *See* DEQ Exh. 5, p. 5-054 through 5-164; Tr. Vol. II, p. 210, ln. 5-25, p. 211, ln. 1-23.

16. Brook Mine's permit application does not distinguish the TR-1 area overburden, and does not include specific geological characterization or identification of the TR-1 area overburden, including its geologic strata, nature, structural geology, lithology, thickness, or other factors that may influence mining or reclamation activities. *See* Tr. Vol. II, p. 209 – 211.

17. DEQ/LQD indicated that it intends to impose a permit condition requiring Brook Mine to gather overburden data from the TR-1 area prior to conducting any mining activity or creating any disturbance. Tr. Vol. I, p. 92, ln. 16-23. No such condition is referenced in the permit application or has otherwise been memorialized. *See* Tr. Vol. I, p. 65 ln. 18-25 (stating that DEQ Exh. 1, p. 1-053 contains the location of permit conditions); DEQ Exh. 1, p. 1-053 (showing no current permit conditions placed upon the permit application).

18. Appendix D6 of the permit application (DEQ Exh. 6) contains hydrologic information, including groundwater information. Tr. Vol. I, p. 93, ln. 17-23. Additional groundwater information is located in the Mine Plan, and its groundwater model. *See* DEQ Exh. 12.

19. Appendix D6 of the permit application characterizes the overburden as a whole, repeatedly describing the overburden within the entirety of the proposed permit area as “dry.” *See* DEQ Exh. 6, p. 23-27.

20. The permit application does not characterize any part of the overburden within the proposed permit area as a “potential hydrogeologic unit,” and concedes that Brook Mine installed no groundwater monitor wells and conducted no aquifer tests in any part of the overburden. *Id.*

21. In characterizing all overburden within the proposed permit area as “dry,” the permit application specifically relies on the drill hole logs and data found in Addendum D5-2, which is devoid of data from the TR-1 mining area. *Id.*; DEQ Exh. 5, p. 5-054 through 5-164; Tr. Vol. II, p. 210, ln. 5-25, p. 211, ln. 1-23.

22. DEQ witnesses Kristiansen and Kuchanur, and Big Horn witness Gerlach, all testified that unlike the overburden in the rest of the proposed permit area, the TR-1 area overburden consists of previously mined backfill material, and that this material is saturated with groundwater. *See* Tr. Vol. II, p. 211, ln. 24-25, p. 212, ln. 1-8, p. 214, ln. 7-24; Tr. Vol. III, p. 507, ln. 3-9; Tr. Vol. IV, p. 927-934; *see also* BHC Exh. 8, 9.

23. Nowhere does the permit application differentiate between the previously mined TR-1 area overburden and the overburden in other proposed mining areas which consist of native strata. Tr. Vol. II, p. 205, ln. 8-21, p. 212, ln. 6-19.

24. Brook Mine witness Barron testified that he does not know whether there is groundwater in the TR-1 overburden, Tr. Vol. IV, p. 720, ln. 11-23, and admitted that no

part of Brook Mine's permit application specifically addresses the TR-1 overburden or its groundwater saturation. Tr. Vol. IV, p. 717, ln. 1-4.

25. DEQ witness Kristiansen conceded that the permit application lacks required information as to the TR-1 overburden and its groundwater saturation, and that that the permit application inaccurately characterizes all overburden within the proposed permit area as dry. Tr. Vol. II, p. 214, ln 12-24, p. 216, ln 12-25, p. 217, ln 1-17.

26. Brook Mine's permit application fails to describe groundwater in the TR-1 area overburden. The permit application contains no site-specific data regarding groundwater location, quantity, quality, lithology, or thickness; or its recharge, storage, or discharge characteristics within the TR-1 area overburden. *See* Tr. Vol. II, p. 212, ln. 6-19; Tr. Vol. IV, p. 717, ln. 1-4, p. 720, ln. 19-23.

27. The permit application addresses "Probable Hydrologic Impacts" in section MP.6; groundwater impacts are specifically addressed in section MP.6.2. DEQ Exh. 5, p. 12-055, -059.

28. Section MP.6.2 of the permit application states that mining impacts to the groundwater found in the coal seams, including drawdown and pit inflows, are predicted and discussed in the groundwater model utilized by Brook Mine. *Id.* at 12-060.

29. As to the overburden, section MP 6.2 assumes that the overburden is dry and states that drawdown of groundwater in the overburden was not modeled. *Id.*

30. Brook Mine's "Operation Monitoring Program" is found in the permit application in section MP.7, with groundwater monitoring described in section MP.7.2. *Id.* at 12-062, -064 through -065.

31. Section MP 7.2 of the permit application states, “[g]roundwater monitoring during mining operations will be a continuation of the monitoring program” discussed in Appendix D6. *Id.* at 12-064. Appendix D6 states that no monitor wells exist to monitor the overburden. DEQ Exh. 6, p. 6-023 through -027.

32. The permit application contains no description or assessment of the hydrologic impacts of the proposed mining operations to the groundwater in the TR-1 overburden, and provides no plan whereby Brook Mine will monitor the hydrologic impacts of the proposed mining operations on groundwater in the TR-1 area overburden. *See generally* DEQ Exh. 5 and 12; *see also* Tr. Vol. IV, p. 717, ln. 1-4.

33. The groundwater model utilized by Brook Mine to support its permit application is discussed in Addendum MP-3 of the Mine Plan. DEQ Exh. 12, p. 12-183 through -294.

34. The groundwater model was designed to analyze the potential cumulative hydrological effects of the project and simulate the regional groundwater impacts from the proposed mining operations. DEQ Exh. 12, p. 12-184, -192.

35. The hydrogeologic data used in the groundwater model was limited to observation points, monitor wells and pumping tests, and private well information obtained from the State Engineers Office database. *Id.* at pp. 12-192, -194, -264. None of these data sources provide information as to the unique textural and hydraulic characteristics of the saturated backfill in the TR-1 area overburden. *See generally* DEQ Exh. 12, p. 12-183 through -294; *see also* Tr. Vol. III, p. 513, ln. 11-19; BHC Exh. 9, p. 6.

36. The groundwater model primarily focuses on the Carney and Masters coal seams; treats all overburden within the proposed permit area as dry, native strata; does not utilize any site-specific hydraulic conductivity information from the TR-1 area overburden; and does not model any drawdowns in the TR-1 overburden resulting from mining operations. DEQ Exh. 12, pp. 12-060, -197, -205, -206; BHC Exh. 9, p. 6.

37. The TR-1 area is spatially contained within the geographic area examined by the groundwater model; however, by assuming all overburden in the proposed permit area is dry, impacts to the groundwater in the TR-1 area overburden were not accurately modeled. *See generally* DEQ Exh. 12, p. 12-183 through -294.

38. Brook Mine's permit application states that mining operations will use and rely on pit inflows as a source of water. DEQ Exh. 12, p. 12-066. The application estimates that the proposed mining operations will use approximately 53,000 gallons of water per day (approximately 37 gallons per minute) from pit inflows and states that the estimated inflow amounts are demonstrated in the groundwater model in Addendum MP-3. DEQ Exh. 12, p. 12-116. The groundwater model estimates pit inflows at anywhere between 100 gallons per minute to 0.03 gallons per minute for the life of the mine. *Id.* at 12-254.

39. To facilitate its use of pit inflow water, Brook Mine proposed to place a pump in the TR-1 trench cut to pump out water for operations use for the life of the mine. DEQ Exh. 12, p. 12-052; Tr. Vol. III, p. 556, ln. 1-15.

40. DEQ witness Kuchanur testified that once Brook Mine excavates the trench cut in the TR-1 mining area, groundwater from the TR-1 overburden will flow into the trench cut and mine panels. Tr. Vol. III, p. 556, ln. 1-15.

41. The groundwater model does not accurately reflect or identify the groundwater in the TR-1 overburden, and does not accurately simulate the pit inflows from the TR-1 overburden. *See generally* DEQ Exh. 12, p. 12-183 through -294; *see also* Tr. Vol. IV, p. 717, ln. 1-4.

42. Brook Mine's permit application contemplates the use of groundwater found in the coal seams as a source of water to be used from pit inflows. *See* DEQ Exh. 12, p. 12-254. The permit application never acknowledges any use of the groundwater in the TR-1 overburden, does not identify this groundwater as a source of water for mine operations, and the quality and quantity of water to be used from this source is a complete unknown. *See generally* DEQ Exh. 12.

43. Appendix D6, section D6.2.2.5, of the permit application addresses recharge areas. The permit application does not specifically describe any recharge characteristics of the overburden generally, nor the TR-1 area specifically. DEQ Exh. 6, p. 6-029 through -031. Appendix D.6 of the permit application characterizes all overburden as dry, and relies on the groundwater model found at Addendum MP-3 for any detail concerning groundwater recharge. *Id.*

44. The groundwater model is devoid of any TR-1 overburden data and characterizes recharge in the overburden, generally, as having a uniform recharge rate of between 0.00000012 ft/day/ft² and 0.00008 ft/day/ft² and 0.0005 and 0.35 inches per year. DEQ Exh. 12, p. 12-221.

45. Upon review of materials not in or referenced by the permit application, DEQ witness Kuchanur estimated the TR-1 overburden recharge rate at 0.06 CFS. *See* Tr. Vol VII, p. 1470, ln. 1-16; p. 1471, ln. 14-15.

46. The groundwater in the TR-1 overburden is currently held in place by a low permeability, shale aquitard, or barrier, which physically separates the groundwater located in the overburden from the groundwater located in the coal seams. Tr. Vol. III, p. 508, ln. 2-25, p. 509, ln. 1.

47. In order to access the targeted coal seams, the proposed mining operations in the TR-1 area will excavate and cut through the shale barrier and allow the TR-1 overburden groundwater to flow directly into the trench and mining panels. *Id.*; *see also id* at p. 556, ln. 1-15.

48. Neither the permit application nor the groundwater model contains any data or analysis regarding whether and how Brook Mine will be able to restore the recharge rate of the groundwater in the TR-1 overburden after mining operations cease. *See generally* DEQ Exh. 6, 12 and 13.

Surface Water Monitoring

49. DEQ witness Kunze conceded that Brook Mine needs to revise the number and location of surface water monitor wells proposed in the permit application for the Tongue River. Tr. Vol. II, p. 411, ln. 18-25, p. 412, ln. 1-12.

50. In order to adequately monitor mining impacts on the Tongue River, one monitor well needs to be placed further upstream on the Tongue River, near the furthest upstream point within the proposed permit area; an additional monitor well should be

placed near the proposed permit boundary on the Tongue River a short distance downstream from the confluence of the Tongue River and Goose Creek; and another additional monitor well should be placed on Goose Creek. *Id.*

51. DEQ policy requires permit applications to contain pre-mining monitoring and studies of both surface and groundwater to include monitoring data for a one year period, at minimum. *See* DEQ Exh. 22, pp. 3, 5, 15, 16; *see also* Tr. Vol. II, p. 395, ln. 9-17.

52. The TR-1 mining area is located immediately adjacent to both the Tongue River and Goose Creek, and the confluence of the two surface water bodies. DEQ Ex. 12, p. 12-134; Tr. Vol. II, p. 204, ln. 25, p. 205, ln. 1-7.

53. The permit application does not discuss or analyze whether or to what extent the groundwater in the TR-1 overburden is hydrologically connected to the Tongue River or Goose Creek. *See generally* DEQ Exh. 5 and 12.

54. The evidence suggests a direct hydrological connection exists between the groundwater in the TR-1 overburden and the Tongue River. Tr. Vol. III, p. 498, ln. 19-25, p. 499, ln. 1-19; Tr. Vol. IV, p. 936, ln. 5-11; BHC Exh. 9.

55. Absent information in the permit application regarding the nature and extent of the hydrologic connection between the TR-1 overburden and the Tongue River, it is impossible for Brook Mine or DEQ to determine if or to what extent mining through the saturated TR-1 overburden will adversely impact the Tongue River. *See* Tr. Vol. II, p. 420, ln. 7-19.

56. Neither the monitor wells identified in Brook Mine's permit application nor the additional monitor wells DEQ proposed at hearing will adequately monitor impacts to the Tongue River from mining through the saturated overburden in the TR-1 area. *See* DEQ Exh. 12, p. 12-062 through -064, -112; *see also* Tr. Vol. II, p. 411, ln. 18-25, p. 412, ln. 1-15; DEQ Exh. 6 and 12 *generally*. An additional monitor well on the Tongue River, just north of the TR-1 mining area, is necessary to adequately monitor impacts to the Tongue River from mining in the TR-1 area. *See* DEQ Exh. 12, p. 12-062 through -064, -0112; Tr. Vol. II, p. 420, ln. 7-19.

Access to the TR-1 Area for Testing

57. Brook Mine had legal authority to enter Big Horn property, including the TR-1 area, to conduct exploration and data recovery operations from July 2012 through July 2014, pursuant to an exploration agreement with Big Horn. Tr. Vol. IV, p. 847, ln. 9-16.

58. Brook Mine was gathering information for its permit application, including gathering geology information, and placing monitor and observation wells outside the TR-1 area, during this same period. *See* Tr. Vol. I, p. 51, ln. 18-25.

59. Brook Mine apparently chose not to gather information from the TR-1 mining area during the term of its agreement with Big Horn. *See generally* DEQ Exh. 1-13.

60. Brook Mine allowed its exploration agreement with Big Horn to expire, and never subsequently sought permission to enter Big Horn's property to conduct testing or gather information. Tr. Vol. IV, p. 848, ln. 1-9, p. 855, ln. 17-20.

61. After the expiration of the exploration agreement, and without notice to or permission from Big Horn, Brook Mine sent drilling rigs to Big Horn property. Big Horn discovered unauthorized drilling rigs on its property and contacted law enforcement, which instructed the drilling rig operator to leave Big Horn property. *Id.* at p. 848, ln. 10-25, p. 849, ln. 1-25, p. 850, ln. 1-4.

62. There is no evidence in the record that it was not possible for Brook Mine to acquire geologic or hydrologic information from the TR-1 area.

Underground Coal Fires

63. There is a history of underground coal fires in the proposed permit area. *See* Tr. Vol. II, p. 334, ln. 2-5.

64. Brook Mine acknowledged at hearing that coal fires may exist within the proposed permit boundary. Tr. Vol. IV, p. 722, ln. 16-21.

65. Brook Mine has not conducted any survey or examination of coal fires in the proposed permit area; and the permit application contains no information to support Brook Mine's testimony at hearing that although coal fires may exist, it believes no underground coal fires exist in the proposed permit area. *Id.* at p. 716, ln. 4-17.

Blasting Protections Afforded to Surface Owners

66. At hearing, Big Horn witness Sweeney requested a pre-blasting survey pursuant to Wyo. Stat. Ann. § 35-11-415(b)(xi)(E), and seismic monitoring for Big Horn's shop and other infrastructure located within the proposed permit area. Tr. Vol. IV, p. 860, ln. 17-25, p. 861, ln. 1-16.

67. DEQ and Brook Mine representatives testified that on request from a resident within one half-mile of the proposed permit boundary, seismic monitors could be placed near structures to measure the ongoing impacts from blasting. Tr. Vol. III, p. 618, ln. 12-25, p. 619, ln. 1-2.; Tr. Vol. IV, p. 770, ln. 20-25, p. 771, ln. 1-5, p. 783, ln. 5-19.

Overlapping Permit Boundaries and Related Agreements

68. Brook Mine's permit application states that Big Horn's "permit boundary [is] within Brook Mine's permit boundary," that "all mining operations are covered under individual Permits to Mine," and "[a]greements between the permittees are located in the Adjudication File." DEQ Exh. 12, p. 12-088. In its Reclamation Plan, the permit application states that "the last party to disturb an area will have final reclamation responsibility on the disturbed dual permitted lands." DEQ Exh. 13, p. 13-075.

69. Big Horn requires access to the overlapping property as a landowner with tenants and as a permit holder with outstanding reclamation responsibilities. *See* Tr. Vol. IV, p. 870, ln. 14-21.

70. When two or more parties have overlapping surface coal mine permits, the permit documents may specifically reference any agreements between the parties and expressly provide that each party is only responsible for reclamation resulting from its own disturbance. BHC Exh. 5 and 6.

71. There are no operational, surface use, or overlapping permit boundary agreements between Brook Mine and Big Horn Coal. Tr. Vol. IV, p. 865, ln. 9-15. Brook Mine's permit application incorrectly implies there is an agreement between Brook Mine and Big Horn in the adjudication file. *See* DEQ Exh. 12, p. 12-088.

72. Brook Mine's permit application states that "the last party to disturb an area will have final reclamation responsibility on the disturbed dual permitted lands" rather than stating as DEQ witness Kristiansen conceded, that each party will be responsible for reclamation and maintaining a reclamation bond only as to that party's facilities, operations, and disturbances. *See* DEQ Exh. 13, p. 13-075; Tr. Vol. II, p. 188, ln. 20-25, p. 189, ln. 1-25, p. 190, ln. 1-16.

Surface Owner Protection Bond

73. Brook Mine has not yet submitted a surface owner protection bond to DEQ, as required by Wyo. Stat. Ann. § 35-11-416(a), for the use and benefit of Big Horn as a surface owner within the proposed permit area. *See* Tr. Vol. II, p. 200, ln. 9-25, p. 201, ln. 1.

74. DEQ assured Big Horn that it will determine the amount of the surface owner protection bond prior to permit issuance and only after participation and input from Big Horn. Tr. Vol. II, p. 201, ln. 8-25, p. 202, ln. 1-4.

PROPOSED CONCLUSIONS OF LAW

1. The Council has jurisdiction over this matter pursuant to Wyo. Stat. Ann. §§ 35-11-406(k) and -112(a).

2. EQC conducted the contested case hearing pursuant to DEQ, Practice and Procedure Rules, Chapter 2.

3. Pursuant to the Environmental Quality Act, Wyo. Stat. Ann. §§ 35-11-101 *et seq.*, and applicable Department of Environmental Quality, Land Quality Division, Coal Rules and Regulations, Brook Mine's permit application must contain specific information,

data and other substantive content and analysis regarding the proposed surface coal mining operations, the land and water to be affected, foreseeable impacts from the proposed mining operations, and how the foreseeable impacts will be monitored, minimized and reclaimed.

4. The Council must determine whether Brook Mine has affirmatively established that its permit application contains all legal requirement imposed by the Environmental Quality Act, Wyo. Stat. Ann. §§ 35-11-101 *et seq.*, and applicable Department of Environmental Quality, Land Quality Division, Coal Rules and Regulations.

5. The Council also must determine whether Brook Mine has met its specific burden under Wyo. Stat. Ann. § 35-11-406(n) necessary for approval of its permit application, and, based on that determination, direct DEQ to either issue or deny Brook Mine a permit after making the requisite written findings.

6. **Wyo. Stat. Ann. § 35-11-406(a)(vii) and DEQ, Land Quality Coal Rules, Ch. 2, Section 4(a)(vii), (viii), (x)** require a surface coal mining permit application to provide a general description of the land, including the nature of the overburden, a detailed description of the geology down to the lowest coal seam to be mined, a characterization of the geologic strata down to the lowest coal seam to be mined, the lithological characteristics of each stratum, and a description of any factor in the overburden that will influence mining or reclamation activities.

7. Brook Mine's permit application fails to provide complete and accurate information required by Wyo. Stat. Ann. § 35-11-406(a)(vii) and DEQ, Land Quality Coal Rules, Ch. 2, Section 4(a)(vii), (viii), (x) as to the overburden in the TR-1 mining area.

Descriptions and characterizations in the form of assumptions or based on an extrapolation of data from geographically and geologically distinct areas fail to satisfy these statutory and regulatory requirements.

8. DEQ must either deny the permit application, or require Brook Mine to include the complete and accurate TR-1 specific geologic data and analysis in its permit application, resubmit its application to DEQ and, after approval, re-publish notice of its complete application allowing interested persons to file written objections, pursuant to Wyo. Stat. Ann. § 35-11-406(h)-(k).

—In the alternative, and without waiving BHC's stated position that the application must be denied and resubmitted, if the EQC elects to direct DEQ to impose permit conditions:⁷

DEQ shall issue the permit with an express written condition that, prior to conducting any mining operations, Brook Mine must obtain and analyze TR-1 overburden samples and provide all such data and analysis to DEQ for review and approval in accordance with the applicable statutes and DEQ-Land Quality Coal Rules and Regulations.

9. **Wyo. Stat. Ann. § 35-11-406(a)(vii) and DEQ, Land Quality Coal Rules, Ch. 2, Section 4(a)(vii), (viii), (xii)** require a surface coal mining permit application to provide a description of any subsurface waters known to exist above the deepest projected

⁷ See *supra* Note 4. All alternative Conclusions of Law proposing permit conditions are provided by Big Horn with this same caveat that Big Horn first and foremost asserts that the permit application submitted by Brook Mine is deficient and must be either denied or sent back to Brook Mine to remedy these deficiencies, resubmit the application to DEQ for approval, and re-publish for public review pursuant to Wyo. Stat. Ann. § 35-11-406(h)-(k).

depth of the mining operation; the occurrence, availability, quality and quantity of potentially affected groundwaters; the location of any groundwater; and complete information of groundwater that may be affected in the permit area, including the lithology and thickness of known aquifers and the recharge, storage and discharge characteristics of the groundwater.

10. Brook Mine's permit application fails to provide complete and accurate information required by Wyo. Stat. Ann. § 35-11-406(a)(vii) and DEQ, Land Quality Coal Rules, Ch. 2, Section 4(a)(vii), (viii), (xii), as it fails to identify or describe any groundwater in the TR-1 mining area overburden.

11. DEQ must either deny the permit application, or require Brook Mine to include the complete and accurate TR-1 specific groundwater information and analysis in its permit application, resubmit its application to DEQ and, after approval, re-publish notice of its complete application allowing interested persons to file written objections, pursuant to Wyo. Stat. Ann. § 35-11-406(h)-(k).

—In the Alternative—

DEQ shall issue the permit with an express written condition that, prior to conducting any mining operations, Brook Mine must obtain and analyze additional groundwater information from the TR-1 area overburden and provide all such data and analysis to DEQ for review and approval in accordance with the applicable statutes and DEQ-Land Quality Coal Rules and Regulations.

12. **Wyo. Stat. Ann. § 35-11-406(b)(xvi)** requires a surface coal mining permit application to contain a statement of the source, quality, and quantity of any water to be used in mining or reclamation operations.

13. Brook Mine's permit application fails to provide complete and accurate information required by Wyo. Stat. Ann. § 35-11-406(b)(xvi), as it fails to identify the groundwater in the TR-1 overburden as a source of water for its proposed operations and similarly fails to identify the quality of that water or the quantity to be used in its mining or reclamation operations.

14. DEQ must either deny the permit application, or require Brook Mine to include the complete and accurate information and analysis regarding the TR-1 as a specific water source in its permit application, resubmit its application to DEQ and, after approval, re-publish notice of its complete application allowing interested persons to file written objections, pursuant to Wyo. Stat. Ann. § 35-11-406(h)-(k).

—In the Alternative—

DEQ shall issue the permit with the express written conditions that:

(1) prior to conducting any mining operations, Brook Mine must identify all water sources to be used in its proposed mining and reclamation operations, including groundwater from the TR-1 overburden, by geologic source, including quality and quantity characteristics, and submit this data and analysis to DEQ for review and approval in accordance with applicable statutes and DEQ-Land Quality Coal Rules and Regulations; and

(2) after the conclusion of mining operations in the TR-1 area, the TR-1 trench must be reclaimed without delay, in accordance with applicable law, and may not remain open for use as a source of water for subsequent mining operations on adjacent lands.

15. **Wyo. Stat. Ann. § 35-11-406(b)(xviii) and DEQ, Land Quality Coal Rules, Ch. 2, Section 4(a)(xiv), Section 5(a)(x), Chapter 19 Section 2(a)** require a surface coal mining permit application to contain a plan to minimize disturbances to the prevailing hydrologic balance at the minesite and associated offsite areas and to the quality and quantity of surface and groundwater systems both during and after mining operations; a description of the groundwater and related geology in the permit area sufficient to assess the probable hydrologic consequences; a determination of the probable hydrologic consequences of the proposed operation on the hydrologic regime and the quantity and quality of surface and groundwater systems within the permit area; and a determination of the projected result of the proposed surface coal mining and reclamation operations, which may be expected to change the quality or quantity of the surface and groundwater, its flow, timing and availability, all in sufficient detail to enable the Administrator of the Land Quality Division to determine the probable cumulative hydrologic impacts on surface and groundwater systems.

16. Brook Mine's permit application fails to meet the requirements of Wyo. Stat. Ann. § 35-11-406(b)(xviii) and DEQ, Land Quality Coal Rules, Ch. 2, Section 4(a)(xiv), Section 5(a)(x), Chapter 19 Section 2(a), specifically, as to the lack of any plan or assessment related to probable impacts from mining through the TR-1 overburden, and

any probable change in the quality or quantity of the surface or groundwater in that area, its flow, timing or availability.

17. DEQ must either deny the permit application, or require Brook Mine to include sufficiently detailed, site-specific groundwater data for the TR-1 overburden in its permit application, including the anticipated impacts from mining the TR-1 area on ground and surface waters, resubmit its application to DEQ and, after approval, re-publish notice of its complete application allowing interested persons to file written objections, pursuant to Wyo. Stat. Ann. § 35-11-406(h)-(k).

—In the Alternative—

DEQ shall issue the permit with an express written condition that, prior to conducting any mining operations, Brook Mine must provide a surface and groundwater impact analysis (during-mining and post-mining) that incorporates site-specific textural and hydrological data in the TR-1 mining area, to DEQ for review and approval in accordance with applicable statutes and DEQ-Land Quality Coal Rules and Regulations.

18. **DEQ, Land Quality Coal Rules, Ch. 2, Section 5(a)(ix)** requires a surface coal mining permit application to contain both a groundwater and surface water monitoring plan, based on hydrologic, geologic and other information in the permit application, which identifies the quality and quantity parameters to be monitored, sampling frequency and site locations, and describes how the data will be used to determine the impacts of the mining operations on the hydrologic balance.

19. Brook Mine's permit application fails to meet the requirements of DEQ, Land Quality Coal Rules, Ch. 2, Section 5(a)(ix), as it fails to contain sufficient monitoring locations to determine the impacts of the proposed mining operations in the TR-1 area on surface water within and adjacent to the permit area. The permit application further fails to meet the requirements of DEQ, Land Quality Coal Rules, Ch. 2, Section 5(a)(ix), as it fails to contain sufficient monitoring locations to determine the impacts of mining the TR-1 area on the groundwater located in the TR-1 overburden.

20. DEQ must either deny the permit application, or require Brook Mine to identify and commit to installing additional monitoring locations within its permit application necessary to determine the impacts of mining the TR-1 area on the Tongue River and Goose Creek and the groundwater located in the TR-1 overburden, resubmit its application to DEQ and, after approval, re-publish notice of its complete application allowing interested persons to file written objections, pursuant to Wyo. Stat. Ann. § 35-11-406(h)-(k).

—In the Alternative—

DEQ shall issue the permit with an express written condition that, prior to conducting any mining operations, Brook Mine must submit to DEQ for review and approval in accordance with applicable statutes and DEQ-Land Quality Coal Rules and Regulations, alterations to its water monitoring locations as follows:

First, as recommended by DEQ, move one monitor well farther upstream on the Tongue River near the boundary of the proposed permit area, and add additional monitoring cites on the Tongue River just downstream of the

confluence with Goose Creek and an additional monitoring location on Goose Creek; and

Second, add groundwater monitoring locations in the TR-1 overburden and add an additional surface water monitoring location in the Tongue River just north of the TR-1 mining area.

21. **DEQ, Land Quality Coal Rules, Ch. 2, Section 5(a)(ix)** and its incorporation of Ch. 4, Section 2(h) requires a surface coal mining permit application to include a plan to restore the approximate recharge capacity of groundwater within the permit area to a condition that approximates the pre-mining recharge rate.

22. Brook Mine's permit application fails to provide the information required by DEQ, Land Quality Coal Rules, Ch. 2, Section 5(a)(ix) as to the groundwater in the TR-1 overburden, as there is no a plan to restore the recharge capacity and no accurate information as to the pre-mining recharge capacity of that groundwater.

23. DEQ must either deny the permit application, or require Brook Mine to provide and analyze data concerning the recharge capacity of the TR-1 overburden groundwater and include a plan in the permit application to restore the recharge capacity of the TR-1 overburden groundwater to pre-mining conditions, resubmit its application to DEQ and, after approval, re-publish notice of its complete application allowing interested persons to file written objections, pursuant to Wyo. Stat. Ann. § 35-11-406(h)-(k).

—In the Alternative—

DEQ shall issue the permit with an express written condition that, prior to conducting any mining operations, Brook Mine must determine the recharge

capacity of the TR-1 overburden groundwater and provide a plan to restore the TR-1 overburden groundwater to pre-mining conditions to DEQ for review and approval in accordance with applicable statutes and DEQ-Land Quality Coal Rules and Regulations.

24. **Wyo. Stat. Ann. § 35-11-406(b)(ix), (xiii) and DEQ, Land Quality Coal Rules, Ch. 2, Section 5(a)(iv)** require a surface coal mining permit application to include a plan for insuring that “materials constituting a fire, health or safety hazard uncovered during or created by the mining process are promptly treated or disposed of during the mining process in a manner designed to prevent . . . threats to human or animal health and safety,” contain “procedures proposed to avoid constituting a public nuisance, endangering the public safety, human or animal life,” and include “plans which have been developed to preclude sustained combustion of any materials constituting a fire hazard.”

25. Due to the prevalence and history of coal fires in the area, the lack of any information as to current coal fire activity within the permit area renders Brook Mine’s permit application deficient with regard to the required fire safety planning.

26. DEQ shall issue the permit with an express written condition that, prior to conducting any mining operations, Brook Mine must submit and DEQ must approve a report providing maps, descriptions, photographs, and any existing evidence of underground coal fires within 500 feet of any proposed mining locations and a plan that identifies the specific safety measures Brook Mine will take where underground coal fires exist within 500 feet of any proposed mining location.

27. **Wyo. Stat. Ann. § 35-11-415(b)(xi)(E)** requires surface coal mining operators to provide a pre-blasting survey “of a man-made dwelling or structure within one-half (1/2) mile of any portion of the permitted area,” on request of a resident or owner.

28. Finding Big Horn’s request for a pre-blast survey to be mandated by law, and Big Horn’s request for seismic monitors to be reasonable and available, DEQ shall issue the permit with an express written condition that, prior to conducting any mining operations, Brook Mine, under DEQ direction, will conduct a pre-blast survey of all man-made structures and dwellings belonging to Big Horn within one-half mile of the permit area, and install seismic monitoring devices at each of Big Horn’s facilities sufficient to ensure the protection of Big Horn infrastructure, improvements and tenants.

29. Based on the testimony and evidence of record, Brook Mine’s permit application fails to accurately state there are no operational, surface use, or overlapping permit boundary agreements between Brook Mine and Big Horn. The permit application also fails to accurately and sufficiently set forth the reclamation responsibilities of each party as to disturbance within the overlapping permit boundaries.

30. DEQ shall issue the permit with an express written condition that section MP.22 and section RP.12 of Brook Mine’s mine and reclamation plans must be amended to accurately reflect the following:

- There are no operational, surface use, or overlapping permit boundary agreements between Brook Mine and Big Horn Coal.
- Big Horn maintains a reclamation performance bond adequate to reclaim Big Horn facilities and all disturbances associated within Big Horn operations within Big Horn’s permit area.

- Brook Mine shall maintain a reclamation performance bond sufficient to reclaim all disturbance associated with Brook Mine operations within its permit area.
- Big Horn shall not be responsible for reclamation of any disturbance unrelated to Big Horn operations or facilities, including, but not limited to, Brook Mine disturbance within the remaining lands subject to Big Horn's reclamation performance bond.

31. **Wyo. Stat. Ann. § 35-11-416(a)** requires that when the surface owner is not the mineral owner of the estate proposed to be mined, prior to permit issuance, the operator must execute a bond "for the use and benefit of the surface owner or owners of the land, in an amount sufficient to secure the payment for any damages to the surface estate . . . or to the tangible improvements of the surface owner."

32. In accordance with DEQ's stated assurance at hearing, no permit shall be issued to Brook Mine unless and until a surface owner protection bond is issued for the benefit of Big Horn and after good faith consultation with Big Horn as to the appropriate bond amount.

PROPOSED CONCLUSIONS OF LAW AS TO WYO. STAT. ANN. § 35-11-406(n)

33. **Wyo. Stat. Ann. § 35-11-406(n)** requires Book Mine, as a surface coal mining permit applicant, to meet its burden of "establishing that his application is in compliance with [the Environmental Quality Act] and all applicable state laws" and provides that "[n]o surface coal mining permit shall be approved unless the applicant affirmatively demonstrates" the following:

- (i) That the application is accurate and complete;
- (ii) That the reclamation plan can accomplish reclamation as required by [the Environmental Quality Act]; and

(iii) That the proposed operation has been designed to prevent material damage to the hydrologic balance outside the permit area.

34. Based on the forgoing findings of fact and conclusions of law:

- Brook Mine has failed to affirmatively establish that its permit application is in compliance with the requirements of the Environmental Quality Act and all applicable rules and regulations.
- Brook Mine's permit application lacks required information, mischaracterizes, and contains inaccurate information as to the TR-1 mining area and its related overburden geology and hydrology, as well as lacks the additional legal requirements stated above. Therefore, Brook Mine has failed to affirmatively demonstrate that its permit application is accurate and complete.
- Brook Mine has failed to affirmatively demonstrate that the reclamation plan can accomplish reclamation as required by the Environmental Quality Act, which emphasizes a standard for restoration to pre-mining conditions⁸, because the permit application fails to sufficiently identify pre-mining conditions in the TR-1 area.
- Brook Mine has failed to affirmatively demonstrate that its proposed operation has been designed to prevent material damage to the hydrologic balance outside the permit area, because it fails to account for or consider critical and unique hydrological conditions in the TR-1

⁸ See DEQ, Land Quality Coal Rules, Ch. 4, Section 2.

area and fails to identify how it will monitor the impacts of the proposed TR-1 area mining operations on the hydrological balance within, let alone outside the proposed permit area.

35. DEQ must either:

- Deny the permit application; or
- Require Brook Mine to complete its permit application in light of the above identified deficiencies, resubmit its application to DEQ and, after approval, re-publish notice of its complete application allowing interested persons to file written objections, pursuant to Wyo. Stat. Ann. § 35-11-406(h)-(k).

—In the Alternative—

DEQ shall issue the permit with all of the express written conditions listed above.

DATED: July 24, 2017.



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CERTIFICATE OF SERVICE

I hereby certify that on July 24, 2017 a true and correct copy of the foregoing was served by email to the following:

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A handwritten signature in black ink, appearing to read "Clayton M. Pope", is written over a horizontal line.

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Date: Monday, July 24, 2017 4:32:51 PM
Attachments: [2017-07-24 Brook's FOF and COL.PDF](#)

Attached please find Brook Mine's Findings of Fact and Conclusions of Law.

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ATTORNEYS FOR PERMIT APPLICANT
BROOK MINING COMPANY, LLC

IN RE BROOK MINE APPLICATION)
) Civil Action No. 17-4802
TFN 6 2-025)

First, DEQ is unbiased. It has nothing to gain should Brook's permit application move forward. But the objectors have different motives. Big Horn Coal (BHC) wants money, offering not to oppose Brook's application if Brook paid BHC approximately \$29 million. (Tr. Vol. IV, 876). Mary and David Fisher (Fishers) do not want a mine near them because it could affect their

property's value. (Tr. Vol. V, 1181-82). Powder River Basin Resource Council (PRBRC) does not want any mining near Sheridan. (*Id.*, 1123). As a result, the objectors did not objectively analyze Brook's permit application.

Second, DEQ has the most relevant experience and expertise for reviewing Brook's permit application. The DEQ personnel who reviewed Brook's permit application have reviewed dozens of permits, spent years working on the application, submitted hundreds of comments, and worked with Brook to ensure the permit application meets Wyoming law. (DEQ Ex. 34; Tr. Vol. I, 40-42, 45-46; Tr. Vol. II, 393-94; Tr. Vol. III, 461-62, 581). Dr. Muthu Kuchanur is a nationally recognized expert who worked as a consultant and who has designed, developed, applied, and evaluated groundwater models like those used in Brook's permit application. Doug Emme is also a nationally recognized expert on blasting who has been DEQ's blasting program principal for over 27 years. (Tr. Vol. III, 578-80). He also assisted in developing DEQ's bonding guideline. (*Id.*, 579). But PRBRC's experts, Dr. Marino and Mr. Wireman, have never attempted to draft a coal mine permit application in Wyoming. (Tr. Vol. VI 1254, 1263, 1403-05). Mr. Wireman does not hold a professional license in any state. Neither Mr. Wireman nor Dr. Marino are experts on the requirements for a permit application to be complete and non-deficient under Wyoming law. (*Id.*, 1254, 1258-60, 1403-05).

Third, DEQ applied the correct standard in reviewing Brook's permit application. DEQ applied the Environmental Quality Act, the corresponding regulations, and DEQ guidelines to determine Brook's application was complete and non-deficient. DEQ balanced the regulations and the necessary science. (Tr. Vol. VII, 1490). But objectors, nearby landowners, experts or otherwise, did not. They spent merely days, hours, or no time at all reviewing Brook's permit application. (Tr. Vol. IV, 887-88, Vol. V, 1077, 1098-1102, 1107-08, 1122-23, 1126; Vol. VI,

1428). For example, Ms. Collins did not look at the permit application until the beginning of the hearing in Sheridan. (Tr. Vol. V, 1077-78). This limited review often meant they did not consult statutes or regulations. For example, BHC did not review the statutory or regulatory requirements for a permit application. (Tr. Vol. IV, 885-89). Still, the objectors agreed that if a permit application complies with all Wyoming statutes and Wyoming regulations, the permit should issue. (*Id.*, 894, Vol. V, 1103).

Fourth, the objectors' expert testimony has fatal flaws. Dr. Marino assumed designs and extraction ratios using generalized diagrams that did not reflect Brook's actual design found in Brook's Mine Plan. (*See* DEQ Ex. 12-035; Tr. Vol. VI, 1274-77). He also did not take into account that Brook committed in its permit application to: 1) do site specific testing and engineering before starting to mine; and 2) submit a Mine Safety Health Administration (MSHA) ground control plan engineered to prevent short and long-term subsidence. (Tr. Vol. VI, 1265-69). Mr. Wireman did not evaluate all of the data in the permit application and did not evaluate external data available in the area. (*Id.*, 1404-06). He also doubted the data and statements in the permit application without studying whether his doubts were correct. (*Id.*, 1405-06). For example, he doubted Brook's groundwater model was accurate; but he did not run the model. (*Id.*, 1414-16). Mr. Gerlach's opinions relied on a 15 year-old groundwater restoration demonstration his company drafted for BHC. (Tr. Vol. IV, 972-73). That document, however, uses old data not designed to predict the future consequences of mining in the area. (Tr. Vol. VII, 1464-66).

The Council should also weigh DEQ's enforcement authority. Brook has committed to: 1) replacing water quantity and quality if its mine should affect domestic water wells; 2) do site specific studies and engineering to prevent subsidence; and 3) remediate subsidence if it occurs.

(DEQ Ex. 34-014-15; DEQ Ex. 5-017-18; Tr. Vol. III, 659-60, 673-76). These commitments directly address specific objections, and DEQ can enforce all of them because they are in the permit application. (Tr. Vol. II, 230, 349, 371-72).

Contrary to what the objectors suggest, this case does not require the Council to decide if Wyoming's permit application process should be more stringent, the public should have more input on the permitting process, or if DEQ should have held an informal conference. The case is also not about imposing conditions on Brook's permit application. The Council does not have any specific statutory authority to impose conditions on a permit application. Even if it did, many of the conditions the objectors have requested require Brook to access land the objectors own, which invites disputes about when Brook can access the property or how much it will cost to do so.¹ (Tr. Vol. IV, 879).

Therefore, Brook proposes the Council adopt the following findings of fact and conclusions of law.

II. FINDINGS OF FACT

A. Brook's Permit Application

1. On October 31, 2014, Brook submitted to DEQ's Land Quality Division (LQD) an application for a permit to mine coal. Brook's permit application proposed to mine coal in an area northwest of Sheridan, Wyoming. (DEQ Exs. 1-13, Tr. Vol. I, 51-52).

2. Brook's permit application consisted of 12 volumes filled with documents, maps, data, and other information to address applicable statutes, rules and regulations. (DEQ Exs. 1-13,

¹ If the Council imposes conditions that require Brook or even DEQ to access property Brook does not own, those conditions should apply only if the property owner grants access. Should the property owner refuse, then the Council should not require Brook or DEQ to follow those conditions. Although Brook has the use of the surface and surface access from the rights reserved in its 1954 Deed, the Council knows that many landowners ignore those rights.

Tr. Vol. I, 43-44, 52, 57-58). These volumes mirror the structure and documents in DEQ's completeness criteria. (Tr. Vol. VII, 1540). The completeness criteria lists "what is required for a permit application to mine coal in the state of Wyoming." (*Id.*, Brook Ex. 14). The document "cross-references all of the requirements to Wyoming, statutes, rules and regulations." (*Id.*).

3. Volumes I, IA, and II are the combined adjudication file in the permit application. (DEQ Exs. 1, 2, 3). The adjudication file contains information on the legal aspects of land and mineral ownership, water rights, rights of way, legal descriptions, and legal relationships. (*Id.*). The second volume of the adjudication file contains ownership maps, right-of-way maps, etc. Tr. Vol. I, 60-62, DEQ Exs. 1, 3. The adjudication file also contains an estimate of the surface damage bond for BHC's surface ownership. (Tr. Vol. I, 66, DEQ Ex. 1-066-101).

4. Appendix A of the adjudication file contains contact information and maps relating to surface and mineral rights holders within the proposed permit area, including coal. (Tr. Vol. I, 68, DEQ Ex. 1-232).

5. Appendix B of the adjudication file contains the names and addresses of surface and mineral rights owners adjacent to the permit boundary within one-half mile. (Tr. Vol. I, 69, DEQ Ex. 1-264).

6. Appendix C of the adjudication file contains the legal description of lands contained within the permit application area, including survey plats and maps. (Tr. Vol. I, 70, DEQ Ex. 1-447).

7. Appendix E of the adjudication file contains lands mining will affect, areas of previous disturbance by surface and underground mining, roads, utility lines, pipelines, rights of way, easements, names and last known addresses of present surface owners, and the legal

description of locations of buildings within and adjacent to the permit area. (Tr. Vol. I, 72, DEQ Ex. 1-540).

8. The adjudication volumes also contain landowner consent forms and this Council's order in lieu of consent issued on November 17, 2016. (DEQ Ex. 2).

9. Volume III contains appendices D1 through D4. (DEQ Ex. 4).

10. Appendix D1 is titled "Land use." (DEQ Ex. 4). The appendix explains the general use of the land within the permit application boundary from past to present, which includes grazing land, developed water resources, industrial, commercial, recreational, and residential. (Tr. Vol. I, 82-83, DEQ Ex. 4-008-11). The appendix also explains the areas any agency has designated as unsuitable for mining and whether previous mines exist within the area. (DEQ Ex. 4-016). The appendix also has tables, figures, and exhibits that supplement the text and provide more information. (*Id.*, 4-020-41).

11. DEQ reviewed Appendix D1 and found it complied with the applicable statutes and regulations. (Tr. Vol. I, 52, 60, Tr. Vol II, 196-97, 411).

12. Appendix D2, is titled "History." (DEQ Ex. 4). This appendix discusses the history of mining in the Brook Mine area, sites on the National Register of Historic Places, and the area around the proposed Brook mine. (*Id.*, 4-046-56). The appendix also has tables, figures, and exhibits that supplement the text and provide more information. (*Id.*, 4-059-64).

13. DEQ reviewed Appendix D2 and found it complied with the applicable statutes and regulations. (Tr. Vol. I, 52, 60, Tr. Vol II, 196-97, 411).

14. Appendix D3 is titled "Archeological and Paleontological Resources." (DEQ Ex. 4). This appendix contains little information because cultural and paleontological surveys "are not required when there's private surface and private mineral owners." (Tr. Vol. I, 85). The

appendix also contains a 2012 letter from DEQ stating the same. (DEQ Ex. 4-074-75). DEQ, however, did coordinate with the State's Historic Preservation Office, who had no comments. (Tr. Vol. I, 85-86).

15. In addition to this appendix, Brook's Mine Plan, found in a different volume, states Brook will stop mining in any areas where cultural or paleontological resources are discovered. (*Id.*, 86).

16. DEQ reviewed Appendix D3 and found it complied with the applicable statutes and regulations. (*Id.*, 85-86).

17. Appendix D4 is titled "Climatology." This appendix discusses the regional climatology around the proposed Brook Mine. (DEQ Ex. 4). This includes information on temperature, wind patterns, precipitation, evaporation, relative humidity, cooling, heating, and growing degree days. (*Id.*, 4-080-88).

18. The appendix also has tables, figures, and exhibits that supplement the text and provide more information. (DEQ Ex. 4-091-112). The additional information includes data about meteorological stations, regional annual and monthly temperature statistics, average monthly wind speeds, regional and annual precipitation. (*Id.*).

19. DEQ reviewed Appendix D4 and found it complied with the applicable statutes and regulations. (Tr. Vol. I, 52, 60, Tr. Vol II, 196-97, 411).

20. Volume IV of Brook's permit application contains Appendix D5, titled "Topography, Geology and Overburden Assessment." (DEQ Ex. 5). This appendix discusses topography, slope assessment, regional geology, geology of the mining area, and overburden assessment. (*Id.*, 5-006-23). The accompanying tables, figures, exhibits, and addenda provide data and information on coal quality, criteria to establish overburden suitability, geologic

structures, pre-mine slope analysis, surficial geology, lithologic and geophysical logs, geologic cross-sections, structure and isopach maps, overburden sample analysis. (*Id.*, 5-026-295).

21. In preparing this appendix, DEQ and Brook collaborated on the location of drill holes for assessing geology. (Tr. Vol. I, 92-93). Brook was unable to sample certain areas because of terrain, but the existing samples “were close enough together that [DEQ] could extrapolate...into that area for now.” (*Id.*, 93).

22. DEQ reviewed Appendix D5 and found it complied with the applicable statutes and regulations. (Tr. Vol. I, 92-93).

23. Volume V of Brook’s permit application contains Appendix D6 titled “Hydrology.” (DEQ Ex. 6). This appendix describes surface water, flood studies, surface water monitoring, surface water quality and quantity, groundwater, regional hydrogeology, baseline monitoring, groundwater testing, groundwater rights, and Brook’s groundwater model. (*Id.*, 6-005-34). The appendix also has tables, figures, exhibits, and addenda that provide additional data and information. (*Id.*, 6-037-553). This includes Brook’s groundwater model and input data for the model. (DEQ Ex. 12-183-265, Tr. Vol. III, 460-63). The data and information in this appendix showed the groundwater aquifers within about 85% of Brook’s proposed permit area is dry. (Tr. Vol. I, 95-96). The groundwater model also showed that any groundwater Brook affects would recharge within years of Brook ending its operations. (Tr. Vol. VII, 1496).

24. DEQ reviewed Appendix D6 and found it complied with the applicable statutes and regulations. (Tr. Vol. III, 496).

25. Volume VI of Brook’s permit application contains Appendix D7 titled “Soil Resources Assessment.” (DEQ Ex. 7). This appendix describes the methodology that Brook used to sample soils within the proposed permit area. (*Id.*, 7-007-14). It also describes the results of

the soil sampling, which includes soil information, soil suitability, salvage depth, and maps with soil unit descriptions. (*Id.*, 7-014-42). The appendix also includes tables, figures, exhibits, and addenda that provide additional information and data, including Brook's sampling protocol and laboratory results. (*Id.*, 7-043-114).

26. DEQ reviewed Appendix D7 and found it complied with the applicable statutes and regulations. (Tr. Vol. I, 52, 60, Tr. Vol II, 196-97, 411).

27. Volume VII of Brook's permit application contains Appendix D8 titled "Vegetation Inventory." (DEQ Ex. 8). This appendix describes the methodology that Brook used to survey vegetation within the proposed permit area. (*Id.*, 8-005-11). It also describes the results of the survey. (*Id.*, 8-11). The appendix includes tables, exhibits, and addenda with additional information and data. (*Id.*, 8-12-452).

28. DEQ reviewed Appendix D8 and found it complied with the applicable statutes and regulations. (Tr. Vol. I, 52, 60, Tr. Vol II, 196-97, 411).

29. Volume VIII of Brook's permit application contains Appendix D9 titled "Wildlife." (DEQ Ex. 9). This appendix describes Brook's wildlife studies, methods, and results. (*Id.*, 9-005-10). It also includes tables, exhibits, and addenda that describe baseline wildlife inventories and species lists. (*Id.*, 9-011-139).

30. DEQ reviewed Appendix D9 and found it complied with the applicable statutes and regulations. (Tr. Vol. I, 52, 60, Tr. Vol II, 196-97).

31. Volume IX of Brook's permit application contains Appendix D10 titled "Wetlands." (DEQ Ex. 10). This appendix describes the methodology that Brook used to inventory wetlands within the proposed permit boundary and subsequent results. (*Id.*, 10-005-9).

The appendix also has tables, exhibits, and addenda that provide additional information and baseline data. (*Id.*, 10-010-279).

32. DEQ reviewed this appendix and found it complied with the applicable statutes and regulations. (Tr. Vol. I, 52, 60, Tr. Vol II, 196-97).

33. Volume X of Brook's permit application contains Appendix D11 titled "Alluvial Valley Floors." (DEQ Ex. 11). This appendix describes Brook's analysis of potential alluvial valley floors within the proposed permit boundary. (*Id.*, 11-006-12). The appendix explains stream laid deposits, water quantity, sub-irrigation, natural and artificial flood irrigation, water quality, and then determines the potential alluvial valley floors. (*Id.*, 11-012-18). The appendix also has tables, figures, exhibits, and addenda that provide additional information and data, including geologic cross-sections, potential and declared alluvial valley floors, isopach maps, prior state decision documents, and monitor well logs. (*Id.*, 11-024-313).

34. Based on the findings in Brook's permit application, DEQ conducted their assessment of potential alluvial valley floors in the area in and around where Brook proposes to mine. (Tr. Vol. I, 108-10). DEQ's assessment led it to designate one alluvial valley floor near the proposed Brook mine. (*Id.*, 109-10). But the proposed Brook mine will not disturb or mine through any designated alluvial valley floor. (*Id.*, 112-13). Even so, Brook's permit application states that Brook will halt mining should it enter a possible alluvial valley floor and allow DEQ to determine if an alluvial valley floor exists. (*Id.*, 116). Brook will also place monitor wells in areas designated as potential alluvial valley floors. (Tr. Vol. VII, 1489).

35. DEQ reviewed Appendix D11 and found it complied with the applicable statutes and regulations. (Tr. Vol. II, 156).

36. Volume XI of Brook's permit application contains Brook's Mine Plan. (DEQ Ex. 12). Brook's Mine Plan also contains a general description of mining operations (MP.1); mine facilities (MP.2); tonnage (MP.2.2, MP.6.1); roads, railroads and other transportation systems (MP.3); mining methods, schedules, and assessments (MP.4); mining hydrology (MP.5); probable hydrologic impacts (MP.6); operational monitoring program (MP.7); water use (MP.8); reclamation of exploration holes and wells (MP.9); refuse disposal (MP.10); signs, markers and buffer zones (MP.12); blasting plan and schedule (MP.14); surface mining activities near underground mines (MP.15); protection of other resources, structures and surfaces (MP.16); existing structures facilities operations (MP.17); plan to minimize adverse impacts on fish and wildlife (MP.18); protection of historical and archaeological resources (MP.19); underground mining (MP.20); auger mining (MP.21); dual permitted areas (MP.22); plan in cases of temporary cessation of operations (MP.23); protection of public safety, human or animal life, property, and the surface owner's ongoing operation (MP.24); alluvial valley floors (MP.25); separation and replacement of soils for prime farmlands (MP.26); request for variance from environmental performance standards (MP.27); and references (MP.28). (DEQ Ex. 12-001-372).

37. Brook's Mine Plan describes the proposed highwall mining method. (DEQ Ex. 12-016-18). The highwall mining process begins with a trench, a pit, or a box cut to expose the coal seam. (Tr. Vol. III, 654, Tr. Vol. I, 51-52, DEQ Ex. 12-121). The operator then uses a machine to extract coal in panels ranging between 1,500 and 2,000 feet in length. (Tr. Vol. III, 654-55, 665-66). Each panel has pillars that will minimize the potential for subsidence during mining. (Tr. Vol. I, 51, DEQ Ex. 12-121. Tr. Vol. I, 51.) During mining, the native topography and vegetation remain except for the excavated trench. (Tr. Vol. III, 655). In total, a trench will last only three years before getting reclaimed. (Tr. Vol. II, 397).

38. The Mine Plan contains a fire control and prevention plan for surface and subsurface operations. (Tr. Vol. II, 159, DEQ Ex. 12-314). The fire control and prevention plan establishes a mitigation system in the event of any type of fire during mining or other operations. (Tr. Vol. II, 159-60, DEQ Ex. 12-314). MSHA will regulate the ground control program for fires or other safety related items at the mine. (Tr. Vol. II, 160).

39. Brook's Mine Plan also addresses subsidence in three ways. First, addenda MP-6 contains Brook's subsidence control plan that analyzes potential subsidence at the mine. (Tr. Vol. II, 162, DEQ Ex. 12-319). The subsidence control plan discusses previous mining activity, Brook's plan to monitor and assess subsidence, and Brook's plan to control and remediate any subsidence that occurs. (DEQ Ex. 12-320-27). Cardno MMA prepared the subsidence control plan because it had "done a lot of work for highwall miner operations in the East" and knew people "that manufacture and operate the highwall miner systems very well." (Tr. Vol. II, 163; Tr. Vol. III 666; Tr. Vol. IV, 817).

40. In addition to the subsidence control plan, Brook has committed to developing the required MSHA ground control plan before it begins mining. (Tr. Vol. III, 662-65). The ground control plan will sample, test, design, and engineer each mine panel so that it meets MSHA's safety factor and creates both short and long-term subsidence protection. (Brook Ex. 10(d); Tr. Vol. II, 325-26; Tr. Vol. III, 662-63).

41. Brook's permit application states "[s]amples will be collected and strength testing will be conducted on those samples in order to satisfy the requirements of the MSHA ground control plan, which must be approved prior to mining. The future testing results and analysis in preparation of the MSHA ground control plan will be provided to WDEQ/LQD." (DEQ Ex. 5-018). The permit application also states that "[t]he results of the tensile strength tests will be

utilized to size both the web pillars and barrier pillars to achieve a factor of safety as set by the MSHA ground control plan to conduct mining and minimize the risk of subsidence.” (*Id.*)

42. Should subsidence occur, “mining operations have to cease immediately.” (Tr. Vol. II, 320). Brook then has to mitigate and repair any subsidence. (DEQ Ex. 12-318-33; Tr. Vol. II, 354-55).

43. Brook’s Mine Plan describes Brook’s blasting plan. (DEQ Ex. 12-335-38). The blasting plan describes Brook’s proposed blasting operations, explosive storage, and applicable laws and regulations. (DEQ 12-334-38). As part of its blasting plan, Brook does not intend to carry out any cast blasting or any blasting in its first year of operation. (Tr. Vol. III, 583, 589).

44. Brook’s Mine Plan discusses how Brook will control surface water. Brook’s plan will use reservoirs, diversions, ditches, and alternative sediment control measures to control surface water. (DEQ Ex. 12-055-59, 61). Brook will also monitor surface water sources. (DEQ Ex. 12-062-64).

45. Brook’s Mine Plan discusses groundwater, including domestic water wells. Brook has committed to replacing the quantity and quality of water sources lost because of Brook’s proposed operations. (DEQ Ex. 12-059-61). Brook will also conduct groundwater monitoring. (DEQ Ex. 12-064-65).

46. DEQ found the Mine Plan complied with the applicable statutes and regulations. (Tr. Vol. I, 45-46; Tr. Vol. II, 161-62).

47. Volume XII of Brook’s permit application contains Brook’s Reclamation Plan. (DEQ Ex. 13). The Reclamation Plan explains how reclamation will occur at the Brook Mine and how Brook will mitigate any modifications to overburden material, vegetation, and wildlife.

Id., Tr. Vol. II, 175. When mining is complete and reclamation has finished, the Reclamation Plan states Brook will return the land use to at least equal or better than the original use. *Id.*

48. The Reclamation Plan describes: post-mining land use (RP.2); contouring plan for affected lands (RP.3); spoil replacement (RP.4); topsoil replacement (RP.5); revegetation practices (RP.6); wildlife restoration (RP.7); final hydrologic restoration (RP.8); wetland mitigation (RP.9); reestablishment of essential hydrologic functions and agricultural utility on alluvial valley floors (RP.10); reclamation of mine facilities, road, and railroads (RP.11); reclamation and bonding of dual permitted and license to mine areas (RP.12); reclamation schedule (RP.13); bond release (RP.14); underground mines (RP.15); reclamation costs (RP.16); and references (RP.17). (DEQ Ex. 13-014-30; Tr. Vol. II, 192-95). In dually permitted areas, Brook must reclaim any areas it disturbs even if that disturbance occurs within a dually permitted area. (DEQ Ex. 13-075; Tr. Vol. II, 184, 188-89).

49. DEQ found the Reclamation Plan complied with the applicable statutes and regulations. (Tr. Vol. I, 45-46).

50. With its permit application, Brook submitted an estimated reclamation bond in the approximate amount of \$370,000 to cover 30.8 acres of disturbance in year 0. (Tr. Vol. III, 590, DEQ Ex. 32). For the areas where Brook's operations will overlap with existing permits, like BHC, Brook's bond will cover all disturbance from Brook's operations. (Tr. Vol. II, 188-90)

B. DEQ's review of Brook's permit application

51. Once Brook submitted its permit application, DEQ conducted two stages of review set out in the Environmental Quality Act. First, DEQ conducted a completeness review. (Tr. Vol. I, 43-44). For this step, DEQ reviewed Brook's permit application to determine whether it is complete based on requirements set forth in the rules, regulations, and statutes. (*Id.*, 43).

52. After DEQ determined Brook's permit application was complete, DEQ notified Brook that the application was complete and DEQ had gone into the technical review process. By statute, the technical review process can take up to 150 days. (*Id.*, 56).

53. The technical review process analyzed "the entire document from front to back cover" and determined "how technically accurate [the application] can possibly be." (*Id.*, 44). "Technically accurate" or "technically adequate" means the permit application "has met all the statutes, rules, regulations, and providing [sic] all the information that [DEQ] needs to make assessment." (Tr. Vol. VII, 1504, 45-46, Tr. Vol. I, 59-60).

54. As a result, the technical review compared Brook's permit application to Wyoming statutes, DEQ regulations, and DEQ guidelines. (Tr. Vol. I, 56-58).

55. For its technical review, DEQ enlisted eleven in-house experts and four external experts, including Wyoming Game & Fish, US Game & Fish, US Army Corps of Engineers, and State Historic Preservation Office, to review the substance of Brook's permit application. (*Id.*, 47, 64, 85-86, 104). DEQ also applied standard mining and engineering principles, used modeling software to review the geology and hydrology aspects of the permit application, and relied on sources of data outside the permit application to verify Brook's findings. (*Id.*, 56-57; Tr. Vol. II 395-96, 410).

56. When reviewing subsidence information in the permit application, DEQ worked through computer models and utilized formulas developed by the Office of Surface Mining. DEQ also attended training on analyzing subsidence and requested more information on the model used in the subsidence control plan. (Tr. Vol. II, 164, 168). DEQ concluded the Brook mine would not subside. (*Id.*, 162, 169).

57. During the technical review process, DEQ sent comments to Brook informing it of deficiencies in the permit application. (Tr. Vol. I, 44-45). Brook then responded to DEQ's comments with additional information; Brook also modified its application when necessary. (*Id.*, 58-60). DEQ and Brook went through six rounds of comments and responses on Brook's permit application. (*Id.*, 58; DEQ Ex. 34).

58. Brook's responses and revisions to the permit application ultimately satisfied DEQ, leading it to determine Brook's application was "technically accurate" and suitable for publication. (*Id.*, 59-60, 161-62, 188).

59. After DEQ deemed Brook's application complete and without deficiency, it directed Brook to publish its permit application for public review and comment. In making this decision, DEQ had not yet issued a cumulative hydrologic impact assessment or the findings set out in Wyo. Stat. Ann. § 35-11-406(n).

60. Brook first published its permit application on December 27, 2016. (Tr. Vol. I, 53).

61. Between December 27, 2016 and January 27, 2017, DEQ received twenty public comments relating to Brook's permit application. Of those twenty comments, fourteen were objections to Brook's permit application.

62. Those objections challenged many parts of Brook's permit application, including Brook's analysis of alluvial valley floors, blasting, bonding, probable hydrologic consequences, reclamation, and subsidence. (BHC Ex. 3, Fisher Ex. 26, PRBRC Exs. 1, 2, 5, 9, 10)

63. Upon review of all objections, DEQ still found Brook's permit application met the applicable statutes and regulations. (Tr. Vol. II, 196-97). DEQ, however, will add two conditions to Brook's permit. First, DEQ will require Brook to remove the word adjudicated on

pages MP-38 (DEQ Ex. 12-052) and MP-48 (DEQ Ex. 12-052) of its Mine Plan and replace with “permitted.” (Tr. Vol. II, 290-91). Second, DEQ will adjust the location of surface monitoring stations to better capture data. (*Id.*, 430-31).

C. The Council’s Involvement

64. The objectors requested that DEQ hold an informal conference to decide their objections. (BHC Ex. 3, Fisher Ex. 26, PRBRC Ex. 1). But the DEQ director exercised his discretion not to hold an informal conference and referred the matter to the Council. (February 22, 2017 Order of Dismissal, Docket 17-4801).

65. The Council originally scheduled a hearing on these objections for February 13, 2017 (Docket No. 17-4801). The Council also requested the parties brief whether the Council had jurisdiction to hear that case because no one had requested a contested case. After briefing, the Council dismissed that docket, ruling:

[u]nder Wyo. Stat. 35-11-406(k) and (p) and the Department of Environmental Quality’s rules of practice and procedure, the Council may only exercise jurisdiction over the Brook Mine permit application after an interested person has filed a petition for a contested case with the Council – something not done as part of this docket. Council, in this docket, is without authority to accept jurisdiction over the Brook Mine permit application through the referral from the Director.

(February 22, 2017 Order of Dismissal).

66. After this ruling, three of the objectors requested a contested case hearing: PRBRC (Docket No. 17-4804), BHC (Docket No. 17-4802), and Fishers (Docket No. 17-4803). The Council consolidated all dockets into Docket No. 17-4802.

67. Before the consolidated hearing, the Council set deadlines for discovery requests, naming of expert witnesses, and dispositive motions. (March 13, 2017 Order of Consolidation

and Schedule). The Council also set pre-hearing exhibit and witness disclosure dates and a hearing schedule and order. (*Id.*)

68. The Council conducted the first part of the hearing on May 22-26, 2017 in Sheridan, Wyoming. Unable to get all of the evidence in, the Council extended the hearing for two additional days on June 7-8, 2017 in Cheyenne, Wyoming (May 31, 2017 Order for Hearing). After those two days, the parties rested.

III. CONCLUSIONS OF LAW (DECISION ON THE APPLICATION)

A. The Scope of the Council's Decision

1. The Wyoming Environmental Quality Act (the Act) created the Council and specifies its authority. *Amoco Prod. Co. v. State Bd. of Equalization*, 12 P.3d 668, 673 (Wyo. 2000). So the Council must exercise only the authority the Act granted to it. *Id.*; *Platte Dev. Co. v. State, Env'tl. Quality Council*, 966 P.2d 972, 975 (Wyo. 1998).

2. Under the Act, DEQ must evaluate a permit application and decide if it is complete. Wyo. Stat. Ann. § 35-11-406(e). Wyoming statutes define a complete application as “the application contains all the essential and necessary elements and is acceptable for further review for substance and compliance with the provisions of this chapter. Wyo. Stat. Ann. § 35-11-103(e)(xxii).

3. After informing a permit applicant that the application is complete, “the administrator shall review the application and unless the applicant requests a delay advise the applicant in writing within one hundred fifty (150) days from the date of determining the application is complete, that it is suitable for publication under subsection (j) of this section, that the application is deficient or that the application is denied. All reasons for deficiency or denial shall be stated in writing to the applicant.” Wyo. Stat. Ann. § 35-11-406(h). The Act defines a

deficiency as “an omission or lack of sufficient information serious enough to preclude correction or compliance by stipulation in the approved permit to be issued by the director.” *Id.* at 103(e)(xxiv).

4. Once an applicant publishes the permit application, an interested person can file an objection and receive either an informal conference with the DEQ director or a public hearing if the director elects not to have an informal conference. Wyo. Stat. Ann. § 35-11-406(k).

5. In a public hearing, the Council acts as the hearing examiner and decides “all cases or issues arising under the laws, rules, regulations, standards or orders issued or administered by the department or its air quality, land quality, solid and hazardous waste management or water quality divisions.” Wyo. Stat. Ann. § 35-11-112(a). The Council has the specific authority to conduct hearings: 1) to promulgate rules and regulations required to administer the Act; 2) adopt, amend, or repeal rules or regulations as recommended by advisory boards; 3) contesting “the administration or enforcement of any law, rule, regulation, standard or order issued or administered by the department or any division thereof;” or 4) contesting the “grant, denial, suspension, revocation or renewal of any permit, license, certification or variance authorized or required by this act.” Wyo. Stat. Ann. § 35-11-112(a)(i)-(iv).

6. The Council concludes it must exercise the authority listed under (a)(iii) because the case will decide DEQ’s administration and enforcement of the permitting procedures for a new coal mine, not rulemaking or an already granted or denied permit.

7. The Council finds that exercising this authority requires the Council to decide if DEQ correctly administered and enforced the requirements that a permit application is complete and non-deficient.

8. The Council notes that before a permit can issue, the Act requires that the administrator make specific findings under Wyo. Stat. Ann. § 35-11-406(n). These findings include the cumulative hydrologic impact assessment DEQ must perform. (Tr. Vol. II, 413-16).

9. Despite requests from the objectors, the Council concludes that it does not have the authority to make the findings under Section 406(n) for three reasons. First, section 406(n) explicitly states “the administrator” makes the findings in that section of the Act. Wyo. Stat. Ann. § 35-11-406(n). The Act defines “administrator” as “the administrator of each division of the department.” Wyo. Stat. Ann. § 35-11-103(a)(v). That definition does not include this Council. Second, the findings under 406(n) require DEQ, as the regulating agency, to issue a cumulative hydrologic impact assessment. *Id.* at § 406(n)(iii); WY ADC ENV LQC Ch. 19 § 2 (stating the cumulative hydrologic impact assessment “shall be sufficient to make the determination of W.S. § 35-11-406(n)(iii).”) That assessment takes “an intensive look at surface and groundwater quality and quantity within an area,” possibly including other nearby mines. (Tr. Vol. II, 413-15). The assessment can use data from multiple permits or permit applications and outside data sources. (*Id.*, 415). The Council concludes it does not possess the resources or expertise to make those findings. Third, DEQ has not yet issued findings under 406(n), and the Act does not require DEQ to issue the section 406(n) findings before it deems an application suitable for publication. *See generally* Wyo. Stat. Ann. § 35-11-406. As a result, DEQ has not administered or enforced that part of the Act. Without DEQ either administering or enforcing section 406(n), the Act does not grant the Council authority to step into the shoes of the regulator. *See* Wyo. Stat. Ann. § 35-11-112(a)(i)-(iv).

10. As a result, the Council must issue findings of fact and a decision on the relevant issues as described above within 60 days of the final hearing. *Id.* at 406(p).

B. The Amount of Votes Required

11. Under the Act, all matters that the Council hears “shall be decided by a majority vote of those on the Council.” Wyo. Stat. Ann. § 35-11-111(d).

12. Members of the Council, however, may recuse themselves by providing written notice of recusal or entering a verbal notice into the record. Wyo. Admin. Code Practice & Procedure Ch. 2 § 7(b). If a councilmember recuses him or herself, then that councilmember “shall not participate in the contested case.” *Id.*

13. The Council finds that a recusal from a case means the recused council member no longer serves on the Council for the purposes of that contested case.

14. Here, two members of the council, Richard Fairservis and Megan Degenfelder, have recused themselves. For purposes of this contested case neither Mr. Fairservis nor Ms. Degenfelder serve on the Council.

15. Therefore, the Council finds that Brook must obtain a majority of the five councilmembers serving on this case. *See* Wyo. Stat. Ann. § 35-11-111(d).

C. The Applicable Statutes and Regulations

16. Under the Act, Brook bears the burden of proving that its application is complete and non-deficient. To meet this standard, Brook must prove its application complies with the applicable statutes and regulations.

17. The applicable statutes are Wyo. Stat. Ann. § 35-11-406(a)-(b), (e)-(h).

18. Section 406(a) requires the permit applicant to provide information about the operator, surface owners, maps of the proposed permit area, and basic information about the proposed mining operation. Section 406(b) requires the applicant provide a Mine Plan and Reclamation Plan that explains in detail how the operator will disturb and restore the area within

the proposed permit area. The section also requires the applicant provide surface owner consent or an order in lieu of surface owner consent to the Mine Plan and Reclamation Plan.

19. Sections 406(e)-(h) require Brook's permit application be complete and non-deficient as described above.

20. The Land Quality Division (LQD) has also promulgated coal regulations that implement the Act. Brook must comply with those regulations as described below.

21. Chapter 2 of LQD's coal regulations requires Brook provide detailed information that complies with all applicable statutes and regulations. WY Admin Code ENV LQC Ch. 2, § 1. Brook must provide information on surface ownership, mineral ownership, previous mining history, and taxpayer information. *Id.* at § 2. Brook's application must also contain information on vegetation baseline information and methodology, wildlife studies, land use history, groundwater sampling data, geology and lithology data, soil assessments, water quality and quantity data, climatology, cultural resource assessments. *Id.* at §§ 3-4. Sections 5 and 6 expand the details Brook must include in its Mine and Reclamation Plans. *Id.* at §§ 5-6.

22. Chapter 3, § 2 requires Brook provide sufficient information relating to the presence or absence of alluvial valley floors within the permit area and on adjacent areas where an alluvial valley floor containing areas of sub-irrigation or flood irrigation agricultural activities may be affected. *Id.* at Ch. 3, § 2(b). Brook must include maps, geologic data, soils and vegetation data, geohydrologic descriptions, and information to identify geologic, hydrologic and biologic characteristics. *Id.* at § 2(c) Brook must also provide a monitoring plan to meet requirements of Chapter 5, § 3(b). *Id.*

23. Chapter 4, § 2 requires Brook to reclaim the land to a condition equal to or greater than its prior condition. *Id.* at Ch. 4, § 2(a). Brook must submit a proposed schedule for

backfilling and grading with supporting analysis and return all affected lands to their approximate original contour. *Id.* at § 2(b)-(c).

24. Chapter 5, §§ 3, 6 require Brook's operations to preserve and reestablish the geologic, hydrologic, and biologic characteristics to support essential hydrologic functions. *Id.* at Ch. 5, § 3(a), (c). Brook must install an environmental monitoring system to provide sufficient information showing essential hydrologic functions of the alluvial valley floor are being preserved and established on and outside affected lands. *Id.* at § 3(b). Brook must minimize disturbance of the prevailing hydrologic balance, unwarranted subsidence, submit a subsidence control plan, and prepare a written demonstration showing the fill has a minimum static safety factor of 1.3. *Id.* at § 6(d)-(e).

25. Chapter 6 requires Brook to comply with all applicable federal, state, and local laws when using explosives to mine. *Id.* at Ch. 6, § 1. Brook must publish a blasting schedule in a newspaper of general circulation and by mail to each residence or owner within one-half mile of blasting sites at least 30 days before blasting. *Id.* at § 3. The schedule shall be republished and redistributed every 12 months. *Id.* If the schedule changes, Brook must revise and republish the schedule at least 30 days but not more than 60 days before blasting. *Id.* Residents and owners within one-half mile shall be notified of the manner for requesting a pre-blast survey. *Id.*

26. Chapter 7, §§ 1, 2 requires Brook's application contain information relating to soils, vegetation, fish, wildlife, topography, geology, mineral deposits limited to the affected areas, subsidence control plan, and Reclamation Plan. Section 2 requires Brook adhere to the backfilling, grading and contouring requirements in Chapter 4, § 2(b). *Id.* at §§ 1, 2.

27. Chapter 12, § 1 requires the Administrator to make a determination in writing as to the existence and extent of an alluvial valley floor within the permit area or on adjacent areas

where the mining operation may affect surface water or groundwater that supply an alluvial valley floor. *Id.* at §1(a).

28. Chapter 19, § 2 requires Brook to provide information sufficient to enable the Administrator to determine the probable cumulative hydrologic impacts on surface and groundwater systems. *Id.* at § 2(a).

D. The Council's Decision on Brook's Application

29. Applying the findings of fact to this law, the Council concludes Brook's permit application is complete as defined in the Act. *See* Wyo. Stat. Ann. §§ 35-11-103(e)(xxii), 406(e)-(f). The application includes all of the sections, information, data, and maps the Act and applicable regulations require. The Council is also convinced by DEQ's comprehensive testimony that Brook's permit application is complete. (Tr. Vol. 1, 52, 112, Tr. Vol. II, 257, 318, 344-45, Tr. Vol. VII, 1509).

30. The Council concludes Brook's application is also not deficient because it meets the requirements of all applicable statutes and regulations. *See* Wyo. Stat. Ann. §§ 35-11-103(e)(xxiv), 406(h). Brook did all of the required studies and time to develop a non-deficient application. Likewise, the Council accepts DEQ's testimony that its technical review of Brook's application met the applicable statutes and regulations. (Tr. Vol. I, 43-46, Tr. Vol. II, 188, 316-17, Tr. Vol. III, 521).

31. Specifically, the Council finds the adjudication file in Volumes I, IA, and II contain the information required by applicable law. *See* Wyo. Stat. Ann. §§ 35-11-406(a)-(b); WY Admin Code ENV LQC Ch. 2, §§ 1-2.

32. Appendix D1, Land Use, in Volume III meets the requirements of applicable law. *See* Wyo. Stat. Ann. §§ 35-11-406(a); WY Admin Code ENV LQC Ch. 2, §§ 2-3.

33. Appendix D2, History, in Volume III meets the requirements of applicable law. *See* Wyo. Stat. Ann. §§ 35-11-406(a); WY Admin Code ENV LQC Ch. 2, §§ 1-2.

34. Appendix D3, Archeological and Paleontological Resource, in Volume III meets the requirements of applicable law. *See* Wyo. Stat. Ann. §§ 35-11-406(a); WY Admin Code ENV LQC Ch. 2, §§ 3-4.

35. Appendix D4, Climatology, in Volume III meets the requirements of applicable law. *See* Wyo. Stat. Ann. §§ 35-11-406(a); WY Admin Code ENV LQC Ch. 2, § 4.

36. Appendix D5, Topography, Geology and Overburden Assessment, in Volume IV meets the requirements of applicable law. *See* Wyo. Stat. Ann. §§ 35-11-406(a); WY Admin Code ENV LQC Ch. 2, § 4.

37. As for the objections related to this section of Brook's permit application, the Council adopts DEQ's findings. The Council notes DEQ found no geologic hazards exist at the proposed Brook mine (Tr. Vol. I, 89-90). But if they do, DEQ has a methodology for addressing geologic hazards. (*Id.*, 90-91).

38. Appendix D6, Hydrology, in Volume V meets the requirements of applicable law. *See* Wyo. Stat. Ann. §§ 35-11-406(a)-(b); WY Admin Code ENV LQC Ch. 2, § 4.

39. As for the objections related to this section of Brook's permit application, the Council is persuaded by the testimony of Dr. Muthu Kuchanur. Dr. Kuchanur has a PhD in environmental engineering and teaches national level training courses on groundwater modeling, coal mine permitting hydrology, quantitative hydrogeology, and applied engineering principles for the Office of Surface Mining. (Tr. Vol. III, 459-60). Dr. Kuchanur reviewed Brook's modeling process, the methodology used for the model, the input data used in the model, and the accuracy of the model. (*Id.*, 462-64). Dr. Kuchanur's review concluded that Brook's model

matched available data and multiple lines of evidence supported the accuracy of the model. (*Id.*, 480-83). Dr. Kuchanur also compared the predicted effect of Brook's mining on groundwater and found that it is small compared to existing groundwater sources. (*Id.*, 489-90). He noted that the groundwater model accounted for dewatering coal seams and the effect that could have on surrounding areas. (*Id.*, 561-62).

40. As a result, the Council concludes that Brook's groundwater model and the other hydrology aspects of the permit complied with the relevant statutes and regulations. (*Id.*, 496). Brook's permit application explains the probable hydrologic consequences of proposed mining. (Tr. Vol. VII, 1475). The baseline hydrology in Appendix D6, the probable hydrologic consequences discussion in the Mine Plan, and the Reclamation Plan explain the hydrologic consequences of Brook's proposed mining. (*Id.*, 1486). Brook's proposed mining would have little impact on groundwater inside the proposed permit boundary. (Tr. Vol. VII, 1482-83). Brook's isopach maps show a limited drawdown in groundwater, and the data in the permit application shows limited or no connection between the coal seams that Brook intends to mine and other water sources. (Tr. Vol. III, 555, 564). Brook's groundwater model also shows it is unlikely for Brook's operations to have a large impact on domestic wells. (*Id.*, 566).

41. In the TR-1 area specifically, the Council concludes that breaching the coal seam in that area will have limited impact on the Tongue River or other sources of groundwater. (*Id.*, 576). The Council notes Brook attempted to sample groundwater in the area around trench TR-1 but BHC had the sheriff's department escort Brook's contractor out of the area. (*Id.* 700-01). Still, Brook's groundwater model, geologic cross-sections, regional aquifer information, and other publically available data explain the groundwater in the saturated backfill of the TR-1 area. (Tr. Vol. VII, 1512).

42. The Council also agrees with Dr. Kuchanur's testimony about BHC's groundwater restoration demonstration (GRD). (Tr. Vol. VII, 1464- 1483, 1508-09). The GRD had a different objective than Brook's groundwater model and the permitting process in general. (Tr. Vol. VII, 1464-65). The GRD used past data to show recharge and does not predict the consequences of mining. (*Id.*, 1465-66). The GRD also used old data with unexplained variability, several orders of magnitude in some places. (*Id.*, 1477-78, BHC Ex. 15-040). Even so, the flow and recharge rates in the GRD matched predictions in Brook's groundwater model. (Tr. Vol. VII, 1466-71). The GRD also showed minimal interaction between the Tongue River and the saturated backfill, providing further evidence of the accuracy of Brook's groundwater model. (*Id.*, 1471-73, 1481-82).

43. Appendix D7, Soil Resources Assessment, in Volume VI meets the requirements of applicable law. *See* Wyo. Stat. Ann. §§ 35-11-406(b); WY Admin Code ENV LQC Ch. 2, §§ 3-4.

44. Appendix D8, Vegetation Inventory, in Volume VII meets the requirements of applicable law. *See* Wyo. Stat. Ann. §§ 35-11-406(b); WY Admin Code ENV LQC Ch. 2, § 3.

45. Appendix D9, Wildlife, in Volume VIII meets the requirements of applicable law. *See* Wyo. Stat. Ann. §§ 35-11-406(a); WY Admin Code ENV LQC Ch. 2, § 4, Ch. 4, § 2.

46. Appendix D10, Wetlands, in Volume IX meets the requirements of applicable law. *See* WY Admin Code ENV LQC Ch. 2, § 4, Ch. 4, § 2.

47. Appendix D11, Alluvial Valley Floors, in Volume X meets the requirements of applicable. *See* WY Admin Code ENV LQC Ch. 2, § 4, Ch. 3, § 2, Ch. 12, § 1. The Council concludes that Brook will not affect any alluvial valley floors, including those found in 2016. (Tr. Vol. II, 11-13).

48. The Mine Plan in Volume XI meets the requirements of applicable law. *See* Wyo. Stat. Ann. §§ 35-11-406(b); WY Admin Code ENV LQC Ch. 2, § 5, Ch. 3, § 2, Ch. 4, § 2, Ch. 6, §§ 1-6, Ch. 12, § 1.

49. As to objections about blasting, the Council agrees with Mr. Doug Emme that Brook's blasting will have little effect on nearby structures. (Tr. Vol. III, 584, 608). Still, the Council notes landowners within a half mile of the mine can request a pre-blast survey and Brook will publish a blasting schedule. (*Id.*, 582, 584-85).

50. As to objections about Brook's subsidence control plan and subsidence generally, the Council concludes Brook has met the relatively minimal requirements for a subsidence control plan. (Tr. Vol. II, 247-48). The Council also concludes that Brook's commitment to compile the required MSHA ground control plan will address subsidence. (*Id.*, 326-28). The Council concludes the calculations necessary for the ground control plan provide the same data DEQ required for every mining panel. (Tr. Vol. III, 663). It will also provide data Dr. Marino tested was needed. (Tr. Vol. II, 325). The ground control plan will also engineer each mining trench for both long and term-subsidence prevention. (Tr. Vol. II, 355-56). The mining process will also protect against subsidence by having pillars that run the length of each mine panel. (Tr. Vol. I, 120; Tr. Vol. II, 369).

51. The Reclamation Plan in Volume XII meets the requirements of applicable law. *See* Wyo. Stat. Ann. §§ 35-11-406(b); WY Admin Code ENV LQC Ch. 2, § 6, Ch. 3, § 2, Ch. 4, § 2.

52. As to objections about the adequacy of Brook's proposed bond, the Council accepts Mr. Emme's testimony that Brook's proposed amount is "robust" and "higher" than DEQ would have required. (Tr. Vol. III, 590). The Council also notes that DEQ has not yet set a

bond but will do so before issuing a permit. (*Id.*, 586-87). Once DEQ sets the reclamation bond, it will remain in place until DEQ finds Brook has successfully reclaimed disturbed land. (Tr. Vol. II, 180).

53. The Council notes DEQ's authority to enforce Brook's commitments in the permit application. (Tr. Vol. I, 117, 175-76, 230, 334, 349, Tr. Vol. III, 491, 493, 495, 624-25, 627). The Council also notes that other administrative agencies like MSHA, Game & Fish, Department of Transportation, DEQ's water and air quality divisions, Solid and Hazardous Waste Department, and the State Engineer's Office will have oversight over parts of Brook's operations. (Tr. Vol I, 152-53, 160-61, 183-84, 330, 538).

54. The Council finds that it should not impose additional permit conditions for two reasons. First, the Act does not authorize the Council to impose permit conditions. Instead, the Act authorizes the administrator, the director, and DEQ generally to administer permits, including any conditions on them. *See* Wyo. Stat. Ann. § 35-11-109. Second, the Council finds that no additional permit conditions are necessary for Brook's permit application to be complete and non-deficient.

55. Therefore, the Council finds that DEQ correctly determined Brook's permit application was complete, non-deficient, and suitable for publication. The Council's decision on the application pursuant to Wyo. Stat. Ann. § 35-11-406(p) is that: 1) DEQ should make the findings under Section 406(n) of the Act; and 2) based on the findings, the DEQ Director take appropriate action on Brook's permit application based on those findings.

DATED: July 24, 2017.



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CERTIFICATE OF SERVICE

I hereby certify that on July 24, 2017, I served a true and correct copy of the foregoing by email to the following:

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Subject: Proposed Findings of Fact & Conclusions of Law
Date: Monday, July 24, 2017 3:49:29 PM
Attachments: [2017 7-24 Proposed Findings of Fact & Conclusions of Law FINAL.pdf](#)
[Exhibit A.pdf](#)

Counsel:

Please see attached our proposed findings of fact and conclusions of law.

Regards,
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**BEFORE THE ENVIRONMENTAL QUALITY COUNCIL
STATE OF WYOMING**

IN RE BROOK MINE APPLICATION)
) **DOCKET 17-4802**
TFN 6 2-025)

POWDER RIVER BASIN RESOURCE COUNCIL'S PROPOSED FINDINGS OF FACT AND CONCLUSIONS OF LAW

Pursuant to the June 13, 2017 Order from the Environmental Quality Council (“EQC” or “Council”), the Powder River Basin Resource Council (“Resource Council” or “PRBRC”) hereby submits its Proposed Findings of Fact and Conclusions of Law in the above-captioned proceedings.

I. General Findings

1. According to the Wyoming Environmental Quality Act (“WEQA” or “Act”), “No mining operation may be commenced or conducted on land for which there is not in effect a valid mining permit to which the operator possesses the rights.” W.S. § 35-11-405(a).

2. Requirements for coal mine permit applications as well as grounds for approval and denial are governed by Section 406 of the Wyoming Environmental Quality Act, along with the Land Quality Division's ("LQD") Coal Rules and Regulations (hereafter "Coal Rules").

3. Specifically, as discussed below, certain findings related to the application's compliance with the WEQA and DEQ regulations must be made before the EQC can reach a decision on the permit application. *Id.* at §§ 406(n)(i)-(vii).

4. DEQ regulations require information in a permit application to be “current” . . . “accurate and complete.” Coal Rules, Ch. 2 § 1; *see also* W.S. § 35-11-406(n)(i) (requiring a permit applicant to prove that the application is “accurate and complete.”).

5. In response to the required public notice, the Resource Council timely filed objections to Brook Mining Company, LLC’s (“Brook” or “applicant” or “company”) coal mine permit application on January 27, 2017. Ex. POW 1. The Resource Council also timely requested a hearing before the EQC, initiating this contested case hearing.

6. Members of the Resource Council also timely filed objections to Brook’s coal mine permit application. John and Vanessa Buyok, Gillian Malone, Sadie Clarendon, Jane Buyok, Anton Bocek, Joan Tellez, Wendy Condrat, Brooke Collins, and William Bensel filed objections. Ex. POW 2-10. Their objections and concerns demonstrate that the Resource Council, through representation of its members, is an “interested person” within the meaning of Section 406(k) and a “person with an interest which is or may be adversely affected” within the meaning of Ch.1 § 17(b) of DEQ’s Rules of Practice and Procedure.

7. A contested case hearing was held in this matter on May 22-26 and June 7-8, 2017.

8. After the contested case hearing, the EQC must “issue findings of fact and a decision on the application.” W.S. § 35-11-406(p). This “decision on the application” is consistent with the authority granted to the EQC under the WEQA that the agency may “Order that any permit, license, certification or variance be granted, denied, suspended, revoked or modified.” *Id.* at § 112(c)(ii).

9. In making this decision, the EQC’s review of DEQ’s permitting decisions and of the permit application is *de novo*. Under *de novo* review, the EQC must look afresh or “from the

new” at the permit application and cannot afford deference to DEQ in issuing any findings of fact or in making the decision on the permit application.¹

10. As discussed below, the permit application is deficient because it contains “omission[s] or lack of sufficient information serious enough to preclude correction or compliance by stipulation in the approved permit to be issued by the director.” *Id.* at § 103(e)(xxiv). If a deficiency exists, by definition it *cannot* be remedied by a permit condition.

11. Also, as discussed below, the applicant has not met its burden of proof to demonstrate compliance with key parts of the law, including the findings of Section 406(n) and bonding.

12. Since the application contains deficiencies, and it is not in compliance with the law, the EQC must order the Director to deny the permit. *Id.* at §§ 406(h), 406(n), 406(p).

II. The Permit Applicant Has Not Met Its Burden of Proof

13. Under Section 406(n), “The applicant for a surface coal mining permit has the burden of establishing that his application is in compliance with [the WEQA] and all applicable state laws.” The Wyoming Supreme Court has held that this burden extends to any hearing before the EQC on a coal mine permit. *Grams v. Env’tl Quality Council*, 730 P.2d 784, 789 (Wyo. 1986).

14. The burden of proof rests on the permit applicant alone. *Id.* at 406(n). The EQC cannot rely on DEQ’s testimony or evidence production designed to assist the permit applicant in meeting its burden of proof. *See, e.g.* Tr. at 1539 (Mr. Pope: “Brook has a burden of proof in this hearing. And in particular one of the things that Brook has to demonstrate is that everything in the statutes and regulations is included within the permit application.”). This is an important requirement because DEQ must remain in a neutral position as the permit has not yet been issued.

¹ This standard of review is especially applicable here where the scope of the EQC’s decision is to make the decision on the permit application, a decision DEQ has not made.

15. Through these proceedings, the permit applicant did not meet its burden of proof to demonstrate compliance with the law, including the findings of Section 406(n),² and to prove that no part of the permit application is deficient.³

16. The permit applicant presented only one witness who presented testimony about the application, Mr. Barron. Mr. Barron does not have personal experience in highwall mining, and has never helped to prepare a permit application for a highwall mine before. Tr. at 729 (Testimony of Mr. Barron).

17. Mr. Barron admitted that one needs to have a “certain level of expertise” to understand scientific principles, standards of best industry practice, and to interpret regulatory requirements. *Id.* at 733-34. However, Mr. Barron did not have expertise or professional knowledge to present testimony related to subsidence risk or hydrology. Mr. Barron is not a geologist or a hydrogeologist. *Id.* at 728, 1520-21. Nor is he an engineer with expertise in subsidence risk or control. *Id.* at 737; 757-58. Mr. Barron did not prepare the subsidence control plan and was not qualified to present testimony regarding its findings. *Id.* at 734.

18. Therefore, Brook did not present any testimony to meet its burden of proof to rebut the expert testimony, expert reports, and other evidence identifying deficiencies in the permit application presented by the Resource Council, Big Horn Coal, and the Fishers.

III. The Permit Application Does Not Include or Support the Findings of Section 406(n)

19. The critical findings of Section 406(n) have not yet been made, and as DEQ has admitted, they must be made before a decision on the permit application can be made. *See, e.g.* Tr. at 7-8 (Opening statement of DEQ).

² As discussed in the Resource Council’s recent brief on the subject, Section 406(p) dictates that once there is a hearing, the EQC makes the “decision on the application,” not the DEQ. There is no later opportunity for the DEQ to review the permit’s compliance with Section 406(n).

³ *See also* Tr. at 1504-05 (Testimony of Dr. Kuchanur regarding technical adequacy).

20. Additionally, as discussed below, testimony and evidence presented at the hearing demonstrate that the findings cannot be made at this time because of deficiencies in the permit application.

21. The lack of findings, and the inability for the DEQ or EQC to make the findings after the hearing, necessitates denial of the permit application. W.S. § 35-11-406(n).

A. A Finding that the “Application is Accurate and Complete” Cannot Be Made

22. As presented below, the application is neither accurate nor complete for a variety of important issues, including subsidence control, water quality and quantity data and assessment, facilities, coal production estimates, roads, blasting, and bonding.

23. Since a finding that “[t]he application is accurate and complete” cannot be made, the Council must order that the permit application should be denied. *Id.* at § 406(n)(i).

B. The 406(n)(v) Findings Related to Alluvial Valley Floors Cannot be Made

24. Alluvial valley floors (“AVFs”) are defined by the WEQA as “the unconsolidated stream laid deposits holding streams where water availability is sufficient for subirrigation or flood irrigation agricultural activities . . .” *Id.* at § 103(e)(xvii).

25. Protection of these AVFs, both on the mining site and in adjacent offsite areas, is a main requirement of SMCRA to preserve the ecological integrity and “essential hydrologic functions” of important agricultural areas as coal mining moved into the “arid and semiarid regions of the country.” *See* 30 U.S.C. § 1265(b)(10)(F); W.S. § 35-11-415(b)(x).

26. These federal requirements are reflected in Section 406(n)(v) and the findings required for a decision on a coal mine permit to ensure that a permit will protect the functions of AVFs.

27. These findings and affirmative obligations to prevent harm to alluvial valley floors are particularly ubiquitous here, where the alluvial aquifers are an important source of water for local agriculture. *See* Tr. at 532 (Testimony of Dr. Kuchanur affirming the importance of the alluvial aquifers in the permit area and adjacent lands).

28. The permit application does not support a finding that “the proposed operation would . . . [n]ot interrupt, discontinue, or preclude farming on alluvial valley floors that are irrigated or naturally subirrigated . . .” or a finding that the proposed operation will “[n]ot materially damage the quantity or quality of water in surface or underground water systems that supply these alluvial valley floors” as required by Section 406(n)(v)(A)-(B). *See also* Coal Rules, Ch. 12 § 1(a)(i).

29. This finding cannot be made because DEQ has not finished mapping alluvial valley floors in adjacent lands. *See* Tr. at 262 (Testimony of Mr. Kristiansen admitting DEQ did not assess or designate alluvial valley floors in all adjacent lands); Ex. POW 36-37 (describing incomplete surveying and DEQ commitments to do more surveying *after* the permit was deemed suitable for publication and went to public notice).

30. Nor did the permit application contain the important data and analysis required by DEQ rules. Coal Rules Ch. 3 § 2 (prescribing requirements for data and analysis related to AVFs in the permit area and in adjacent lands).

31. The permit application is deficient because it does not include delineation of, or assessment of impacts to, an alluvial valley floor designated by DEQ after the permit application was deemed “technically complete.” Tr. at 112 (Testimony of Mr. Kristiansen: “So at the time the technical completeness was completed for AVFs, I had not yet accomplished the AVF material and there was nothing for them to put in the application. Once it was declared complete,

then we don't revisit that again."'). However, in spite of the lack of designation at the time of permit review, DEQ later determined that the AVF would not be affected and therefore did not have to be designated in the permit application. *Id.* at 113.

32. The same goes for a much larger "potential" AVF along the Tongue River. Ex. DEQ 16; Tr. at 115, 263 (testimony from Mr. Kristiansen that because DEQ determined that the potential AVF won't be affected by mining, it doesn't need to be designated at this time).

33. But herein lies the catch 22 of the permit application: DEQ could not factually determine that the AVF would not be affected *unless* it was properly delineated and assessed *prior* to review of the permit application. *See, e.g.* Tr. at 1375-76 (Testimony of Mr. Wireman: "if you don't know where they are, how can you design a mine plan to protect them?").

34. Even assuming DEQ could determine whether AVFs will be affected *without* delineating them prior to making that assessment, DEQ's determination of whether AVFs will be "affected" by mining is much too simplistic and is based wholly on whether mining will directly occur in the AVF. Ex. DEQ 16; Ex. DEQ 12 at 90; *See also* Tr. at 156-57 (Testimony of Mr. Kristiansen arguing that because there is a 100 foot buffer between surface or underground mining and the creek that the AVF will not be affected); *Id.* at 386.⁴ Mr. Wireman's expert opinion is that you can damage the AVF without direct disturbance, damage that is not considered by Brook or DEQ. *Id.* at 1377-78.

35. DEQ underestimates a possible hydrologic connection between the coal seams and the AVFs because the agency assumed that the Tongue River is the sole source of recharge to the AVFs. Tr. at 339 (Testimony of Mr. Kristiansen). This is not the case. *Id.* at 1380 (Testimony of

⁴ Later Mr. Kristiansen said he made this determination also based on the fact that there would be no "discharge of any kind," tr. at 266, however, as was discussed at the hearing, the company will be applying for a WYPDES permit that will allow discharge of some pollution into waterways. Tr. at 398 (Testimony of Mr. Kunze).

Mr. Wireman that groundwater supports the Slater Creek AVF); *id.* at 1387-92, 1396 (testimony that the AVF along the Tongue River is recharged by the river and by groundwater and that there is a hydrologic connection between the AVFs and the coal seams); Ex. POW 17 at 6 (groundwater from the coal seams “is a source of recharge to Slater Creek alluvium.”); *id.* at 9 (discussing potential impacts to the Tongue River AVFs).

36. Additionally, DEQ even admits that at some point in the future mining could affect the “potential” AVF. Tr. at 266 (Testimony of Mr. Kristiansen saying mapping of the potential AVFs would be done in the future as the mine progresses toward them). DEQ and Brook testimony also admitted that there is a hydrologic connection between the coal seams Brook plans to mine and the AVFs. *Id.* at 295-96, 303 (Testimony of Mr. Kristiansen); *Id.* at 564-65 (Testimony of Dr. Kuchanur); *see also* Ex. DEQ 12 at 231 (identifying a connection between the Carney coal seam and the Tongue River alluvium); Tr. at 788-89 (Testimony of Mr. Barron).

37. This hydrologic connection is of particular importance in the TR-1 area, as the company plans to pump or dewater the area for a source of water for the mine, throughout the life of the mine. The permit application does not consider any impacts associated with this dewatering to the alluvial system along the Tongue River. Tr. at 300.

38. Therefore, as DEQ itself admitted, given the lack of designation of AVFs, and the lack of impacts analysis to these AVFs, DEQ is unable to make the Section 406(n) finding that mining will not materially damage the quantity or the quality of the water in the AVFs (both designated and “potential”). Tr. at 303 (Testimony of Mr. Kristiansen).

39. Since DEQ (or alternatively, the EQC) is unable to make the Section 406(n) findings that AVFs will be protected as required by the law, the permit must be denied.

C. A Finding that the Mine Has Been Designed to Prevent Material Damage to the Hydrologic Balance Cannot Be Made

40. 357 groundwater wells are present within three miles of the permit area. Tr. at 1344 (Testimony of Mr. Wireman).

41. Groundwater flow will be intercepted during mining, up to 99 gallons per minute at the anticipated peak rate. Tr. at 487 (Testimony of Dr. Kuchanur).

42. It is estimated that groundwater levels will not recover to within 10 feet of pre-mining levels for at least 10 years for the Carney Seam and 20 years for the Masters Seam, creating long-term impacts to regional water supply. *Id.* at 486.

43. However, as Mr. Wireman concludes, “[g]roundwater flow in the coal seams is poorly characterized. This constrains the ability to estimate dewatering rates and volumes and to assess probable cumulative hydrologic impacts.” Ex. POW 17 at 6.

44. Even given the limited data collection and modeling assumptions, the permit application acknowledges drawdown impacts to wells outside the permit boundary. Ex. DEQ 12 at 251. However, as explained during testimony, neither Brook nor DEQ did any analysis for the permit application to assess whether drawdown will create material impacts to quantity or quality of those water wells, *or* if those impacts occur, whether replacement water is available. Tr. at 549 (Testimony of Dr. Kuchanur); *Id.* at 1016-17, 1037-39 (Testimony of Mr. Buyok); *Id.* at 1094 (Testimony of Mr. Bocek); *Id.* at 1060-62 (Testimony of Ms Brezik-Fisher).

45. As Mr. Wireman’s expert testimony demonstrated, “That is simply not discussed or addressed in terms of what happens to the water in these wells if you dewater the coal, because they just haven’t dealt with it.” *Id.* at 1344; *see also id.* at 1382-85 (concluding that “there was no way to really assess the potential impact of these domestic wells due to declines in water

levels . . . there just was not enough information and data there” and “we don’t know enough here in this hydrologic system to make any judgments about risk or about impacts.”).

46. Furthermore, as demonstrated below, the permit application does not contain a baseline water quality or quantity assessment for surface and groundwater required by the WEQA and associated regulations. As Ms. Boomgaarden set forth in Big Horn Coal’s opening statement, “Without knowing and understanding the site-specific hydrologic conditions, it simply is impossible for Brook to adequately consider the impacts of its proposed highwall mining operations as the law requires.” Tr. at 19; *see also id.* at 1351 (Testimony of Mr. Wireman that if the baseline data does not exist, you “can’t assess risk” and “can’t assess changes to the hydrologic system”); *id.* at 1352 (“If you want an honest, thorough, rigorous assessment of what’s going on, and if the decisions that need to be made are based on that, then you need an adequate amount of data.”); *id.* at 1439, 1443.

47. These factual findings support a conclusion that the permit application does not contain “a plan to minimize the disturbances to the prevailing hydrologic balance at the minesite and in associated offsite areas and to the quality and quantity of water in surface and ground water systems both during and after mining operations and during reclamation” as required by the WEQA and corresponding DEQ regulations. W.S. §§ 35-11-406(b)(xvii), 406(n)(iii); Tr. at 945 (Testimony of Mr. Gerlach); *id.* at 1372-73 (Testimony of Mr. Wireman: “I don’t think there’s enough data and enough assessment to make any decision along those lines” regarding material damage to the hydrologic system; recommending the permit should be denied); Ex. POW 17 at 3.

48. Nor does the permit application contain the required “plan to ensure the protection of the quantity and quality of, and rights to, surface water and groundwater both within and

adjacent to the permit area” or “[a]n evaluation of the impact of the proposed mining activities that may result in contamination, diminution, or interruption of the quality and quantity of groundwater or surface water within the proposed mine permit area or adjacent areas that are used for domestic, agricultural, industrial, or other legitimate purposes.”. Coal Rules Ch. 2.

49. Nor does the permit application contain a probable hydrologic consequences determination “sufficient to make the determination of W.S. § 35-11-406(n)(iii).” *Id.* § 4(a)(xiv); Ch. 19 § 2(a)(i).

50. Additionally, the Cumulative Hydrologic Impacts Assessment (“CHIA”) has not been completed. DEQ admits that the CHIA is necessary to support the “material damage” finding under Section 406(n)(iii). Tr. at 413, 436, 444 (Testimony of Mr. Kunze that the DEQ cannot make the 406(n) findings without the CHIA).

51. While the CHIA is a document separate from the permit application, Tr. at 413, a “common practice” of DEQ is to finalize the CHIA by the time of public comment to afford an opportunity to raise comments or objections on the CHIA – a process that did not happen here. *Id.* at 423-25; Ex. POW 53.⁵

II. The Permit Application Does Not Include Sufficient Information to Assess and Control Subsidence Risk

52. The company has an obligation to prevent subsidence. A coal mining permit application with underground components, such as this permit application, must include “[i]nformation and evaluations on the potential for and the extent of subsidence, and the effect it may have on structures, the continued use of the surface land and aquifers or recharge areas” and “[e]xcept for areas where planned subsidence is projected to be used, measures to be taken in the

⁵ Testimony at the hearing established that the CHIA was started in 2014 but comments were not requested by reviewing agencies until December 2016, preventing the CHIA from being finalized by the end of the public comment period. Tr. at 425-26 (Testimony of Mr. Kunze with summary from Dr. Bagley).

mine to prevent or minimize subsidence, including backfilling of voids and leaving areas in which no coal is removed.” Coal Rules Ch. 7 § 1(a)(v).

53. Additionally, “[u]nderground mining activities shall be planned and conducted so as to prevent subsidence from causing material damage to structures, the land surface, and groundwater resources.” Coal Rules Ch. 2 § 2(b)(iii); Ch. 7 § 2(b)(iii); *see also* Tr. at 57 (Mr. Kristiansen discussing the subsidence control requirements of Ch. 7 § 2).

54. DEQ regulations further provide that “[a]uger mining may be limited or prohibited to minimize . . . unwarranted subsidence” Coal Rules Ch. 5 § 6(b); *see also* Coal Rules Ch. 3 § 5 (requiring information in the permit application to demonstrate compliance with these standards). This regulation applies to the Brook permit because at various times in the mine plan, the company refers to highwall mining as auger mining or “a similar method to auger mining.” Ex. DEQ 12 at 59, 88, 192; *see also* Tr. at 119, 233 (testimony of Mr. Kristiansen that the auger mining regulations apply to the Brook Mine).

55. DEQ’s Guideline No. 6A, Format and General Content Guideline for Permit Applications, Amendments and Revisions for Coal Mining Operations, requires a subsidence control plan for underground mining operations. A subsidence control plan is also required by federal regulations, incorporated into the state SMCRA program. *See* 30 C.F.R. § 784.20, *et seq.*

56. As acknowledged by DEQ, “subsidence control is of key importance to the mine plan.” Tr. at 162 (Testimony of Mr. Kristiansen).

57. In spite of this “importance,” as explained below, DEQ let the permit applicant proceed with an admittedly deficient subsidence control plan that does not achieve its required objective: to assess, control, and prevent subsidence at the mine site.

A. Subsidence is Prevalent in the Area & Subsidence Risk is Amplified by an Overlap Between the Proposed Permit and Existing AML Projects

58. Abandoned mine land (“AML”) division reclamation work to address subsidence problems in the area is widespread and ongoing. *See* Ex. POW 38-47, 80-82, 86-88. The permit area and areas adjacent to the permit area has active subsidence. Tr. at 1225-26 (Testimony of Dr. Marino); *id.* at 1019-22 (Testimony of Mr. Buyok).

59. DEQ was fully aware of this history of subsidence at the time of its review of the permit application. Tr. at 165 (Testimony of Mr. Kristiansen: “The mines in the Sheridan area all subsided at one point in the past, sooner or later.”); *Id.* at 238; Ex. POW 54.

60. Brook’s proposed permit boundary overlaps with abandoned mines known to cause subsidence. DEQ Ex. 12-145; Tr. at 239-42 (Testimony of Mr. Kristiansen). Brook’s underground mining will occur in close proximity to, and in some cases overlap with these abandoned mines. *Id.*; *see also* Tr. at 244-45 (Testimony of Mr. Kristiansen).

61. In spite of the prevalence of subsidence in the area from abandoned mines, and in spite of the overlap between Brook’s permit and some of these abandoned mines, Brook did not assess potential impacts related to subsidence from its proposed mine. Tr. at 170 (Testimony of Mr. Kristiansen). The company merely partially mapped the historic mining and the potential overlap. *Id.* Brook did not include a discussion about the various AML projects and subsidence caused by historic mining in its subsidence control plan. *Id.* at 752-53 (Testimony of Mr. Barron).

62. Nor did DEQ conduct any independent analysis of potential impacts of ongoing subsidence in the area and its relationship to the proposed Brook Mine. Tr. at 244 (Testimony of Mr. Kristiansen).

63. Nor did Brook verify anticipated subsidence potential at their site with actual subsidence conditions in the permit area. Ex. POW 12 at 13-14, 18 (Dr. Marino concluding: “There is a massive amount of surface subsidence in the area at mine depths similar to that proposed . . . both sag and pit subsidence would be expected at the Brook Mine.”).

64. DEQ and Brook did not even consult with the AML Division staff during review of the permit application to discuss the implications of and concerns related to ongoing subsidence in the area. Tr. at 243 (Testimony of Mr. Kristiansen); Tr. at 757 (Testimony of Mr. Barron).

B. Testimony Demonstrated DEQ Did Not Have the Expertise to Review the Subsidence Control Plan for Technical Accuracy or Completeness

65. The review of the Brook permit was one of the first jobs Mr. Kristiansen had when he started working at DEQ. Tr. at 218-19 (Testimony of Mr. Kristiansen). The Brook permit was the first coal mine permit Mr. Kristiansen coordinated while at DEQ. *Id.* at 226.

66. Mr. Kristiansen does not have any prior experience in reviewing subsidence control plans or highwall mine permits. Tr. at 163 (Testimony of Mr. Kristiansen); *Id.* at 227; Ex. GIL 21-23. Mr. Kristiansen admitted that the District III office of the Land Quality Division did not have experience in reviewing underground mine permits, and Brook’s permit application was the first highwall mine proposal the District had reviewed. Tr. at 226-27.

67. Because of his lack of experience, Mr. Kristiansen “had to attend” training by the Office of Surface Mining Reclamation and Enforcement (“OSMRE”). Tr. at 164. However, in review of the permit application, Mr. Kristiansen did not utilize key chapters of the OSMRE training materials related to subsidence prevention and risk. *Compare* Ex. DEQ 17-20 to Ex. POW 84; *see also* Tr. at 167, 376-77. Notably, he did not consider or evaluate important formulas related to geotechnical engineering and subsidence risk. *Id.* at 251.

68. Nor did Mr. Kristiansen perform any independent verification of admittedly “limited” and “basic” analysis done by Brook’s consultant. Tr. at 166-68; 237.

69. Mr. Kristiansen testified that he did not conduct independent verification because Brook’s consultant had “levels of experience significantly higher than [he] has,” Tr. at 168, although he was not sure who actually prepared the subsidence control plan. *Id.* at 253. Mr. Kristiansen also admitted that Dr. Marino has more experience than him. *Id.* at 251.

70. In fact, Mr. Kristiansen testified that he “was not expert enough” to even know what “technical and scientific standards” a subsidence control plan must meet. *Id.* at 234.

71. Nor did he have any experience or background in using any of the formulas discussed in the OSMRE course materials. *Id.* at 251.

72. Thus, even after the OSMRE course, Mr. Kristiansen did not have expertise in reviewing a subsidence control plan. *Id.* at 252 (Testimony from Mr. Kristian: “I would not say I’m an expert, no.”)

73. Mr. Kristiansen was the only DEQ staff member who reviewed the subsidence control plan and he did not reach out for assistance from anyone else at DEQ for assistance with his review. *Id.* at 234. Nor did he consult any background information beyond the OSMRE course materials he reviewed. *Id.* at 252.

74. With this lack of experience and expertise on the part of DEQ, Brook’s subsidence control plan was essentially not reviewed and deemed “technically adequate” with no basis for that determination.

75. As such, DEQ’s determination of “technical adequacy” for the subsidence control plan was arbitrary and capricious and an abuse of discretion, as the agency had no factual basis for making its decision.

C. The Subsidence Control Is Deficient Because It Was Not “Stamped” by a Professional Engineer

76. Geotechnical information or analysis in a mine permit application must be provided by a licensed engineer in Wyoming. This is necessary for DEQ to be able to rely on the accuracy of the information. *See* Tr. at 379 (Testimony of Mr. Kristiansen that information provided by licensed engineers is “certifiably accurate.”); *id.* at 1238-39 (Testimony of Dr. Marino that other subsidence control plans he has seen have been stamped by professional engineers and if “you’re doing engineering work, there’s a stamp for it.”).

77. However, no professional engineer “stamped” the subsidence control plan, rendering it deficient. Tr. at 738 (Testimony of Mr. Barron).

D. The Subsidence Control Plan and Associated Geotechnical Data is Neither Accurate nor Complete

1) Dr. Marino Concluded That the Subsidence Control Plan Is Deficient

78. Geotechnical engineering expert Dr. Marino concluded that “the application is severely deficient in the analysis and data to be able to make any kind of analysis of what the likelihood of subsidence would be in the future.” Tr. at 1200 (Testimony of Dr. Marino); Ex. POW 12 at 17 (“A detailed and advanced subsidence engineering analysis is required given the reported geologic and mining conditions. However, the mine subsidence potential investigation provided in the mine application is wholly inadequate . . .”); Ex. POW 11 at 42 (The subsidence control plan has a “lack of geomechanical understanding” and “insufficient information”).

79. Dr. Marino also concluded that the data and analysis included in the subsidence control plan “is far below industry standards.” Tr. at 1228; POW 11 at 42. He also concluded that the permit application did not meet scientific standards. *Id.* at 1246 (“There’s no science, in essence”).

80. The application contained only “inferences of attempts at calculating” pillar strength, and Dr. Marino concluded “there’s no equations given, there’s no strengths given.” Tr. at 1208. Additionally, the equation that was used in the permit application is an equation for bituminous coal, not the subbituminous coal found in the permit area. *Id.* at 1208-09, 1247. There was also no assessment of pillar width and height. *Id.* at 1209.

81. The permit application did not include an assessment of the potential of roof or floor collapse. Tr. at 1211 (Testimony of Dr. Marino: “There’s no mention of failure of . . . roof or floor conditions in terms of analysis or safety factors or anything like that.”).

82. The permit application’s limited data prevents an accurate or complete analysis of subsidence risk and engineering safety factors. Tr. at 1216 (Testimony of Dr. Marino: “here, we don’t have hardly any input data. If you don’t have the right input data, even if you have the right prediction method, your calculated value is suspect.”); *id.* at 1223, 1234; Ex. POW 12 at 18 (concluding that the permit application “essentially [had] no short and long term mine stability analyses of all potential failure modes that can lead to surface subsidence” and “no appropriate examination of risk, severity, and types of potential subsidence”).

83. The permit application does not completely or accurately assess the complex and diverse geological conditions in the permit area. *See, eg.* Tr. at 1221 (Testimony of Dr. Marino: “we’ve got a variety of different depths, different thicknesses of coal, different interburden thicknesses, different seam splits, none of this is really addressed in the permit in the application.”); *id.* at 1244 (the permit application is “not complete in a technical form because there’s not enough information to evaluate various mining scenarios in the various geologic conditions.”); Ex. POW 12 at 17; Ex. POW 11 at 33.

2) Brook & DEQ Admit That the Subsidence Control Plan is Deficient

84. DEQ admits that “data and studies” related to subsidence “have to be complete enough in this permit application to make and support” the finding that subsidence is not likely to occur. Tr. at 257 (Testimony of Mr. Kristiansen); *see also* Tr. at 742-43 (Testimony of Mr. Barron regarding this finding, its scope, and that its justification is a part of the permit application).

85. Yet, DEQ and Brook admit that additional geotechnical studies are needed before the company can justify the finding. *Id.*; *see also* Tr. at 323-25 (Mr. Kristiansen admitting that the testing Brook has done to date is not sufficient to assess whether subsidence will occur); *Id.* at 380; Tr. at 662, 743, 762 (Testimony of Mr. Barron: “To comply with the commitments within the permit there are additional studies that need to be done.”).

86. DEQ admits that the subsidence control plan contained “narrative” not technical information. Tr. at 247, 254 (Testimony of Mr. Kristiansen).

87. Brook admits that the finding that subsidence will not occur is not actually supported by data in the permit application and is merely a commitment to achieve a performance standard with no basis to show it will actually be achieved. Tr. at 745 (Testimony of Mr. Barron that the limited data in the permit application provided a “general sense” but did not provide a “specific conclusion” and that the statement in the subsidence control plan that “Highwall mining should not result in surface subsidence” was merely “a commitment to the performance standard.”).

88. For instance, the permit application is deficient because there was only one coal strength test done for the entire permit area. Tr. at 328 (Testimony of Mr. Kristiansen); *id.* at 1290 (Testimony of Dr. Marino: “it means nothing to me, one test”).

E. Expert Dr. Marino Demonstrated Subsidence Risk if Mining Proceeds

89. Dr. Marino's expert report concludes that "There is a serious risk of surface subsidence from roof collapse in the proposed mining [area]." Ex. POW 12 at 15; *see also* Tr. at 1225-28.

90. Dr. Marino's analysis shows that mine collapse is likely to occur because of the dominant presence of clay materials in the roof and floor on the mine. Tr. at 1210 (Testimony of Dr. Marino: "from reading the permit, the vast majority of the material's claystone . . . claystone is made of clay. And when that gets exposed to water, it deteriorates. It softens and swells and it causes failure."); *see also* Ex. POW 12 at 6, 9, 15-16 ("from our experience with the claystone roof and floor, the proposed mining can result in sag subsidence"); *id.* at 18. Brook's safety factor calculations did not account for the presence of clay. Tr. at 1226 ("no significant clay seam [is] assumed in the analysis.").

91. The presence of thin interburden and faulting also presents subsidence risk. *Id.* at 1219-21.

92. Dr. Marino found that even when using Brook's assumptions, "the stability factor calculates to an unacceptable value of less than one at [Brook's] pillar pressure where the panels are sufficiently wide." Ex. POW 12 at 11.

F. Coal Recovery Ratios Do Not Cure the Deficiencies in the Permit Application

93. DEQ confirmed Brook's finding that the mine would not create subsidence because of heavy reliance on an understanding that 50% of the coal would be left in the seam post-mining. Tr. at 120, 126, 169, 311, 330, 358 (Testimony of Mr. Kristiansen).

94. However, Brook's own permit application shows that recovery ratios will be from 45-60% and therefore will exceed 50%. Ex. DEQ 12 at 35; Tr. at 677, 760 (Testimony of Mr. Barron).

95. Dr. Marino's expert analysis shows Brook's extraction ratio could be as high as 60-70 percent. Tr. at 1204, 1236 (Testimony of Dr. Marino); Ex. POW 12 at 7.

96. Regardless, even Mr. Kristiansen admitted that the recovery ratio is just one factor to consider, and that you must also consider the strength and width of the coal pillars, the roof materials, and the floor materials to properly assess whether subsidence will occur. Tr. at 313-14.

97. Dr. Marino's expert analysis also shows that the 50% ratio should not be given as much weight as DEQ gives it. Tr. at 1236 (Testimony of Dr. Marino: "That standard . . . really doesn't apply if you have safety factors that are lower than what are acceptable. It should be based on safety factors, not on a percent."); *id.* at 1291 (noting that Brook's recovery rates "are general numbers that encompass[] the whole complex."); Ex. POW 12 at 7, 10 (noting that Brook's information is "typical" and generalized, not specific enough to provide DEQ a basis to conclude subsidence will be prevented).

98. Moreover, even assuming that the 50% extraction rate is technically significant *and* assuming that Ramaco will meet that rate, DEQ will not be able to independently verify or enforce the rate as a permit term or condition. Tr. at 229-30 (Testimony of Mr. Kristiansen: "I can't verify that"; admitting there is "no way" for DEQ to ensure compliance).

G. The Future MSHA Ground Control Plan is Not a Substitute for a Technically Complete and Adequate Subsidence Control Plan

99. Brook testified that the yet-to-come MSHA ground control plan can be viewed as a remedy for its deficient subsidence control plan. *See* Tr. 15-16 (Brook opening statement); *Id.* at 663 (Testimony of Mr. Barron: "the calculations necessary to provide the information for MSHA

are exactly the same data that DEQ is looking for each one of these panels.”); *Id.* at 746, 1533-34.⁶

100. Mr. Barron testified that the additional studies suggested by Dr. Marino in his expert report “are appropriate.” Tr. at 674-75 (admitting Dr. Marino’s expertise). However, he testified that these studies would be done for the MSHA ground control plan, not as part of the subsidence control plan. *Id.* at 675 (“it is a commitment as part of the permit application in the ground control plan that those [studies] will be done.”).

101. As Dr. Marino testified, the ground control plan is not a substitute for the additional geotechnical studies that must be done for the permit’s subsidence control plan *before* permit issuance. Tr. at 1202-03 (Testimony of Dr. Marino that MSHA won’t be concerned about stability in areas of the mine where miners will not be present, that MSHA is not the agency that “determines whether or not the mine plan is approved for surface subsidence,” and that the agency “has a different scope”); *id.* at 1241-42, 1245 (Dr. Marino testifying that future testing and analysis through the MSHA permit will not cure deficiencies in the subsidence control plan); Ex. POW 12 at 9 (“[A]pproval from MSHA (whose responsibility is safety) is irrelevant as the concern here is land subsidence.”).

102. Additionally, MSHA is focused on “looking at short-term conditions, when the miners are in, not when it’s abandoned.” Tr. at 1273 (Testimony of Dr. Marino that MSHA does not consider the risk of long-term subsidence at a mine site); *id.* at 1286 (testimony that the 1.3 safety factor is a “short-term safety factor” not long-term); *compare to id.* at 1535 (Testimony of Mr. Barron: “For the short term, we will stick with the 1.3 factor of safety.”).

⁶ DEQ has never supported Brook’s assertions regarding the ground control plan. In fact, DEQ has little understanding of what a ground control plan even is or what it requires. *See* Tr. at 330, 344 (Testimony of Mr. Kristiansen saying “I do not know” in response to a question about what engineering studies MSHA requires).

103. Dr. Marino’s conclusion was based on significant professional experience in preparing and reviewing subsidence control plans over his multi-decade career. Tr. at 1196 (Testimony of Dr. Marino regarding his background and experience); *id.* at 1237 (“there’s nothing in [other subsidence control plans I have reviewed] about MSHA, because MSHA is not directly related to subsidence on the ground surface.”)

104. Dr. Marino’s conclusions that the ground control plan is not meant to control subsidence and is not a substitute for the subsidence control plan required as part of the permit application are verified by Mark Eslinger, a former Supervisory Mining Engineer for MSHA, who in the scope of his multi-decade career reviewed ground control plans. Exhibit A (letter from Mark Eslinger to Shannon Anderson, July 11, 2017 with attached C.V. of Mark Eslinger).⁷

105. Even Brook admits that the ground control plan is only meant to address the safety of miners. Tr. at 663, 747 (Testimony of Mr. Barron: MSHA is “an organization whose sole role is the protection of the safety of miners.”). As a result, Brook admits that MSHA will not focus on subsidence damage to land resources or any other potential impacts of subsidence except safety of workers. *Id.* at 748.

III. The Permit Application Does Not Have Sufficient Baseline Water Data

106. Coal seam aquifers are locally and regionally important sources of water. *See* Tr. at 192 (Testimony of Mr. Kristiansen: “By and large, the coal beds are the primary aquifers in the basin . . .”)

107. In the permit area, and in surrounding areas, other aquifers, including overburden aquifers, also supply water for homes and agriculture or are capable of supplying water for these purposes.

⁷ These exhibits are included as part of these findings to rebut testimony provided by Mr. Barron.

108. However, in spite of the presence of these aquifers, there was very little and in some cases *no* baseline data collected to analyze the characteristics of, and projected impacts to, these aquifers. *See, eg.* Tr. at 915 (Testimony of Mr. Gerlach); Ex. BHC 9.

109. Mr. Wireman’s expert analysis shows that Brook did not collect baseline water samples in a scientifically defensible way, rendering the permit application deficient. *See, e.g.* Tr. at 1345-48; Ex. POW 17 at 3 (The permit application “present[s] a very incomplete characterization of the hydrogeology and surface water hydrology.”).

110. For instance, Brook did not conduct baseline water monitoring in the critically important TR-1 area – the first area Brook proposes to mine. *See* Tr. at 210-14, 383 (Testimony of Mr. Kristiansen); *Id.* at 513, 518, 519 (Testimony of Dr. Kuchanur). During technical review, DEQ identified the lack of data as a deficiency; however, Brook never provided additional information to remedy this deficiency. *Id.* This means that the lack of baseline water quality data for the TR-1 area remains a deficiency in the permit application. *Id.* at 217 (Testimony of Mr. Kristiansen admitting the deficiency and that this lack of data prevents the permit application from being “accurate” and “complete”). Additionally, generalities regarding aquifer characteristics from other portions of the mine are not applicable to this area, preventing other data from curing any deficiencies. *Id.* at 513.

111. Aside from the TR-1 area, no monitoring wells were completed in the overburden or interburden aquifers, at any locations throughout the permit area. Tr. at 511-12 (Testimony of Dr. Kuchanur); Ex. DEQ 6 at 24.

112. Testimony confirmed that “[m]onitoring in the alluvium is important.” Tr. at 533 (Testimony of Dr. Kuchanur). However, no baseline monitoring wells were completed in the alluvial aquifers – aquifers that are important to local agriculture and must be protected during

mining. *Id.* at 532, 539; *id.* at 1363-65, 1373 (Testimony of Mr. Wireman); Ex. POW 17 at 5 (Mr. Wireman's conclusion that "[t]his is a serious omission."); *see also id.* at 9.

113. Brook has committed to a limited set of three operational monitoring wells in the alluvium (Tr. at 533), but even if that operational monitoring was sufficient, it does not cure the lack of baseline monitoring.⁸

114. DEQ's groundwater expert was not involved in decisions allowing Brook to limit its baseline water monitoring program. Tr. at 523 (Testimony of Dr. Kuchanur).

115. Only fifteen wells were used for assessment of groundwater levels, in the entire permit area. Tr. at 523, 567 (Testimony of Dr. Kuchanur). And these wells only collected baseline water data from the coal seams. *Id.* at 524. This means that no water data was collected for non-coal bearing aquifers. *Id.* at 1382-83 (Testimony of Mr. Wireman, noting that Brook's application finds that most water wells in the area are not in the coal aquifers and no data is available for those aquifers).

116. Only *one* test was conducted to determine hydraulic conductivity, porosity, and storage coefficient values. Tr. at 524-25, 535, 1501 (Testimony of Dr. Kuchanur). This means that only *one* test was taken in the northeast portion of the permit for these very important water parameters and to characterize them for the entire permit area, rendering the analysis deficient. Tr. at 1354 (Testimony of Mr. Wireman); *id.* at 1355 ("a single value for the whole area . . . [can] in no way [] capture the complexity in the heterogeneity"); Ex. POW 17 at 5, 8; *see also id.* at 525 (Testimony of Dr. Kuchanur: "We need these parameters to characterize the aquifer"; acknowledging that if the test is not "an effective parameter that provides the best match to . . . what you see in the ground in terms of water levels" then the data is not sufficient.)

⁸ Additional operational monitoring for water quality and quantity will not remedy deficiencies related to baseline water data collection. Operational monitoring (during or post-mining) will itself be deficient without a scientifically defensible baseline to compare monitoring results to.

117. Mr. Wireman concluded that Brook did not “get data from monitoring stations throughout this permit area” as required to properly assess baseline water conditions and to understand the complexity and diversity of water quality and quantity in the area. Tr. at 1345 (Testimony of Mr. Wireman); *see also id.* at 1349-51.

118. For surface water monitoring, upstream and downstream monitoring stations on Slater Creek and Hidden Water Creek were used for baseline water monitoring. Tr. at 395 (Testimony of Mr. Kunze). However, data during the winter months was not collected. *Id.* This resulted in no water quality data being collected for Hidden Water Creek. *Id.* at 396. Historic data indicates that “in Hidden Water Creek, there was typically water in that creek in the winter, not in the summer” and that means water was not collected at the time the stream typically has water. *Id.* at 1361, 1402 (Testimony of Mr. Wireman); Ex. POW 17 at 7.

119. The lack of data collection from October to March prevented consideration of “seasonal differences” that can be significant and “very important.” Tr. at 1345, 1361-62 (Testimony of Mr. Wireman).

120. Groundwater data did also not account for seasonal changes, rendering it deficient. *Id.* at 1355 (“a potentiometric surface drawn for January water levels could be quite different than the one drawn with May water levels”).

121. Aside from seasonal deficiencies, Brook’s data of Slater Creek was deficient in other ways too. Tr. at 1366 (“There’s not enough characterization of Slater Creek.”); *id.* at 1363 (Slater Creek monitoring was not used to determine hydraulic conductivity values).

122. Brook’s lack of baseline water monitoring data was supplemented with other data sources. Tr. at 396 (Testimony of Mr. Kunze). However, this data was very old and still deficient. *Id.* at 1362-63 (Testimony of Mr. Wireman).

123. Determining the baseline water quality of Hidden Water Creek is especially important as Brook plans to divert the stream for at least three years. Tr. at 404 (Testimony of Mr. Kunze). Without baseline water quality data for Hidden Water Creek it will be impossible for DEQ to know if the creek's water quality or quantity will be impacted by mining operations.

124. No water monitoring was conducted on the Tongue River or Goose Creek in the permit area. Tr. at 408, 411-12 (Testimony of Mr. Kunze); *id.* at 1367 (Testimony of Mr. Wireman); Ex. POW 17 at 5.

125. As a result of this limited data collection, the hydrologic impacts model was limited and assumptions had to be made. Ex. DEQ 12 at 213 ("Limitations and assumptions specific to this modeling effort are primarily due to the complexity of the hydrogeologic system and a lack of data on physical and hydraulic characteristics of the aquifers and confining units being modeled."); *see also* Tr. at 528 (Testimony of Dr. Kuchanur agreeing that there are assumptions and limitations in the model). The data collected provided a "limited understanding of the coal location, continuity and hydrology." Ex. DEQ 12 at 529; Ex. POW 17 at 8.

126. Given these limitations and assumptions, the model was designed to provide a "general understanding of regional groundwater impacts." *Id.* The model was not, as Dr. Kuchanur testified, sufficient to serve as a "good predictive tool" of probable hydrologic consequences specific to proposed mining activities. *Id.*; Tr. at 530; *see also id.* at 1368-70 (Testimony of Mr. Wireman regarding the model's deficiencies).

127. The model was also deficient because it did not analyze or predict drawdowns to overburden aquifers. MP 6.2.3 ("Drawdowns of the overburden were not modeled . . ."); Tr. at 955 (Testimony of Mr. Gerlach: "there's no modeling of drawdown in the overburden."); Ex. POW 17 at 8 (Mr. Wireman concluding that "The modeling effort was limited to estimating

drawdowns in the coal seams . . . [m]odeling the coal seams as hydrologically isolated is not based on real data and is far too simplistic.”).

IV. The Permit Does Not Comply With Water Well Replacement Requirements

128. The WEQA requires coal mine operators to “replace” a surface or underground water supply “where the supply has been affected by contamination, diminution or interruption resulting from the surface coal mine operation.” W.S. § 35-11-415(b)(xii). A plan to meet these requirements must be a part of the permit application. Coal Rules Ch. 2 § 5(a)(ix)(E).

129. This requirement is especially important here, where 357 water wells are within the “zone of potential influence” of the mining operation. *See* Tr. at 288 (testimony of Mr. Kristiansen).

130. The permit application includes a commitment to replace only adjudicated water wells that will be impacted by mining activities. Ex. DEQ 12 at 52, 62.

131. The permit application’s water replacement limitations contravene the intent of Section 415’s requirements. Tr. at 521 (Testimony of Dr. Kuchanur); *see also* Ex. POW 17 at 4 (Mr. Wireman concluding that “Brook mine only agrees to replace impacted wells if they are adjudicated. This is not appropriate or sufficient since most domestic /stock wells are not adjudicated.”).

132. DEQ confirmed that removing “adjudicated” from the application is required through testimony at the hearing, and made the recommendation to the EQC to make the permit change. Tr. at 500, 520-22 (Testimony of Dr. Kuchanur).

V. The Permit Application Does Not Contain Any Limits or Restrictions on Blasting to Protect Property and Public Health

133. Blasting causes vibrations and is also a source of noise and air pollution. Tr. at 594-95 (Testimony of Mr. Emme).

134. “Orange clouds” produced from blasts often result from wet conditions. *Id.* at 597. Orange clouds have a high level of nitrogen oxides and the pollution that results is “highly toxic” and can be dangerous to breathe. *Id.* at 608. If an orange cloud “drifts” off site, it can settle back to the surface. *Id.*

135. Blasting is of particular concern to neighboring landowners. *Id.* at 1070-71 (Testimony of Ms. Collins); *Id.* at 1092-93 (Testimony of Mr. Bocek).

136. Blasting is also of concern to members of the public who recreate in the area given pollution, noise, and other impacts. Tr. at 1118 (Testimony of Ms. Malone).

137. A coal mine permit application must contain a blasting plan. Coal Rules Ch. 2 § 5(a)(vii). This plan must include “[p]roposed compliance with limitations on ground vibration and airblast, the basis for those limitations, and methods to be applied in controlling the adverse effects of blasting operations,” a “worst-case scenario” blasting estimate, identification of dwellings and structures in close proximity to proposed blasting locations, and a description and location of blasting monitors. *Id.*

138. The blasting plan must include sufficient terms and conditions for DEQ to determine compliance with the Chapter 6 blasting standards. To ensure compliance, the administrator (or his substitute) may request any additional information “determine[d] necessary” as part of the blasting plan. *Id.*; Tr. at 600 (Testimony of Mr. Emme). DEQ did not do that for this permit. *Id.*

139. Brook’s blasting plan is deficient because it does not describe how frequently blasting will occur and in what amounts or where blasting will occur. Tr. at 597-99 (Testimony of Mr. Emme).⁹ Nor does it include the proposed locations of monitors.

⁹ Brook originally proposed more detail but Mr. Emme asked them to remove it because if they would have blasted as proposed by the company “we’d have a lot of fly rock.” Tr. at 623.

140. It also does not describe what type of blasting will occur, for instance cast blasting, even though DEQ assumed that cast blasting would not be done in its review of the permit application. Tr. at 596 (Testimony of Mr. Emme).

141. Hundreds of residents live within a half-mile distance of the permit area, yet DEQ did not consider any restrictions or conditions on blasting to address impacts. Tr. at 593, 595 (Testimony of Mr. Emme).

142. DEQ (and in turn the EQC) has authority to limit blasting, in any number of ways, to protect public health and property. Tr. at 593-94 (Testimony of Mr. Emme that DEQ can put in place conditions if they are “advantageous.”).

VI. The Permit Application Does Not Disclose or Assess Impacts from Mine Traffic

143. The mine proposes to use large semi-trailer trucks with tandem trailers to transport coal. *See* Tr. at 148 (testimony of Mr. Kristiansen).

144. The mine plan is deficient because it does not estimate truck traffic, disclose any impacts to public or private roads used by the public, and does not include a traffic plan, even though according to the mine plan those “plans” have been “previously formulated.” Ex. DEQ 12 at 21.

VII. The Permit Application Illegally Allows Mining Through and Under a County Road

145. The permit application does not incorporate any agreements for road use with any governmental agencies or entities because no such agreements exist at this time. Tr. at 151 (Testimony of Mr. Kristiansen); Tr. at 702, 764 (Testimony of Mr. Barron that the permit applicant or consultants have not had any conversations with the county about road use).

146. Nor are there any proposals to relocate any public roads included in the permit application. *Id.* at 767 (Chairman Bagley: “Yeah, I would say that we have established that the plans to relocate that county road are not in the permit application.”).

147. Additionally, DEQ has not held a public comment opportunity or public hearing on any proposals to relocate any public roads within the permit area.

148. As such, the permit application is deficient because it does not include a 100 foot buffer around all public roads. Coal Rules Ch. 12 § 1(a)(v)(D); *see also* Ex. POW 31.

149. DEQ ignored this requirement in its permit review, partly because DEQ determined that only public roads outside the permit boundary would be impacted. Tr. at 277 (Testimony of Mr. Kristiansen that the “very minor” “narrative description” of impacts to public roads was sufficient because the roads are “outside the permit boundary.”).

150. However, the mine will directly impact Slater Creek Road inside the permit boundary, preventing landowners who use the road from accessing their property. *See* Ex. DEQ 12 at 131; Tr. at 279, 282 (Testimony of Mr. Kristiansen); *Id.* at 764-67 (Testimony of Mr. Barron that mining will come within 100 feet of Slater Creek Road and Slater Creek Road will have to be relocated); Ex. POW 33-34. The mine will also directly impact Hidden Water Road. *Id.*

VIII. The Permit Application Does Not Disclose or Include Any Facilities Necessary to Process, Transport, or Sell the Coal

151. For the purposes of delineating a permit boundary, the WEQA defines “Surface coal mining operation” to mean surface lands where surface coal mining activities take place and/or surface lands “incident” to underground coal mining activities. The operation shall also “include any adjacent land the use of which is incidental to any of these activities, all lands affected by the construction of new roads or the improvement or use of existing roads to gain access to the site

of these activities and for haulage . . . processing areas, shipping areas and other areas upon which are sited structures, facilities or other property or materials on the surface, resulting from or incident to these activities.” W.S. § 35-11-103(e)(xx); *see also* Tr. at 269 (Testimony of Mr. Kristiansen admitting that DEQ is supposed to require all facilities and roads that are incidental to mining to be included in the permit).

152. The permit application fails to include associated facilities necessary to get coal to a point of sale, including necessary roads and facilities. Ex. DEQ 12 at 21-22. These facilities were previously contemplated but were not included in the permit application. Ex. POW 48-50.

153. The permit application also is deficient because it does not include the proposed coal “processing areas” associated with Brook’s planned industrial park and manufacturing facilities, which are incidental to the mine. Ex. POW 26-27.

154. DEQ was fully aware of these facilities *before* the permit went to public notice and therefore they should have been considered by the agency in its review. Ex. POW 28.

IX. The Permit Application Does Not Include Other Facilities Planned at the Mine

155. Brook has planned a “long-term sump” at the TR-1 mine area. Tr. at 121-22; *Id.* at 193 (Testimony of Mr. Kristiansen: “The first pit, TR-1 pit is going to be kept as a sump . . . throughout mine life” for a variety of “different purposes.”).

156. Yet, this facility that will be in place the life of the mine is not identified or discussed *anywhere* in the permit application. Tr. at 198 (Testimony of Mr. Kristiansen).

157. There is also a corresponding lack of analysis of any associated impacts, including hydrologic impacts or impacts to land uses, which will result from this life of mine facility.

158. Brook anticipates it will need 328,200 gallons of water per day, and the TR-1 sump is a likely source for this water. Tr. at 433 (Testimony of Mr. Kunze).

X. The Permit Application Does Not Include an Accurate Projection of Coal Production

159. The mine plan must include “[a] complete operations plan proposed to be conducted during the life of the mine” with an accurate estimate of “the number of acres that will be affected annually” and the “anticipated annual and total production by tonnage.” *Id.* at § 5(a)(i).

160. Accurately estimating the amount of coal to be mined is a critical component of any mine plan as it establishes the time period of the permit and the level of anticipated impacts. Ex. POW 1 at 3, Ex. POW 17 at 3.

161. Originally, company representatives stated publicly that they anticipated mining 6-8 million tons per year when “Asian export markets” were the proposed market for the coal. Ex. POW 25 at 4, 13. However, now, the company plans to mine a small amount of coal for “feedstock” for their planned processing and manufacturing facilities. *See, e.g.* Ex. POW 72 at 9 (showing use of 30,000 tons of coal for a similar facility to that proposed by Brook).

162. The project keeps shifting, but meanwhile, the estimated annual production in the mine plan has not been updated since 2014. Tr. at 273-74 (Testimony of Mr. Kristiansen admitting that the projected production estimates in the permit application were not updated and DEQ did not ask any questions of the company related to production estimates).

163. The permit application is deficient because it does not contain an accurate estimate of annual and total coal production.

XI. Coal Production Will Exceed the Limit Established by the Air Quality Permit

164. The air quality permit is mentioned in the mine plan but says the permit “will be submitted.” Ex. DEQ 12 at 84. The permit application was not updated to disclose that there is a final air quality permit that was received *prior* the coal mining permit going to public notice nor does it explain any limits of on coal production that result from the air quality permit.

165. The air quality permit limits coal production at the Brook Mine to two million tons per year. Ex. POW 29 at 6.

166. For years four and five, estimated annual production exceeds two million tons, therefore proposing to violate the production limit established in the company's air quality permit. Ex. DEQ 12 at 98.

XII. The Permit Application Does Not Include a Proposed Bond that Meets the Requirements of Section 417

167. Requirements for mine reclamation bonds are governed by Section 417 of the WEQA and corresponding DEQ regulations. Coal Rules Ch. 12 § 2.

168. The reclamation bond must cover the *entire* cost of surface and water reclamation, including estimates of costs of third-party contractors necessary for the state to assume reclamation responsibilities in the case of a bond default. W.S. § 35-11-417(c)(i) (the bond should equal the “cost of reclaiming the affected land disturbed” . . . “plus the administrator’s estimate of the additional cost to the state of bringing in personnel and equipment should the operator fail or the site be abandoned.”); *see also* Tr. at 611 (Mr. Emme testifying that the bond is important “[s]o if an operator walks away, the state has revenue money in place to reclaim the mine site.”).

169. The bond amount must account for “the worst-case scenario.” Tr. at 636 (Testimony of Mr. Emme); Ex. POW 64 at 15 (“The bond amount will reflect the ‘worst case scenario’ i.e., the cost of reclaiming the site if the permittee forfeits the bond at the point of maximum reclamation cost liability, under the reclamation and operation plans approved as part of the permit.”).

170. Like the necessary findings of Section 406(n) discussed above, DEQ has stated that it has yet to calculate the bond amount. Tr. at 586-87 (Testimony of Mr. Emme). The bond

amount is not yet calculated because Brook has not provided “specifics” on their mining plans for the first year of their operations. *Id.* at 587, 609.

171. The lack of a bond in the permit at the time of public comment, like the CHIA, prevented adequate public review and comment on the proposed bond amount. *See* Tr. at 611 (Mr. Emme testifying that “The bond is set in the permit, and there is a public comment period before the permit is approved.”); *id.* at 612-13 (Testimony of Mr. Emme that the bond amount for an initial permit is generally set at a time that allows public comment, but for this permit there is no public comment opportunity for the bond amount).

172. Since DEQ has yet to set the bond amount, the only bond estimate that was available for public comment was Brook’s estimate.

173. Brook’s bond estimate was deficient because it did not include the costs of certain contingency factors and does not follow DEQ guidance to establish other contingency factor amounts. Ex. DEQ 31 at 16; Ex. POW 1 at 10-11.

174. Contingency costs are necessary *regardless* of the scope or extent of mining activities. Tr. at 614 (Testimony of Mr. Emme). These contingency costs “are very important if the state has to take over [the] bond.” Tr. at 613 (Testimony of Mr. Emme); *see also* Tr. at 773 (Testimony of Mr. Barron confirming Mr. Emme’s statement).

175. As such, these lines should not have zero estimates. *Id.* at 614 (Testimony of Mr. Emme: “There should be some number.”).

XIII. The Permit Application Does Not Contain a Surface Owner Protection Bond

176. In addition to the findings of Section 406(n), and the reclamation bond discussed above, a surface owner protection bond must be calculated prior to a decision on the permit application. *See* Tr. at 66-67 (Testimony of Mr. Kristiansen).

177. As far as the Resource Council is aware, the process to calculate that bond has not yet begun. Tr. at 201-02 (Testimony of Mr. Kristiansen).

178. Therefore, the EQC cannot find that the permit application should be approved.

PROPOSED PERMIT CONDITIONS OF APPROVAL & TERMS¹⁰

Proposed Blasting Permit Terms

Rationale: Blasting operations must prevent injury to persons and damage to public and private property outside the permit area. W.S. § 35-11-415(vi)(C). DEQ and the EQC have significant discretion to require permit terms to protect public health and safety and to prevent damage to homes and structures from blasting operations. *See Order, In the Matter of Objections by the Powder River Basin Resource Council to the Amendment of the RAG Eagle Butte Permit, Permit No. 428-T3, Docket No. 00-4802, June 26, 2003 at 10-12; Tr. at 608 (Mr. Emme testifying that “In the Powder River Basin, all the mines have either permit conditions or have voluntarily put restrictions on their operations.”); id. at 617-18, 639-40.*

Proposed Permit Terms:

Brook shall not conduct cast blasting. Blasting will only be authorized from 9 a.m. to 4 p.m., M-F. No blasting shall occur on public holidays. Brook shall not conduct blasting if wind is directed at any residence or business within 2,500 of the proposed blast. No blasting can take place on days with inversions or inclement weather (snow, rain). Brook will install, at its expense, a seismic monitor for any adjacent landowner that requests one as part of a pre-blast survey. The requesting landowner shall have access to all data collected. Brook will install, at its expense, a downhole camera for a water well to observe any impacts pre, during, and post blast for any landowner that requests one as part of a pre-blast survey.¹¹ The requesting landowner shall have access to all data collected. Brook will provide notice to any landowner within ½ mile of its permit area of proposed blasting times and locations.

Proposed Permit Term to Include the Buyoks’ Homes and Wells within the Area Designated For Pre-Blast Surveys

Rationale: A resident or owner of a man-made dwelling or structure within one-half mile of any portion of the permitted area can request a pre-blasting survey. W.S. § 35-11-415(vi)(E). According to Brook’s GIS mapping, Mr. Buyok’s home lies around 40 feet outside the ½ mile boundary and his water well lies about 20 feet outside the boundary. Tr. at 1017-18 (Testimony of Mr. Buyok). Brook has offered to include Mr. Buyok’s

¹⁰ Brook expressed a willingness to accept any permit condition proposed by the DEQ or the Council. Tr. at 713-14; 781 (Testimony of Mr. Barron: Brook would be “okay with any conditions that this council will find are necessary for the permit application.”).

¹¹ DEQ has required and used downhole cameras before. *See* Tr. at 607 (Testimony of Mr. Emme).

home and well within the zone for pre-blast surveys as an enforceable condition of the permit. *Id.* at 1055, 1524-25 (Testimony of Mr. Barron).

Proposed Permit Term: Brook will conduct a pre-blast survey for John Buyok and/or any member of his family if requested.

Proposed Permit Term to Implement the Proper County Road Buffer

Rationale: See section VII above.

Proposed Permit Term: No surface or underground mining shall occur within 100 feet of any public road. Should Brook obtain authorization to relocate a public road, the company shall incorporate that change as a permit amendment. Any request to relocate a road shall be subject to public comment and hearing pursuant to Ch. 12 § 1(a)(v)(D) of the Coal Rules and Regulations.

Proposed Permit Term for Replacement of Water Wells

Rationale: See section IV above.

Proposed Permit Term: Remove the word “adjudicated” from any description of water rights that will be replaced by Brook.

Proposed Condition of Approval to Defer Mining Until Baseline Water Quality Studies Are Complete & Findings Regarding Material Damage Are Made

Rationale: Baseline water quality sampling was deficient. While this means that the permit application should be denied, at the very least, mining should not be authorized until baseline samples are collected, analyzed, and reviewed by DEQ. DEQ itself agrees with this permit condition. Tr. at 363 (Testimony of Mr. Kristiansen); *Id.* at 411-12, 431 (Testimony of Mr. Kunze regarding monitoring on the Tongue and Goose Rivers).

Proposed Condition: Brook shall not commence coal mining operations until additional ground and surface water baseline water quality samples are collected, in a scientifically defensible manner, for the entire permit area.¹² Baseline samples must be taken for the overburden and alluvial aquifers, in addition to the coal seams. Samples must be collected seasonally for at least one year prior to mining. The inclusion of baseline water quality data shall be considered a major amendment to the permit and the new data will be subject to public notice and comment.

Brook shall also commit to continued monitoring at the baseline locations during operations and post-mining, until final bond release.

¹² If Brook wishes to amend its permit boundary to limit the scope of baseline monitoring or subsidence assessment, it can do so, but only as a major modification to its permit, subject to public notice and comment.

Proposed Condition of Approval to Defer Mining Until Alluvial Valley Floor Determinations Are Complete

Rationale: Mr. Kristiansen testified that DEQ is planning to include a permit condition that will “halt” mining should it be determined that an AVF would be “disturbed” by mining. Tr. at 116. However, given the vagueness of what that permit condition is, and the narrowness of equating “disturbance” to actual physical disturbance by mining (see discussion in Section III(B) above), a more carefully tailored permit condition is needed to comply with legal restrictions related to alluvial valley floor protection.

Proposed Condition: No coal operations can lawfully occur until DEQ finishes assessment and determination of all AVFs in lands adjacent to the permit.¹³ Specifically, no coal operations shall commence within ½ mile of the “potential” AVF identified in DEQ Exhibit 16 until a complete assessment of the delineation of the AVF is complete and until DEQ further reviews the mine permit application for potential impacts to the AVF from hydrologic connections between the mining area and the AVF.

Proposed Condition of Approval to Defer Mining Until Geotechnical Studies Are Complete to Demonstrate Subsidence Control and Prevention

Rationale: Dr. Marino’s testimony and exhibits discussed geotechnical studies and tests that must be complete in order to properly assess subsidence risk and to demonstrate subsidence control. *See, e.g.* Tr. at 1231-33.¹⁴

Proposed Condition: Brook shall not commence coal mining operations until it completes the geotechnical studies and tests identified by Dr. Marino in Ex. POW 94-D for the entire permit area. Brook will also at all times comply with the engineering design recommendations identified in Ex. POW 94-D. Brook must amend its permit application to include this information. Such an amendment will be considered a major modification to the permit and will be subject to public notice and comment (and public participation requirements of Sections 406(k) and (p)). A ground control plan submitted to MSHA shall not be sufficient to comply with this condition.

Proposed Permit Term that Requires Brook to Reclaim and Remediate All Subsidence Incidents in its Permit Area

Rationale: Given the overlap between historic abandoned mines and proposed mining by Brook, and given the ongoing subsidence problems caused by the abandoned mines in the area, testimony from Mr. Kristiansen showed that DEQ will have a difficult, if not “impossible” time, assigning liability to Brook if any subsidence occurs in the area, even if it is caused by the company. Tr. at 245, 320, 361-62 (Testimony of Mr. Kristiansen). If liability is not assigned, the AML Division will be responsible for all remediation. Brook

¹³ “Adjacent lands” is defined in the WEQA as “all lands within one-half mile of the proposed permit area.” W.S. § 35-11-103(e)(vii).

¹⁴ *See* note 15 *supra*.

has committed to remediate subsidence if it occurs, Tr. at 676, and the permit should be crafted to hold them to that commitment.¹⁵

Proposed Permit Terms: Brook shall conduct ongoing monitoring of subsidence activity within its permit boundary and DEQ shall include review of subsidence activity during regular inspections of the mine site. Brook will be responsible for all reclamation and remediation associated with any subsidence incidents that occur in areas that Brook is actively mining or has mined.

When subsidence-related damage to land, structures or facilities occurs, or when contamination, diminution, or interruption to a water supply occurs, DEQ will require Brook to obtain additional performance bond in the amount of the estimated cost of the repairs or in the amount of the estimated cost to replace the water supply, until the repair or replacement is completed.¹⁶ Before releasing the company's performance bond, DEQ must conduct a full assessment of subsidence risk and determine that subsidence is not likely to occur inside the area proposed for bond release. DEQ must consult with independent experts if the agency staff does not have the expertise to make that determination. Like the bond release proposal itself, DEQ's determination shall be subject to public notice and comment, and an affected party may object to DEQ's determination.

If subsidence causes damage to land or structures, DEQ must suspend mining under or adjacent to such land or structures until the subsidence control plan is modified to ensure prevention of further damage to such land or structures.

At all times Brook shall maintain at least a 500 foot horizontal and vertical buffer between previous mines and current mining operations.

Permit Term to Require a Public Comment Period on the Bond Amount Set by DEQ

Rationale: Testimony from Mr. Emme confirmed that DEQ normally has an initial bond amount available for public notice and comment as part of a permit application. However, in this case, the bond amount has yet to be set and DEQ did not have a draft bond amount available at the time of public notice and comment. This means that the bond amount will be unreviewable (by the public or in fact Brook itself), in violation of public participation opportunities.

¹⁵ This commitment is also required by federal SMCRA regulations, incorporated into the state program. 30 C.F.R. § 817.121 ("Repair of damage to surface lands. The permittee must correct any material damage resulting from subsidence caused to surface lands, to the extent technologically and economically feasible, by restoring the land to a condition capable of maintaining the value and reasonably foreseeable uses that it was capable of supporting before subsidence damage.")

¹⁶ The proposal for additional bond is consistent with federal requirements, incorporated into the state program. 30 C.F.R. § 817.121(c)(5).

Condition of Approval: Brook may not commence coal mining operations until such time as DEQ has made its proposed bond amount available for public inspection, notice, and a thirty (30) day comment period. Any interested member of the public may submit comments on or objections to the proposed bond amount within the 30 day comment period. Objections to the proposed bond amount shall be handled in accordance with Sections 406(k) and (p) of the Environmental Quality Act and corresponding DEQ public participation rules and regulations.¹⁷

Adoption of Permit Conditions and Terms Proposed by Big Horn Coal Company and the Fishers

Proposed Terms & Conditions: The Resource Council also adopts and hereby incorporates by reference any permit terms and conditions proposed by the other objecting parties, including but not limited to the terms and conditions proposed in Ex. BHC 5, to the extent that they do not conflict with the terms and conditions proposed above.

CONCLUSION & REQUESTED REMEDY

Given the deficiencies in the permit application described above, and the absence of specific regulatory findings necessary to issue a permit, the permit applicant has not met its burden to demonstrate that the application “is in compliance with this act and all applicable state laws” pursuant to Section 406(n).

As a result, the EQC must conclude that the permit application should be denied. The EQC should issue findings of fact and law and “a decision on the application” that orders the DEQ to deny the permit application within fifteen days of receipt of the EQC’s decision pursuant to Section 406(p).

Alternatively, the EQC could (1) make a finding that DEQ cannot issue the permit until all required findings under Section 406(n) are made, until the reclamation bond amount is calculated pursuant to Section 417 and the surface owner protection bond is calculated pursuant to Section 416, and until deficiencies in the permit application raised by the parties are addressed; (2) stay proceedings until DEQ makes its required findings; and (3) allow the parties’

¹⁷ In proposing this condition of approval, the Resource Council is not waiving its ability to exercise its rights and remedies to challenge DEQ’s bond calculation through W.S. § 35-11-1001.

time to respond and present additional evidence and testimony, as needed. Staying proceedings will afford DEQ time beyond the statutorily provided 15 days to finalize the CHIA and other needed documents and reviews and to respond to public comments and make any needed changes to the permit.

However, should the EQC decide to order the DEQ to approve the permit, it should be approved *only* with the permit terms and conditions listed above.

Respectfully submitted this 24th day of July, 2017.

/s/ Shannon Anderson
Shannon Anderson
Powder River Basin Resource Council
934 N. Main St., Sheridan, WY 82801
(307) 672-5809
sanderson@powderriverbasin.org

CERTIFICATE OF SERVICE

I hereby certify that on July 24, 2017, I served a copy of the foregoing **PROPOSED FINDINGS OF FACT AND CONCLUSIONS OF LAW** on the following parties by electronic mail, and through the EQC's electronic filing system, which will send a notice of electronic filing to all counsel and parties of record.

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/s/Shannon Anderson
Shannon Anderson

July 11, 2017

Exhibit A

MOESLING, LLC
PO Box 451
Vincennes, IN 47591-0451

Ms. Shannon Anderson
Powder River Basin Resource Council
934 N Main ST
Sheridan, WY 82801

Re: Ground Control Plan

Dear Shannon:

As you have requested, I am providing information concerning the Ground Control Plan and its relation to subsidence. The plan, required by Title 30, Code of Federal Regulations (CFR), necessitates that a coal mine operator establish and follow a Ground Control Plan (see §§ 77.1000 and 77.1000-1). The operator must file a copy of the plan with the Coal Mine Safety and Health district office. Unlike most other plans mandated by the regulations, the Ground Control Plan is not required to be submitted for approval. The Mine Safety and Health Administration (MSHA) does not approve the plan but acknowledges receipt of the plan when the plan contains all the required information.

The purpose of the Ground Control Plan is for the protections of miners. It provides for control of highwalls, pits, and spoil banks but not subsidence. Additionally, MSHA's jurisdiction over the mine ends when mining is completed and the mine is abandoned.

§77.1000 Highwalls, pits and spoil banks; plans.

Each operator shall establish and follow a ground control plan for the safe control of all highwalls, pits and spoil banks to be developed after June 30, 1971, which shall be consistent with prudent engineering design and will insure safe working conditions. The mining methods employed by the operator shall be selected to insure highwall and spoil bank stability.

§77.1000-1 Filing of plan.

The operator shall file a copy of such plan, and revisions thereof, with the MSHA Coal Mine Safety and Health district office for the district in which the mine is located, and shall identify the name and location of the mine; the Mine Safety and Health Administration identification number if known; and the name and address of the mine operator.

This letter should make clear that the Ground Control Plan does not deal with subsidence.

Sincerely,



Mark O. Eslinger, P.E.

MARK O. ESLINGER, P.E.

2251 N. Hillcrest Road

P.O. Box 451

Vincennes, IN 47591-0451

Phone: 812-881-7010

Email Address: Mark@moesling.com

Date of Birth: 02/16/1949

Birthplace: Iron Mountain, Michigan

Work Experience

06/25/2009 to present: MOESLING, LLC

Title: Owner

I own a consulting services company providing assistance to the coal mining industry. I have knowledge and expertise in the area of compliance with the requirements of the Title 30 Code of Federal Regulations enforced by the Mine Safety Health Administration (MSHA). Assisting mine operators with laws, regulations, rules, and orders regulating coal mining, processing, and transportation facilities is the main focus of the business. Additionally, I have helped mine operators prepare mine ventilation and other plans.

01/01/2016 to present: Vincennes University, Vincennes, Indiana.

Title: Mine Trainer

I teach and train mine management and miners of the coal mining industry in areas of compliance with the requirements of MSHA. One key area that Vincennes University has employed me to teach are courses in impoundment construction and inspection.

8/30/2014 to 12/31/2017 Vectren Utility Services, Inc. (Vectren), One Vectren Square, 211 N.W. Riverside Drive, Evansville, Indiana 47708

Title: Consultant

I consulted with, advised, and assisted Vectren in connection with citations and orders issued for violations, or other matters relating to the mines issued by MSHA up to the time of closing of the mines; including pending matters; citations and orders issued for violations, or other matters relating to the regulatory permits associated with the mines; including pending matters; claims asserted by employees of the contractors, including worker's compensation claims related to the mines, including pending matters and any other such matters as Vectren requested. I did extensive work with a team of lawyers from a large law firm on settlement of MSHA penalties assessed against the mines.

06/07/2010 to 08/29/2014: Black Panther Mining, LLC, and Five Star Mining, Inc.

Title: General Safety Manager

I managed the safety and health programs at Black Panther Mining, LLC's Oaktown Fuels Mine No. 1 and Oaktown Fuels Mine No. 2 and Five Star Mining Inc.'s Prosperity Mine. Black Panther Mining LLC and Five Star Mining Inc. were contract mining companies for Vectren Fuels, Inc. The mining properties were owned by Vectren Fuels, Inc., a division of Vectren Energy. Five Star Mining, Inc., and Black Panther Mining, LLC, dictated the operations at the mines. Prosperity mined about 2.0 million clean tons per year, Oaktown Fuels Mine No. 1 mined about 3.4 million clean tons per year, and Oaktown Fuels Mine No. 2 mined about 2.0 million clean tons per year.

I coordinated and managed the safety and health programs at three underground coal mines and two preparation plants. The safety department at Black Panther Mining, LLC, had one manager, seven safety technicians, and one trainer. The safety department at Five Star Mining, Inc. had a one manager, six safety technicians, and an administrative assistant. Additionally, I managed an Accident Investigator/Job Analyst and a Mine Rescue Trainer. I also assisted the engineering departments at both companies. I did extensive work with a team of lawyers on settlement of MSHA penalties assessed against the mines.

08/15/1971 to 06/03/2009: United States Department of Labor, Mine Safety Health Administration (MSHA) and its predecessor agencies the Mining Enforcement and Safety Agency (MESA) and the United States Bureau of Mines (USBM) both in the Department of the Interior

Title: Supervisory Mining Engineer

Duties: I supervised as many as three Mining Engineers, four Coal Mine Safety and Health Specialists (Ventilation), and one Mine Safety and Health Clerk in District 8's Ventilation and Impoundment Group. My responsibilities included the review of Mine Ventilation Plans; Emergency Response Plans, Mine Emergency Evacuation and Firefighting Programs of Instruction, Engineering Plans for the Design, Construction, and Maintenance of Impoundments, Refuse Pile Reports, Ground Control Plans, and Slope and Shaft Sinking Plans submitted by mine operators. Also, I supervised and made inspections and investigations of coal mines, both surface and underground, for compliance with regulations and approved plans. I participated in accident investigations, pressure quantity surveys of mine ventilation systems, and made investigations of petitions for modifications.

I participated in MSHA'S recovery efforts of the mine after the explosion at Kerr-McGee Coal Corporation's Galatia Mine, May 1998. Also, I participated in MSHA's oversight in opening the area of the mine sealed after the spontaneous combustion fire at Kerr-McGee Coal Corporation's Galatia Mine, November 1997 through February 1998.

As a member of MSHA's committee, I assisted in writing Safety Standards for the Use of a Belt Entry as an Intake Air Course; Final Rule, April 2, 2004

I was a member of MSHA's committee responsible for writing the Safety Standards for Underground Coal Mine Ventilation; Rule, May 15, 1992

I was Team Leader for the Ventilation and Mapping / Flames and Forces Team and signer of the "Report of Investigation, Underground Coal Mine Explosion, Pyro No. 9 Slope, William Station Mine, Pyro Mining Company, Sullivan, Union County, Kentucky, September 13, 1989." The explosion killed ten miners.

As a member of MSHA's Task Force on Longwall Mining, I studied longwall mining under deep cover and helped the committee publish its findings in a report titled "Two-Entry Longwall Mining Systems A Technical Evaluation" June 12, 1985. Many of the report's recommendations later became parts of mandatory regulations.

Prior to becoming a Supervisory Mining Engineer, October 1, 1982, I was classified as a Mining Engineer. In preparation for the duties as a Mining Engineer, I attended many training sessions to become an inspector and engineer including a 5-month long training course for engineers in Pittsburgh, Pennsylvania.. After the initial in-class training and subsequent field training, I inspected coal mines, both surface and underground. I reviewed Mine Ventilation Plans; Engineering Plans for the Design, Construction, and Maintenance of Impoundments; Ground Control Plans; Refuse Pile Reports; Mine Maps; Slope and Shaft Sinking Plans; and other plans.

Honors:

Distinguished Career Service Award, United States Department of Labor, April, 2003
Secretary's Exceptional Achievement Award, Noise Source Identification Group, April, 2002
Special Achievement Award, United States Department of Labor, April 22, 1991
Certificate of Appreciation, Ventilation Committee, United States Department of Labor, August 27, 1987

Education:

Bachelor of Science in Civil Engineering, June 1971, Michigan Technological University, Houghton, Michigan, 49931

Graduated June 1967, Iron Mountain Senior High School, Iron Mountain, Michigan 49801

Licenses:

Indiana Professional Engineer, License Number PE60016480

Training:

ANSUL Fire School, Marinette, Wisconsin, May 2012
Ventilation Specialist Training, MSHA Academy, Beckley, WV, April 16, 2009 (Annual Training)
MSHA'S Leadership Development Program, MSHA Academy, Beckley, WV, Completed December 12, 2008
Ventilation Summit, MSHA Academy, Beckley, WV, February 22, 2007
2006 MSHA Dam Safety Seminar, MSHA Academy, Beckley, WV, Completed May 25, 2006 (Annual Training)
Leadership Intensive Training, Staub Leadership Solutions, MSHA Academy, Completed November 17, 2005
Bleeder and Gob Ventilation Systems, MSHA Academy, October 1997
Blasting, MSHA Academy, Completed April 14, 1988

Use of Nuclear Testing Equipment, Troxler Electronic Laboratories, Atlanta, GA, Completed December 10, 1987

Mine Emergency Operations, MSHA Academy, Completed May 11, 1984

System Safety Engineering, MSHA Academy, Completed June 17, 1981

Industrial Hygiene for Safety Professionals, MSHA Academy, Completed April 20, 1979

MSHA Mine Inspector Training, 1977

Coal Mine Health and Safety Mining Engineer Training. Pittsburgh, Pennsylvania, completed January 11, 1972

Instructor:

MSHA Approved

Additional Classifications:

Mine Foreman, Bureau of Mines and Mining Safety, State of Indiana, Number 6-2808

Coal Miner, Bureau of Mines and Mining Safety, State of Indiana, Number 1-3401

Radiation Safety Officer

From: Joe Girardin
To: [Anderson, Shannon](#); jgilbertz@yonkeetoner.com; mbrezikfisher@yonkeetoner.com; [Jim Ruby](#)
Subject: YouTube Links for EQC August 1 & 2, 2017 Meeting
Date: Tuesday, July 18, 2017 4:21:32 PM

August 1, 2017 3:00 p.m. EQC Meeting

https://www.youtube.com/watch?v=T_dj0tcRv6s

August 1, 2017 4:00 p.m. EQC Meeting (Brook Discussion)

<https://www.youtube.com/watch?v=1UFp1Ksy9E0>

August 2, 2017 9:00 a.m. EQC Meeting, Uranium Rulemaking Public Hearing

<https://www.youtube.com/watch?v=MnjFLeo6IEw>

If for some reason the EQC wants discussion I will send you a link so you can participate. If that happens it would be best if you used headphones with a mic. If your computer has separate mic and headphone jack you will need an adapter to use a cell phone headset.

--

Joe Girardin, Paralegal

Environmental Quality Council

The information provided in this communication is confidential and protected, may be attorney client privileged, may constitute inside information, and is intended only for the use of the addressee. Unauthorized use, disclosure or copying is strictly prohibited and may be unlawful. If you have received this communication in error, please notify us immediately at 307-777-7170.

E-Mail to and from me, in connection with the transaction of public business, is subject to the Wyoming Public Records Act and may be disclosed to third parties.

From: Shannon Anderson
To: [Joe Girardin](#)
Cc: [Jim Ruby](#)
Subject: RE: Brook Mine deliberations
Date: Thursday, July 13, 2017 5:23:35 PM

Thanks, Joe – I'll look into the adapter but youtube should work. Appreciate the help.
Shannon

From: Joe Girardin [mailto:joe.girardin@wyo.gov]
Sent: Thursday, July 13, 2017 3:11 PM
To: Shannon Anderson
Cc: Jim Ruby
Subject: Re: Brook Mine deliberations

Shannon,
I will send you a link just before the meeting. I plan on using YouTube again and it doesn't allow me to invite people to attend until after it is started.

It would be best if you had headphones with a mic. If your computer has separate mic and headphone jack you will need an adapter to use a cell phone headset.



On Thu, Jul 13, 2017 at 2:51 PM, Shannon Anderson <sanderson@powderriverbasin.org> wrote:

Thanks, Jim – I was just wondering about this. With other commitments that week I'm going to have to call in to the meeting – will that be a problem? I will have wifi access where I will be if connection via online is a better option. Thanks, Shannon

From: Jim Ruby [mailto:jim.ruby@wyo.gov]
Sent: Thursday, July 13, 2017 8:04 AM
To: James LaRock; Jeffrey S. Pope (JSPope@hollandhart.com); Isaac Sutphin; andrew kuhlmann; Jay Gilbertz; Lynne Boomgaarden; Shannon Anderson; Thomas Sansonetti
Subject: Brook Mine deliberations

Dear Counsel:

The public deliberations for the Brook Mine matter will be held on August 1, 2017 at about 4:00 p.m. The meeting of the Council begins at 3:00 p.m. on the 1st. The Council will go into executive session upon the meeting starting to receive legal advice. When the Council exits executive session the Brook matter will be taken up.

If you have any questions please contact me.

Have a great week.

Jim Ruby

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--

Joe Girardin, Paralegal

Environmental Quality Council

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From: Joe Girardin
To: [Shannon Anderson](#)
Cc: [Jim Ruby](#)
Subject: Re: Brook Mine deliberations
Date: Thursday, July 13, 2017 3:11:12 PM

Shannon,

I will send you a link just before the meeting. I plan on using YouTube again and it doesn't allow me to invite people to attend until after it is started.

It would be best if you had headphones with a mic. If your computer has separate mic and headphone jack you will need an adapter to use a cell phone headset.

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From: Jim Ruby [mailto:jim.ruby@wyo.gov]

Sent: Thursday, July 13, 2017 8:04 AM

To: James LaRock; Jeffrey S. Pope (JSPope@hollandhart.com); Isaac Sutphin; andrew kuhlmann; Jay Gilbertz; Lynne Boomgaarden; Shannon Anderson; Thomas Sansonetti

Subject: Brook Mine deliberations

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If you have any questions please contact me.

Have a great week.

Jim Ruby

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--

Joe Girardin, Paralegal

Environmental Quality Council

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E-Mail to and from me, in connection with the transaction of public business, is subject to the Wyoming Public Records Act and may be disclosed to third parties.

From: Shannon Anderson
To: [Jim Ruby](#); [Joe Girardin](#)
Subject: RE: Brook Mine deliberations
Date: Thursday, July 13, 2017 2:51:30 PM

Thanks, Jim – I was just wondering about this. With other commitments that week I'm going to have to call in to the meeting – will that be a problem? I will have wifi access where I will be if connection via online is a better option. Thanks, Shannon

From: Jim Ruby [mailto:jim.ruby@wyo.gov]
Sent: Thursday, July 13, 2017 8:04 AM
To: James LaRock; Jeffrey S. Pope (JSPope@hollandhart.com); Isaac Sutphin; andrew kuhlmann; Jay Gilbertz; Lynne Boomgaarden; Shannon Anderson; Thomas Sansonetti
Subject: Brook Mine deliberations

Dear Counsel:

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If you have any questions please contact me.

Have a great week.

Jim Ruby

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From: Jim Ruby
To: [James LaRock](#); [Jeffrey S. Pope \(JPope@hollandhart.com\)](mailto:JPope@hollandhart.com); [Isaac Sutphin](#); [andrew kuhlmann](#); [Jay Gilbertz](#); [Lynne Boomgaarden](#); [Shannon Anderson](#); [Thomas Sansonetti](#)
Subject: Brook Mine deliberations
Date: Thursday, July 13, 2017 8:04:27 AM

Dear Counsel:

The public deliberations for the Brook Mine matter will be held on August 1, 2017 at about 4:00 p.m. The meeting of the Council begins at 3:00 p.m. on the 1st. The Council will go into executive session upon the meeting starting to receive legal advice. When the Council exits executive session the Brook matter will be taken up.

If you have any questions please contact me.

Have a great week.

Jim Ruby

From: Jim Ruby
To: [James LaRock](#)
Cc: [Lynne Boomgaarden](#); [andrew kuhlmann](#); [Shannon Anderson](#); [Jeffrey S. Pope \(JSPope@hollandhart.com\)](#); [Isaac Sutphin](#); [Jay Gilbert](#); [Thomas Sansonetti](#); [ryan schelhaas](#); [Dave Bagley](#)
Subject: Re: Notice of Transcript
Date: Monday, July 03, 2017 10:12:01 AM

Hi Counsel:

The following business day, Monday the 24th will be the final day for filing.

Jim

On Mon, Jul 3, 2017 at 10:10 AM, James LaRock <james.larock@wyo.gov> wrote:

Jim,

20 calendar days from today is the 23rd, a Sunday. The Briefing Order doesn't clarify what the due date will be for the proposed FF&CL when the deadline falls on a weekend. When must the proposed FF&CL be filed?

Thank you,

On Mon, Jul 3, 2017 at 10:00 AM, Jim Ruby <jim.ruby@wyo.gov> wrote:

Dear Counsel:

This is to provide you notice that the Transcript of the Brook Final Hearing has been completed and filed with the Council. Please refer to the previous order to determine the timeline for future filings. That order is attached.

Sincerely,

Jim Ruby

E-Mail to and from me, in connection with the transaction of public business, is subject to the Wyoming Public Records Act and may be disclosed to third parties.

--

James LaRock
Assistant Attorney General
Water and Natural Resources Division
Office of the Attorney General
2320 Capitol Avenue
Cheyenne, Wyoming 82002
[\(307\) 777-7819](tel:3077777819)

E-Mail to and from me, in connection with the transaction of public business, is subject to the Wyoming Public Records Act and may be disclosed to third parties.

E-Mail to and from me, in connection with the transaction of public business, is subject to the Wyoming Public Records Act and may be disclosed to third parties.

From: James LaRock
To: [Jim Ruby](#)
Cc: [Lynne Boomgaarden](#); [andrew kuhlmann](#); [Shannon Anderson](#); [Jeffrey S. Pope \(JSPope@hollandhart.com\)](#); [Isaac Sutphin](#); [Jay Gilbertz](#); [Thomas Sansonetti](#); [ryan schelhaas](#); [Dave Bagley](#)
Subject: Re: Notice of Transcript
Date: Monday, July 03, 2017 10:10:43 AM

Jim,

20 calendar days from today is the 23rd, a Sunday. The Briefing Order doesn't clarify what the due date will be for the proposed FF&CL when the deadline falls on a weekend. When must the proposed FF&CL be filed?

Thank you,

On Mon, Jul 3, 2017 at 10:00 AM, Jim Ruby <jim.ruby@wyo.gov> wrote:

Dear Counsel:

This is to provide you notice that the Transcript of the Brook Final Hearing has been completed and filed with the Council. Please refer to the previous order to determine the timeline for future filings. That order is attached.

Sincerely,

Jim Ruby

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--

James LaRock
Assistant Attorney General
Water and Natural Resources Division
Office of the Attorney General
2320 Capitol Avenue
Cheyenne, Wyoming 82002
(307) 777-7819

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E-Mail to and from me, in connection with the transaction of public business, is subject to the Wyoming Public Records Act and may be disclosed to third parties.

From: Jim Ruby
To: [Lynne Boomgaarden](#); [andrew kuhlmann](#); [Shannon Anderson](#); [Jeffrey S. Pope \(JSPope@hollandhart.com\)](#); [Isaac Sutphin](#); [Jay Gilbert](#); [James LaRock](#); [Thomas Sansonetti](#); [ryan schelhaas](#); [Dave Bagley](#)
Subject: Notice of Transcript
Date: Monday, July 03, 2017 10:00:31 AM
Attachments: [Briefing Order.pdf](#)

Dear Counsel:

This is to provide you notice that the Transcript of the Brook Final Hearing has been completed and filed with the Council. Please refer to the previous order to determine the timeline for future filings. That order is attached.

Sincerely,

Jim Ruby

BEFORE THE ENVIRONMENTAL QUALITY COUNCIL
STATE OF WYOMING

IN RE BROOK MINE APPLICATION	)	DOCKET 17-4802
)	
TFN 6 2-025	)	BRIEFING ORDER
)	


On the 8th day of June 2017, the evidence portion of the contested case concluded and the hearing was recessed until further notice. Because there appears that there may be disagreement or confusion about what legal requirements or standards the Council is required to consider to decide this matter, I have decided to require the parties to file briefs addressing the legal issue of what specific statutes, rules, and other legal guidance the Council is required by law to consider in this matter. Specifically, I request that the parties brief whether the Council is required to consider all or portions of Wyo. Stat. Ann. § 35-11-406(n) when deciding this matter. As part of the briefs, the parties are specifically required to address whether subsection (n) is applicable in this matter, and if a party believes it is not applicable, that party must describe why it is not and further explain when subsection (n) becomes applicable with specific reference to other subsections that are applicable instead. As part of this brief, please describe the appropriate burden of proof standard and explain who has the burden. The parties' briefs must not exceed 15 pages. These briefs are due by June 26. The parties may file reply briefs by June 30.

In addition, it is expected that the contested case transcript will be available to the parties on or before June 30, 2017. When the transcript is available, Council staff will notify the parties in writing. Within 20 calendar days after that written notice, the parties shall file proposed findings of facts and conclusions of law with the Council. These filings are limited to 40 pages.

The proposed findings of fact and conclusions of law must focus on the law that is applicable in this matter and must include citations to the specific legal requirements found in statutes, rules, and other legal guidance that the Council is required to consider to decide this matter. The proposed findings of fact and conclusions of law must also include the necessary facts, with citations to the transcript and exhibits to support your legal conclusions. In this filing, please include the appropriate burden of proof standard.

Last, there was testimony about possible permit conditions or changes. The proposed findings of fact and conclusions of law should identify suggested permit changes or conditions that a party is requesting the Council consider, and any legal basis and facts that the party believes supports the inclusion of the condition or change to the permit.

SO ORDERED THIS 13th DAY OF JUNE 2017.


Dr. David M. Bagley
Hearing Officer

CERTIFICATE OF SERVICE

I, Jim Ruby, certify that at Cheyenne, Wyoming, on the 13th day of June, 2017, I served a copy of the foregoing ORDER by electronic mail addressed to the following:


Andrew Kuhlmann
Asst. Attorney General
andrew.kuhlmann@wyo.gov

Jeff Pope
Isaac Sutphin
Attorneys for Brook Mine
jspope@hollandandhart.com
INSutphin@hollandandhart.com
jmkelley@hollandandhart.com
csvec@hollandandhart.com

Lynn Boomgaarden
Attorney for Big Horn Coal
lboomgaarden@crowleyfleck.com
jwacker@crowleyfleck.com
wdrake@crowleyfleck.com

Jay Gilbertz
Attorney for the Fishers
jgilbertz@yonkeetoner.com

Shannon Anderson
Attorney for PRBRC
sanderson@powderriverbasin.org



Jim Ruby, Executive Officer
Environmental Quality Council
122 W. 25th Street
Herschler Bldg., Rm. 1714
Cheyenne, WY 82002
Phone: 307-777-7170

From: Shannon Anderson
To: [Jan Kelley](#)
Cc: lboomgaarden@crowleyfleck.com; cgregersen@crowleyfleck.com; todd.parfitt@wyo.gov; andrew.kuhlmann@wyo.gov; james.larock@wyo.gov; jgilbertz@yonkeetoner.com; alan.edwards@wyo.gov; [Jim Ruby](#); [Thomas Sansonetti](#); [Isaac Sutphin](#); [Jeffrey S. Pope](#); [Carri Svec](#)
Subject: Re: Brook Mine Application -- Brook Mine's Response Briefs to BHC; Fishers; PRBRC
Date: Saturday, July 01, 2017 7:36:14 AM
Attachments: [2017 7-1 Mot to Strike.pdf](#)

Dear all, please see the attached motion filed in response to Brook's filings yesterday.

Also, I will not file something to this effect because the Council is well aware of this but I wanted to note that Brook is incorrect in stating in its response to our request to the Council that the 60 day clock under 406(p) has started to run. Chairman Bagley specifically recessed the hearing on June 8th - he did not end it. See the transcript and the June 13 Order. The clock to issue the findings of fact and decision only starts to run after the hearing is concluded.

Best,
Shannon

On Fri, Jun 30, 2017 at 4:03 PM, Jan Kelley <JMKelley@hollandhart.com> wrote:

Attached please find:

1. Brook Mine's Response to Big Horn Coal's Brief Regarding the Scope of the Environmental Quality Council's Review and Request for Oral Argument;
2. Brook Mine's Response to Objector Fishers' Brief on the Application of Wyoming Statute § 35-11-506(n) and Request for Oral Argument;
3. Brook Mine's Response Brief to Powder River Basin Resource Council's Brief on Statutes and Regulations that the Council Must Consider and Request for Oral Argument; and
4. Brook Mine's Objection to Powder River Basin's Request to the Environmental Quality Council.

Jan Kelley

Assistant to Isaac Sutphin, JoAnna DeWald,

and Sami Falzone

Holland & Hart LLP
2515 Warren Avenue, Suite 450

Cheyenne, WY 82001
Phone (307) 778-4233
Fax (307) 778-8175
E-mail: jmkelley@hollandhart.com

In the interest of judicial efficiency and fairness to the other parties, the Council should strike Brook's replies.

Respectfully submitted this 1st day of July, 2017.

/s/ Shannon Anderson
Shannon Anderson
Powder River Basin Resource Council
934 N. Main St., Sheridan, WY 82801
(307) 672-5809
sanderson@powderriverbasin.org

CERTIFICATE OF SERVICE

I hereby certify that on July 1, 2017, I served a copy of the foregoing **MOTION TO STRIKE** on the following parties by electronic mail, and through the EQC's electronic filing system, which will send a notice of electronic filing to all counsel and parties of record.

Andrew Kuhlmann
James LaRock
Wyoming Attorney General's Office
andrew.kuhlmann@wyo.gov
james.larock@wyo.gov
Attorneys for DEQ

Todd Parfitt
Director, DEQ
todd.parfitt@wyo.gov

Jeff Pope
Isaac Sutphin
Thomas Sansonetti
Holland and Hart, LLP
JPope@hollandhart.com
INSutphin@hollandhart.com
TLSansonetti@hollandhart.com
Attorneys for Brook Mining Co., LLC

Lynne Boomgaarden,
Clayton Gregersen
Crowley Fleck PLLP
lboomgaarden@crowleyfleck.com
cgregersen@crowleyfleck.com
Attorneys for Big Horn Coal Co.

Jay Gilbertz
Yonkee & Toner, LLP
jgilbertz@yonkeetoner.com
Attorney for Mary Brezik-Fisher & David Fisher

/s/Shannon Anderson
Shannon Anderson



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--

Shannon Anderson
Powder River Basin Resource Council
934 N. Main St., Sheridan, WY 82801
307-672-5809 (o) 307-763-0995 (c)
sanderson@powderriverbasin.org

From: Jan Kelley
To: lboomgaarden@crowleyfleck.com; cgregersen@crowleyfleck.com; todd.parfitt@wyo.gov; sanderson@powderriverbasin.org; andrew.kuhlmann@wyo.gov; james.larock@wyo.gov; jgilbertz@yonkeetoner.com; alan.edwards@wyo.gov; [Jim.Ruby](mailto:Jim.Ruby@wyo.gov)
Cc: [Thomas Sansonetti](mailto:Thomas.Sansonetti@wyo.gov); [Isaac Sutphin](mailto:Isaac.Sutphin@wyo.gov); [Jeffrey S. Pope](mailto:Jeffrey.S.Pope@wyo.gov); [Carri Svec](mailto:Carri.Svec@wyo.gov)
Subject: Brook Mine Application -- Brook Mine's Response Briefs to BHC; Fishers; PRBRC
Date: Friday, June 30, 2017 4:04:04 PM
Attachments: [2017-06-30 Brook's Response Brief to BHC's Brief Regarding the Scope ofpdf](#)
[2017-06-30 Brook's Response to Fishers' Brief on the Application of WS 3....pdf](#)
[2017-06-30 Brook's Response Brief to PRBRC's Brief on Statutes and Regspdf](#)
[2017-06-30 Brook's Objection to PRBRC's Request to the EOC.PDF](#)

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3. Brook Mine's Response Brief to Powder River Basin Resource Council's Brief on Statutes and Regulations that the Council Must Consider and Request for Oral Argument; and
4. Brook Mine's Objection to Powder River Basin's Request to the Environmental Quality Council.

Jan Kelley

*Assistant to Isaac Sutphin, JoAnna DeWald,
and Sami Falzone*

Holland & Hart LLP
2515 Warren Avenue, Suite 450
Cheyenne, WY 82001
Phone (307) 778-4233
Fax (307) 778-8175
E-mail: jmkelley@hollandhart.com



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Thomas L. Sansonetti (Wyo. State Bar # 43354)
Isaac N. Sutphin, P.C. (Wyo. State Bar # 6-3711)
Jeffrey S. Pope (Wyo. State Bar # 7-4859)
HOLLAND & HART LLP
2515 Warren Avenue, Suite 450
P.O. Box 1347
Cheyenne, WY 82003-1347
Telephone: (307) 778-4200
tlsansonetti@hollandhart.com
insutphin@hollandhart.com
jspope@hollandhart.com

ATTORNEYS FOR PERMIT APPLICANT
BROOK MINING COMPANY, LLC

**BEFORE THE ENVIRONMENTAL QUALITY COUNCIL
STATE OF WYOMING**

IN RE BROOK MINE APPLICATION)	
	)	Civil Action No. 17-4802
TFN 6 2-025)	

**BROOK MINE’S RESPONSE BRIEF TO BIG HORN COAL’S BRIEF REGARDING
THE SCOPE OF THE ENVIRONMENTAL QUALITY COUNCIL’S REVIEW AND
REQUEST FOR ORAL ARGUMENT**

INTRODUCTION

Despite differences as to sufficiency of Brook Mine’s (Brook) permit application, Brook and Big Horn Coal (Big Horn) agree about how the permitting process works from Brook filing its application through the public comment period. But Big Horn’s central premise that the Council must consider “all of the statutes and regulations relating to permit issuance” is untrue. (Big Horn Br. at 2.) This case does not require and the law does not allow the Council to consider all statutes and regulations. Instead, the Council decides whether Brook’s permit application is complete, without deficiencies, and suitable for publication. The DEQ administrator then makes the remaining findings under 406(n), and the DEQ director issues or denies the permit application.

Although the Wyoming Supreme Court has not addressed the legal issues the Council asked the parties to brief, that does not mean the Council can ignore established legal principles even if Big Horn wants the Council to do so. The rules of statutory interpretation and the Council's limited authority constrain the Council's role here. (*See* Brook's Br. at 2-6.)

ARGUMENT

I. The plain language of Section 406(n) and this Council's limited review do not allow the Council to make the 406(n) findings.

Like a court, the Council must give a statute's words their plain meaning to find the "most likely, most reasonable, interpretation of the statute, given its design and purpose." *In the Interest of JB*, 2017 WY 26, ¶ 12, 390 P.3d 357, 360 (Wyo. 2017). But the Council cannot read words into the statute or render provisions meaningless. *City of Casper v. Holloway*, 2015 WY 93, ¶ 20, 354 P.3d 65, 71 (Wyo. 2015).

The Council would have to violate these principles to make the 406(n) findings. The plain language of section 406(n) states that the administrator makes the findings. Wyo. Stat. Ann. § 35-11-406(n) ("the administrator finds in writing..."). To insert the Council into this process would ignore the word "administrator" and read the word "Council" into 406(n). Wyoming law permits neither approach. *In the Interest of JB*, ¶ 12, 390 P.3d at 360; *Holloway*, ¶ 20, 354 P.3d at 71. Beyond changing section 406(n), inserting the Council in the place of the administrator would render the administrator's specific statutory and regulatory authority to "enforce and administer [the Environmental Quality Act]" moot. *See* Wyo. Stat. Ann. § 35-11-110(a); Wyo. Admin. Code § ENV LQC Ch. 12 § 1(a)(iv) ("In addition to the specific findings required by W.S. § 35-11-406(n), no permit shall be approved unless the administrator also finds in writing...").

The Surface Mining Control and Reclamation Act (SMCRA) again provides a good foil to Big Horn's position. Under SMCRA, the "regulatory authority" makes the findings for the federal counterpart of 406(n). *See* 30 U.S.C. § 1260(b). Here, the regulatory authority is DEQ; so having the DEQ administrator make the findings under 406(n) ensures Wyoming's compliance with SMCRA.

Section 406(o), which deals with operators with previous violations, erases any doubt about 406(n)'s plain meaning. Section 406(o) states, "[n]o permit shall be issued to an applicant after a finding **by the director or council**...." *Id.* This language demonstrates that the legislature could allow either the administrator or the Council to make findings if it had wanted. But the legislature chose not to put language in 406(n) that specified the Council.

Big Horn's position would also ask the Council to exceed its statutory authority. (Brook Br. at 2-6.); *Amoco Prod. Co. v. State Bd. of Equalization*, 12 P.3d 668, 673 (Wyo. 2000) (explaining an agency's power depends upon statutes, so "they must find within the statute warrant for the exercise of any authority which they claim.") Under the Environmental Quality Act, the Council has authority to conduct contested cases about "the administration or enforcement of any law, rule, regulation, standard or order issued or administered by the department or any division thereof." Wyo. Stat. Ann. § 35-11-112(a)(iii). This means the Council's review is limited to what DEQ has administered; in other words, whether DEQ correctly deemed the permit application complete, without deficiencies, and suitable for publication. (Brook Br. at 3-4.) This same logic means the Council does not consider section 406(n) because the DEQ administrator has not yet issued any findings under that section. (*Id.* at 4-5.)

Big Horn hints the Council should make the 406(n) findings because DEQ did not “pass judgment as to the substance of the application’s contents and its overall compliance with substantive or legal requirements and prerequisites to permit issuance.” (Big Horn Br. at 8.) DEQ, however, did evaluate the substance of Brook’s permit application. DEQ has a duty to review an application for deficiencies, which the Act defines as “an omission or lack of sufficient information serious enough to preclude correction or compliance by stipulation in the approved permit to be issued by the director.” Wyo. Stat. Ann. § 35-11-103(e)(xxiv). Here, DEQ did that and after 6 rounds of comments and responses deemed Brook’s permit application without deficiencies and suitable for publication.

Even if Big Horn had not distorted DEQ’s review of Brook’s application, Big Horn still misses how section 406(n) functions in the larger scheme of the permitting process. Wyoming statutes and regulations require Brook’s permit application to provide detailed information necessary for the administrator to make the 406(n) findings. But that information alone is not sufficient to make the findings because DEQ must perform the cumulative hydrologic impact assessment and other analysis before it makes the 406(n) findings. *See* Wyo. Stat. Ann. § 35-11-406(n)(iii); Wyo. Admin. Code § ENV LQC Ch. 19 sec. 2; Wyo. Admin. Code § ENV LQC Ch. 12 § 1(a)(iv). Those assessments use information and data from the permit application along with internal DEQ information and data. The Council, however, does not have DEQ’s internal information or data, or the statutory authority to conduct the required assessments, making Big Horn’s argument legally and practically impossible.

Still, Big Horn claims the Council can bypass the plain language of 406(n) because the Council has authority to grant permits. (Big Horn Br. at 12.) This argument has two fatal flaws. First, the Council’s authority to grant a permit does not apply here. The specific statutes that

define the Council's authority in a contested case and DEQ's authority in the permitting process control over a general statute about granting permits. (Brook Br. at 5-6.)

Second, the statute that gives the Council authority to grant permits states the authority "is subject to applicable state law." Wyo. Stat. Ann. § 35-11-112(c)(ii). The applicable state law here is section 406, which gives the administrator the authority to make the findings under 406(n). Likewise, the director has the power to issue permits. Wyo. Stat. Ann. § 35-11-406(p). So the applicable state law divests the Council of authority to grant permits governed by Section 406.

On a practical level this makes sense because the Council has a different role. In a contested case, the Council acts as a quasi-judicial body—not a regulator. *See Amoco Prod. Co. v. Dep't of Revenue*, 2004 WY 89, ¶ 24, 94 P.3d 430, 441 (Wyo. 2004) (explaining the boards exercises quasi-judicial authority when deciding contested cases.) But if the Council makes the 406(n) findings, it becomes the regulator. This would prevent the Council from reviewing the regulator's work thus undermining the Council's purpose in a contested case. *See* Wyo. Stat. Ann. § 35-11-112(a)(iii).

Big Horn also contends the Council should not defer to DEQ's technical adequacy findings because that phrase does not appear in statute or regulations. (Big Horn Br. at 3-4.) This asks the Council to overlook expert testimony based on semantics. DEQ testified that technical adequacy is its way of describing the review to determine if a permit application is without deficiencies. DEQ's use of jargon does not change the statute or change that DEQ conducted the required review for deficiencies. It also should not change the weight the Council gives the testimony.

The lone legal support Big Horn cites for the Council to make the 406(n) findings is *Grams v. Env'tl Quality Council*, 730 P.2d 784 (Wyo. 1986). (Big Horn Br. at 11-12.) But Big Horn has misled the Council about what the Wyoming Supreme Court held in *Grams*. *Grams* decided the following:

- the objectors received adequate notice of the contested case. 730 P.2d at 786-86;
- the Council correctly denied the objectors' request for a continuance. *Id.* at 788;
- the limits on objectors' discovery rights. *Id.*;
- the permit applicant's revisions to the application were not *ex parte* communications with DEQ. *Id.* at 789;
- the Council did not shift the burden of proof from the permit applicant. *Id.*; and
- the Council correctly decided the permit application was complete. *Id.* at 790.

The Council did find that the applicant had proven the elements of 406(n). *Id.* at 789. But the Supreme Court never held the Council must make the 406(n) findings.¹

The *Grams* case still leaves the relevant law as the statute governing this Council's authority and the law for applying and interpreting statutes. That law leads to one outcome, the Council does not make the 406(n) findings.

CONCLUSION

Big Horn's brief relies on the faulty assumption that this hearing will decide all aspects of the permitting process. No law supports that reading. The legislature chose not to include a hearing specific to 406(n) or state that the 406(n) findings must occur before the public comment

¹ It is unknown from the Supreme Court's opinion and the Council's order if DEQ issued a CHIA or the 406(n) findings before the permit application went to publication. (See Decision attached as Ex. 1)

process. Likewise, section 406 does not grant the Council authority to make these decisions or render a final decision. Should Big Horn or any objector wish to change that reality, they can do so through the legislature—not through the Council.

Brook requests the Council schedule oral argument on the parties' briefings relating to statutes and regulations the Council must consider.

DATED: June 30, 2017.



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CERTIFICATE OF SERVICE

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Exhibit 1

BEFORE THE
ENVIRONMENTAL QUALITY COUNCIL
STATE OF WYOMING

FILED

NOV 19 1985

Terri A. Lorenzon, Adm. Aide
Environmental Quality Council

IN THE MATTER OF OBJECTIONS)
TO THE PERMIT APPLICATION OF)
AMAX COAL COMPANY, EAGLE BUTTE MINE,)
TFN 1 6/212)

FINDINGS OF FACT, CONCLUSIONS OF LAW AND ORDER GRANTING PERMIT

The application of Amax Coal Company for a surface coal mining permit and the objections thereto of LeRoy Grams and Mary H. Grams were considered by the Environmental Quality Council at a public meeting in Jackson, Wyoming, on September 30, 1985, following an evidentiary hearing held in Cheyenne, Wyoming, on August 28, 1985. Amax Coal Company appeared and was represented by Steven R. Youngbauer of Amax Coal Company. Mary H. Grams did not appear and was not represented at the hearing, and LeRoy Grams appeared pro se. The Land Quality Division of the Department of Environmental Quality appeared and was represented by Weldon S. Caldbeck, an Assistant Attorney General. Having considered the evidence presented at the hearing and the arguments of counsel, the Environmental Quality Council hereby finds and concludes as follows:

FINDINGS OF FACT

1. This proceeding arises from the application of Amax Coal Company, a division of Amax Incorporated (hereinafter "Amax"), to the Department of Environmental Quality, Land Quality Division, to obtain a permit to conduct surface coal mining activities.

2. The Eagle Butte Mine received a permit from the Land Quality Division in 1976. This permit application was submitted pursuant to Wyoming statutes and regulations that implement the Surface Mining Control and Reclamation Act, P.L. 95-87.

3. On May 21, 1985, the Land Quality Division, determined the Eagle Butte Mine application, assigned the temporary filing number TFN

1 6/212, is complete and suitable for final publication pursuant to W.S, 35-11-406(g).

4. LeRoy Grams and Mary H. Grams, received notice of the filing of the permit application pursuant to W.S. 35-11-406(g) and (j).

5. On August 6, 1985, the Land Quality Division received timely, written objections from the protestants LeRoy Grams and Mary H. Grams.

6. On August 20, 1985, Amax filed a Motion to Dismiss alleging that specified allegations in the protestants' petitions failed to state a claim upon which relief could be granted, and further stating that the Council lacked subject-matter jurisdiction over the issues raised.

7. Mary H. Grams is the owner of the surface estate of lands contiguous to the proposed mine permit area and water rights appurtenant to such lands (as described subsequently by the protestants' attorney), comprising the NW $\frac{1}{4}$ of Section 34, NE $\frac{1}{4}$ of Section 33 and the NE $\frac{1}{4}$ NW $\frac{1}{4}$ of Section 32, Township 51 North, Range 72 West, 6th P.M., Campbell County, Wyoming.

8. LeRoy Grams is the owner of all mineral rights underlying the lands owned by Mary H. Grams described in the above paragraph.

9. The protestant, Mary H. Grams, presented no evidence to substantiate allegations in her petition protesting the issuance of the mining permit to Amax Coal Company.

10. Evidence at the hearing demonstrated that the Eagle Butte Mine application does not request approval to mine the Little Rawhide Tract which was purchased in the 1982 coal lease sale held by the Department of Interior.

11. Evidence at the hearing demonstrated that access to the Grams' property will not be limited due to the mining operation, and a highway location project to which Mr. Grams objected, is a project of the Wyoming Highway Department and not Amax Coal Company.

12. The protestant, LeRoy Grams, produced no evidence on the issues raised in his petition alleging that:

A. The mining operation constitutes a public and private nuisance;

B. The coal company originally sought authorization for mining on an area and for a time in excess of that authorized by the Environmental Quality Act;

C. The application does not contain a map required by the Environmental Quality Act;

D. The reclamation plan did not comply with the Environmental Quality Act;

E. Amax Coal Company is in non-compliance with its current permit;

F. The present operation has lowered the groundwater on the Grams' property;

G. The issuance of this permit is contrary to the law and policy of the State of Wyoming and the United States;

H. Unidentified test holes were drilled beyond the terms of an exploration permit; and

I. No accommodation was made for private oil and gas leases or abandoned oil and gas wells.

13. Section 1.8 of the permit application contains a legal description of the permit area and this description does include the railroad to the point it splits to the Carter spur.

14. Section 1.10 of the permit application contains a demonstration that the current and proposed operation is in compliance with the Environmental Quality Act.

15. Section 2 of the permit application contains a general description of the area including a description of wildlife. No bald eagle roosts, bald eagle nests, or black-footed ferrets have been observed within or adjacent to the permit area by the U.S. Fish and Wildlife Service, wildlife consultants, or Amax Coal Company during studies conducted through 1985.

16. Neither the Amax Coal Company permit area nor the Grams' property contains habitat, such as Ponderosa Pine Hills or wooded riparian bottoms, suitable for bald eagle roosts.

17. Neither the Amax Coal Company permit area nor the Grams' property contains extensive colonies of burrowing animals, primarily prairie dogs, which are needed to support black-footed ferret populations.

18. Although bald eagles and golden eagles have been seen on the Grams' property and on the permit area, no evidence was produced indicating they roosted or nested in the area.

19. It is highly unlikely that black-footed ferrets live in the Eagle Butte Mine permit area or in the vicinity of the permit area.

20. Although drainage into a livestock reservoir on the Grams' property will be affected by the mining operation, much of the drainage area will remain intact.

21. The three (3) groundwater wells located on the Grams' property will not be significantly affected by the mining operation, and permit provisions for mitigation are sufficient for any unforeseen problems.

22. The reclamation plan will accomplish reclamation as required by the Environmental Quality Act.

23. The permit application contains a plan for special handling of acid and toxic materials to prevent contamination of ground or surface waters.

24. Eagle Butte Mine is grandfathered under W.S. 35-11-406(n)(v)(B) in regard to mining an alluvial valley floor.

25. All maps required by the Environmental Quality Act are included in the permit application.

26. Section 3.0 of the permit application contains a ground control plan that identifies a safe slope and benching conditions in order that the topographic surface beyond the affected area will not be in danger of collapse or nor will there be danger of interior collapse. There will be no lack of lateral and subjacent support for the Grams' property.

27. Amax Coal Company's mining operation will not mine around the Grams' property, thus, leaving that property with unreclaimed, vertical walls.

28. Section 3.8 of the permit application contains a blasting plan which insures that explosives will be used in accordance with existing state and federal laws. No blasting activities will occur within one half mile of the Grams' ranch buildings.

29. The proposed operation has been designed to prevent material damage to the hydrologic balance outside the permit area.

30. No prime farmland is included within the permit area.

CONCLUSIONS OF LAW

1. This proceeding is under the Wyoming Environmental Quality Act, W.S. 35-11-101 through 1207, 1977 as amended.

2. Statutory notice was given by the applicant, Amax Coal Company.

3. Actual and statutory notice of the application was received by the protestants.

4. As the Eagle Butte Mine application, TFN 1 6/212, does not request approval to mine the Little Rawhide Tract, which was issued in the 1982 coal lease sale held by the Department of Interior, allegations concerning the existing permit allegations that this permit application should be deemed incomplete because of the 1982 coal lease sale should be dismissed.

5. The protestants are not precluded by this order from seeking any relief from any state agency having jurisdiction in the event of future, adverse effects on groundwater underlying the Grams' property.

6. The protestants, LeRoy Grams and Mary H. Grams, have not met their burden of going forward with evidence to demonstrate this permit application is incomplete.

7. Amax Coal Company has met its burden of proof demonstrating that the Eagle Butte Mine is in compliance with W.S. 35-11-406(n), and all other applicable state laws.

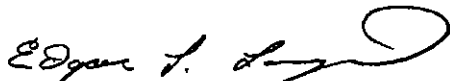
ORDER

IT IS HEREBY ORDERED THAT:

1. Allegations IV, V, VI, VII, VIII, X, XIV, and XV of the objections of LeRoy Grams, and allegations IV, V, VI, VII, and VIII of the objections of Mary H. Grams, are hereby dismissed; and

2. The permit to mine shall be granted pursuant to W.S. 35-11-406(p).

DATED this 19th day of November, 1985.



Edgar L. Langrand
Hearing Examiner

Brook diverges from Fishers and the other objectors on whether the Council or the administrator must make the findings under 406(n). Like the other objectors, Fishers brief is long on assertions but short on law. But the law matters. It defines the Council's authority and how the Council must interpret the statutes governing the permitting process. Applying that law means the Council reviews whether DEQ correctly decided Brook's permit application was complete and without deficiencies. (Brook Br. at 1-2.) After the Council issues findings of fact and conclusions of law on those issues, the administrator makes the required findings under 406(n), including the cumulative hydrologic impact assessment. (*Id.* at 5-6.) Fishers' assertions otherwise fail for the two reasons discussed below.

ARGUMENT

I. The plain language of Section 406(n) and this Council's limited review do not allow the Council to make the 406(n) findings.

Like a court, the Council must give a statute's words their plain meaning to find the "most likely, most reasonable, interpretation of the statute, given its design and purpose." *In the Interest of JB*, 2017 WY 26, ¶ 12, 390 P.3d 357, 360 (Wyo. 2017). But the Council cannot read words into the statute or render provisions meaningless. *City of Casper v. Holloway*, 2015 WY 93, ¶ 20, 354 P.3d 65, 71 (Wyo. 2015).

As Brook's opening brief explained, the Council would have to violate these principles to make the 406(n) findings. (Brook Br. at 2-6.) The plain language of section 406(n) states that the administrator makes the findings. Wyo. Stat. Ann. § 35-11-406(n) ("the administrator finds in writing..."). To insert the Council into this process would ignore the word "administrator" and read the word "Council" into 406(n). Wyoming law permits neither approach. *In the Interest of JB*, ¶ 12, 390 P.3d at 360; *Holloway*, ¶ 20, 354 P.3d at 71. Beyond changing section 406(n), inserting the Council in the place of the administrator would render the administrator's specific

statutory and regulatory authority to “enforce and administer [the Environmental Quality Act]” moot. *See* Wyo. Stat. Ann. § 35-11-110(a); Wyo. Admin. Code § ENV LQC Ch. 12 § 1(a)(iv) (“In addition to the specific findings required by W.S. § 35-11-406(n), no permit shall be approved unless the Administrator also finds in writing...”).

The Surface Mining Control and Reclamation Act (SMCRA) again provides a good foil to Fishers’ position. Under SMCRA, the “regulatory authority” makes the findings for the federal counterpart of 406(n). *See* 30 U.S.C. § 1260(b). Here, the regulatory authority is DEQ; so having the DEQ administrator make the findings under 406(n) ensures Wyoming’s compliance with SMCRA.

Section 406(o), which deals with operators with previous violations, erases any doubt about 406(n)’s plain meaning. Section 406(o) states, “[n]o permit shall be issued to an applicant after a finding **by the director or council...**” *Id.* This language demonstrates that the legislature could allow either the administrator or the Council to make findings if it had wanted. But the legislature chose not to put language in 406(n) that specified the Council.

Fishers’ position would also ask the Council to exceed its statutory authority. (*See* Brook Br. at 2-6.); *Amoco Prod. Co. v. State Bd. of Equalization*, 12 P.3d 668, 673 (Wyo. 2000) (explaining an agency’s power depends upon statutes, so “they must find within the statute warrant for the exercise of any authority which they claim.”) Under the Environmental Quality Act, the Council has authority to conduct contested cases about “the administration or enforcement of any law, rule, regulation, standard or order issued or administered by the department or any division thereof.” Wyo. Stat. Ann. § 35-11-112(a)(iii). This means the Council’s review is limited to what DEQ has administered; in other words, whether DEQ correctly deemed the permit application complete, without deficiencies, and suitable for

publication. (Brook Br. at 3-4.) This same logic means the Council does not consider section 406(n) because the DEQ administrator has not yet issued any findings under that section. (*Id.* at 4-5.)

Fishers, however, do not make any attempt to reconcile their arguments with relevant law. Instead, Fishers argue that the Council must consider section 406(n) because that is necessary to prove Brook has a complete application. (Fishers Br. at 1-3, 6-7.) This distorts how the permitting process works. The Environmental Quality Act defines a complete application as one that “contains all the essential and necessary elements and is acceptable for further review for substance and compliance with the provisions of this chapter.” Wyo. Stat. Ann. § 35-11-103(a)(xxii). DEQ has a duty to review an application for completeness before it reviews for deficiencies and before it deems the application suitable for publication. *Id.* at 406(e)-(f). Here, DEQ did that and after 6 rounds of comments and responses deemed Brook’s permit application without deficiencies and suitable for publication. No part of the Environmental Quality Act requires DEQ to make the 406(n) findings before Brook published its permit application. Instead, the Act only requires the administrator make the findings before a permit is issued. *See id.* at 406(n).

Even so, Brook agrees that the information and data in the permit application is necessary for the administrator to make the 406(n) findings. But that information alone is not sufficient to make the findings because DEQ must perform the cumulative hydrologic impact assessment and other analyses before it makes the 406(n) findings. *See* Wyo. Stat. Ann. § 35-11-406(n)(iii); Wyo. Admin. Code § ENV LQC Ch. 19 sec. 2; Wyo. Admin. Code § ENV LQC Ch. 12 § 1(a)(iv). Those assessments use information and data from the permit application along with internal DEQ information and data. The Council, however, does not have DEQ’s internal

information or data, or the statutory authority to conduct the required assessments, making Fishers' argument legally and practically impossible.

Fishers also contend that Brook attempts to duck some or all of the permitting requirements because DEQ's witnesses discussed technical adequacy. (Fishers Br. at 3-4.) This is just another attempt to manufacture support without facts. Brook has never claimed the phrase "technical adequacy" substitutes for the statutory and regulatory requirements. Instead, DEQ testified that technical adequacy is its way of describing the review to determine if a permit application is without deficiencies. DEQ's use of jargon does not change the statute or change that DEQ conducted the required review for deficiencies. It also does not provide a legal basis for the Council to conduct the 406(n) findings.

Fishers' lone legal support for any arguments comes from a quote in a United States Supreme Court case about the National Environmental Policy Act. (Fishers Br. at 5.) That case addresses a statutory requirement under federal law that has nothing to do with requirements under the Environmental Quality Act or its federal counterpart, SMCRA.

II. The public can still participate in the process if the Council does not make the 406(n) findings.

Fishers claim that the public may never have the chance to learn about the 406(n) findings or comment on them without the Council making the findings now. (Fishers' Br. at 5-6.) This wrongly implies Fishers or other objectors have no means to challenge DEQ's findings under 406(n). Any objector can appeal the Council's decision, including a decision not to make the 406(n) findings. Objectors can appeal the DEQ Director's decision to issue a permit to Brook. The objectors will also have access to DEQ's 406(n) findings and the cumulative hydrologic impact assessment because they will be publically available documents.

Even so, the public's right to participate in the permitting process is not unlimited. The Act sets out a single chance for the public to comment—after DEQ deems a permit suitable for publication. *See* Wyo. Stat. Ann. § 35-11-406(k). The Act does not give the public the right to comment or object at every stage of the process. The public does not even get the right to comment after DEQ deems a permit application complete and the applicant publishes notice. *Id.* at 406(g). While the Fishers may want more chances to comment, they do not have the statutory right or the due process right to do so. If the Fishers wish to change that, the legislature not the Council is the body who has the sole legal authority to help them.

CONCLUSION

The legislature chose not to include a hearing specific to 406(n) or state that the 406(n) findings must occur before the public comment process. Likewise, section 406 does not grant the Council authority to make these decisions or render a final decision. Fishers clearly dislike this reality and assert that the Council should find otherwise. But the Fishers have no law to support their claims and no logic to connect the sections of 406 and the statutes governing this Council's authority into a cohesive whole. As said at the start, the law matters. And it shows that Brook's reading of what the Council should decide is the most logical, coherent reading of all relevant statutes.

Brook requests the Council schedule oral argument on the parties' briefings relating to statutes and regulations the Council must consider.

DATED: June 30, 2017.



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CERTIFICATE OF SERVICE

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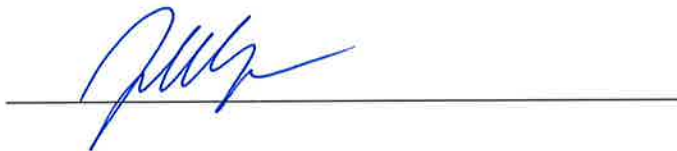
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While PRBRC argues otherwise, its arguments are long on assertions but short on proof. PRBRC fails to explain why the Council has the legal authority to make the findings under 406(n) or step into the place of the DEQ director. Although the Wyoming Supreme Court has not addressed the legal issues the Council asked the parties to brief, that does not mean the Council can ignore established legal principles even if PRBRC wants the Council to do so. The rules of statutory interpretation and the Council's limited authority constrain the Council's role here. (*See* Brook's Br. at 2-6.) By ignoring this settled law, PRBRC invites the Council to make two errors of law.

ARGUMENT

I. The plain language of Section 406(n) and this Council's limited review do not allow the Council to make the 406(n) findings.

Like a court, the Council must give a statute's words their plain meaning to find the "most likely, most reasonable, interpretation of the statute, given its design and purpose." *In the Interest of JB*, 2017 WY 26, ¶ 12, 390 P.3d 357, 360 (Wyo. 2017). But the Council cannot read words into the statute or render provisions meaningless. *City of Casper v. Holloway*, 2015 WY 93, ¶ 20, 354 P.3d 65, 71 (Wyo. 2015).

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Admin. Code § ENV LQC Ch. 12 § 1(a)(iv) (“In addition to the specific findings required by W.S. § 35-11-406(n), no permit shall be approved unless the administrator also finds in writing...”).

The Surface Mining Control and Reclamation Act (SMCRA) again provides a good foil to PRBRC’s position. Under SMCRA, the “regulatory authority” makes the findings for the federal counterpart of 406(n). *See* 30 U.S.C. § 1260(b). Here, the regulatory authority is DEQ; so having the DEQ administrator make the findings under 406(n) ensures Wyoming’s compliance with SMCRA.

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PRBRC’s position would also ask the Council to exceed its statutory authority. (Brook Br. at 2-6.); *Amoco Prod. Co. v. State Bd. of Equalization*, 12 P.3d 668, 673 (Wyo. 2000) (explaining an agency’s power depends upon statutes, so “they must find within the statute warrant for the exercise of any authority which they claim.”) Under the Environmental Quality Act, the Council has authority to conduct contested cases about “the administration or enforcement of any law, rule, regulation, standard or order issued or administered by the department or any division thereof.” Wyo. Stat. Ann. § 35-11-112(a)(iii). This means the Council’s review is limited to what DEQ has administered; in other words, whether DEQ correctly deemed the permit application complete, without deficiencies, and suitable for publication. (Brook Br. at 3-4.) This same logic means the Council does not consider section

406(n) because the DEQ administrator has not yet issued any findings under that section. (*Id.* at 4-5.)

Without any legal support, PRBRC claims the Council can bypass the plain language of 406(n) because the Council has authority to grant permits. (PRBRC Br. at 2.) This argument has two fatal flaws. First, the Council’s authority to grant a permit does not apply here. As Brook’s opening brief explained, the specific statutes that define the Council’s authority in a contested case and DEQ’s authority in the permitting process control over a general statute about granting permits. (Brook Br. at 5-6.)

Second, the statute that gives the Council authority to grant permits states the authority “is subject to applicable state law.” Wyo. Stat. Ann. § 35-11-112(c)(ii). The applicable state law here is section 406, which gives the administrator the authority to make the findings under 406(n). Likewise, the director has the power to issue permits. Wyo. Stat. Ann. § 35-11-406(p). So the applicable state law divests the Council of authority to grant permits governed by Section 406.

On a practical level this makes sense because the Council has a different role. In a contested case, the Council acts as a quasi-judicial body—not a regulator. *See Amoco Prod. Co. v. Dep’t of Revenue*, 2004 WY 89, ¶ 24, 94 P.3d 430, 441 (Wyo. 2004) (explaining the boards exercises quasi-judicial authority when deciding contested cases.) But if the Council makes the 406(n) findings, it becomes the regulator. This would prevent the Council from reviewing the regulator’s work thus undermining the Council’s purpose in a contested case. *See* Wyo. Stat. Ann. § 35-11-112(a)(iii).

PRBRC also asserts, without citing any legal support, that the Council must make the 406(n) findings to avoid the process becoming “meaningless.” (PRBRC Br. at 9.) This wrongly

implies PRBRC or other objectors have no means to challenge DEQ's findings under 406(n). PRBRC and any other objector can appeal the Council's decision, including a decision not to make the 406(n) findings. Objectors can appeal the DEQ Director's decision to issue a permit to Brook. The objectors will also have access to DEQ's 406(n) findings and the cumulative hydrologic impact assessment because they will be publically available documents.

Even so, PRBRC's assertion does not make sense. This process began because the objectors challenged DEQ's decision that Brook's permit application was suitable for publication. DEQ does not have to make the findings under 406(n) to deem a permit suitable for publication and did not here. *See* Wyo. Stat. Ann. § 35-11-406(a)-(h). To now inject 406(n) into the process is akin to allowing the public to allege deficiencies in Brook's permit application before DEQ has finished the completeness review to ensure the application has everything required. Neither approach makes practical sense.

PRBRC's approach also misses how section 406(n) functions in the larger scheme of the permitting process. Wyoming statutes and regulations require Brook's permit application to provide detailed information necessary for the administrator to make the 406(n) findings. But that information alone is not sufficient to make the findings because DEQ must perform the cumulative hydrologic impact assessment and other analyses before it makes the 406(n) findings. *See* Wyo. Stat. Ann. § 35-11-406(n)(iii); Wyo. Admin. Code § ENV LQC Ch. 19 sec. 2; Wyo. Admin. Code § ENV LQC Ch. 12 § 1(a)(iv). Those assessments use information and data from the permit application along with internal DEQ information and data. The Council, however,

does not have DEQ's internal information or data, or the statutory authority to conduct the required assessments, making PRBRC's argument legally and practically impossible.¹

The lone legal support PRBRC cites for the Council to make the 406(n) findings is *Grams v. Env't'l Quality Council*, 730 P.2d 784 (Wyo. 1986). (PRBRC Br. at 2.) But PRBRC has misled the Council about what the Wyoming Supreme Court held in *Grams*. *Grams* decided the following:

- the objectors received adequate notice of the contested case. 730 P.2d at 786-86;
- the Council correctly denied the objectors' request for a continuance. *Id.* at 788;
- the limits on objectors' discovery rights. *Id.*;
- the permit applicant's revisions to the application were not *ex parte* communications with DEQ. *Id.* at 789;
- the Council did not shift the burden of proof from the permit applicant. *Id.*; and
- the Council correctly decided the permit application was complete. *Id.* at 790.

The Council did find that the applicant had proven the elements of 406(n). *Id.* at 789. But the Supreme Court never held the Council must make the 406(n) findings.²

The *Grams* case still leaves the relevant law as the statute governing this Council's authority and the law for applying and interpreting statutes. That law leads to one outcome, the Council does not make the 406(n) findings.

¹ PRBRC suggests that the Council has to make these findings because no opportunity exists for DEQ to make them. (PRBRC Br. at 8.) But section 406(p) gives DEQ 15 days after the Council's decision to make the required findings under 406(n).

² It is unknown from the Supreme Court's opinion and the Council's order if DEQ issued a CHIA or the 406(n) findings before the permit application went to publication. (See Decision attached as Ex. 1)

II. The Council does not have the authority under Section 406(p) to “step into the place of the Director” and make a final decision on the permit application.

Section 406(p) states, “[i]f a hearing is held, the council shall issue findings of fact and a decision on the application within sixty (60) days after the final hearing. The director shall issue or deny the permit no later than fifteen (15) days from receipt of any findings of fact and decision of the environmental quality council.” Wyo. Stat. Ann. § 35-11-406(p). In deciding what this language means, the same rules described above apply. The Council must apply the plain language of the statute and avoid rendering provisions meaningless. *In the Interest of JB*, ¶ 12, 390 P.3d at 360; *Holloway*, ¶ 20, 354 P.3d at 71. The Council must also consider each statutory section *in pari materia* (sections with the same subject) giving effect to each “word, clause, and sentence according to their arrangement and connection.” *In the Interest of JB*, ¶ 12, 390 P.3d at 360.

These rules mean the phrase “decision on application” should be read together with the Council’s authority and the other parts of section 406. As Brook’s opening brief explains, the Council has the authority to review the laws and regulations DEQ has administered. (Brook Br. at 6-7.) To date, DEQ has decided only that Brook’s permit application was complete, without deficiency, and suitable for publication. Before a permit can issue, the remaining findings under section 406 fall to either the administrator or DEQ director. Wyo. Stat. Ann. § 35-11-406(m)-(n). And the DEQ director issues the permit. *Id.* at 406(p). Reading these provisions together means the Council’s “decision on the application” should decide if DEQ correctly determined the application was complete, without deficiency, and suitable for publication.

PRBRC, however, argues section 406(p) authorizes the Council to make a “final” decision on the permit application. (PRBRC Br. at 1-3.) This asks the Council to violate basic principles of statutory interpretation. To start, words and phrases key to PRBRC’s argument are

missing. The word “final” or anything similar do not appear in 406(p). The phrase “step into the place of” or anything similar also do not appear. So PRBRC asks the Council to insert words into the statute, something Wyoming law prohibits. *Holloway*, ¶ 20, 354 P.3d at 71. Likewise, the Council would have to make the 406(n) findings to render a final decision, which ignores the specific language of 406(n) that the administrator makes those findings and renders it meaningless in this case.³ *Id.* This leaves the only logical and legally permissible reading of “decision on the application” as a decision on whether Brook’s permit application was complete, without deficiencies, and suitable for publication.⁴

CONCLUSION

PRBRC’s brief relies on the faulty assumption that this hearing will decide all aspects of the permitting process. But no law supports that reading. The legislature chose not to include a hearing specific to 406(n) or state that the 406(n) findings must occur before the public comment process. Likewise, section 406 does not grant the Council authority to make these decisions or render a final decision. Should PRBRC or any objector wish to change that reality, they can do so through the legislature—not through the Council. Rather, the Council can exercise only the authority the legislature granted it. Here, that means reviewing whether DEQ correctly administered section 406(a)-(h) and its associated regulations.

³ PRBRC hints that DEQ cannot make the findings because Mr. Wendtland recused himself. (PRBRC Br. at 8.) This is nonsense. DEQ personnel testified that Alan Edwards serves as acting administrator for Brook’s permit application and can/will make the 406(n) findings.

⁴ PRBRC also claims in its list of applicable laws that the Council’s decision should include Wyo. Stat. Ann. §§ 35-11-415(b), 417(c). These claims require little discussion. Section 415 applies only if DEQ issued a permit. *Id.* at 415(a). Section 417 applies only before an operator begins mining, which requires a permit. So neither of these sections apply.

Brook requests the Council schedule oral argument on the parties' briefings relating to statutes and regulations the Council must consider.

DATED: June 30, 2017.



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Exhibit 1

BEFORE THE
ENVIRONMENTAL QUALITY COUNCIL
STATE OF WYOMING

FILED

NOV 19 1985

Terri A. Lorenzon, Adm. Aide
Environmental Quality Council

IN THE MATTER OF OBJECTIONS)
TO THE PERMIT APPLICATION OF)
AMAX COAL COMPANY, EAGLE BUTTE MINE,)
TFN 1 6/212)

FINDINGS OF FACT, CONCLUSIONS OF LAW AND ORDER GRANTING PERMIT

The application of Amax Coal Company for a surface coal mining permit and the objections thereto of LeRoy Grams and Mary H. Grams were considered by the Environmental Quality Council at a public meeting in Jackson, Wyoming, on September 30, 1985, following an evidentiary hearing held in Cheyenne, Wyoming, on August 28, 1985. Amax Coal Company appeared and was represented by Steven R. Youngbauer of Amax Coal Company. Mary H. Grams did not appear and was not represented at the hearing, and LeRoy Grams appeared pro se. The Land Quality Division of the Department of Environmental Quality appeared and was represented by Weldon S. Caldbeck, an Assistant Attorney General. Having considered the evidence presented at the hearing and the arguments of counsel, the Environmental Quality Council hereby finds and concludes as follows:

FINDINGS OF FACT

1. This proceeding arises from the application of Amax Coal Company, a division of Amax Incorporated (hereinafter "Amax"), to the Department of Environmental Quality, Land Quality Division, to obtain a permit to conduct surface coal mining activities.

2. The Eagle Butte Mine received a permit from the Land Quality Division in 1976. This permit application was submitted pursuant to Wyoming statutes and regulations that implement the Surface Mining Control and Reclamation Act, P.L. 95-87.

3. On May 21, 1985, the Land Quality Division, determined the Eagle Butte Mine application, assigned the temporary filing number TFN

1 6/212, is complete and suitable for final publication pursuant to W.S, 35-11-406(g).

4. LeRoy Grams and Mary H. Grams, received notice of the filing of the permit application pursuant to W.S. 35-11-406(g) and (j).

5. On August 6, 1985, the Land Quality Division received timely, written objections from the protestants LeRoy Grams and Mary H. Grams.

6. On August 20, 1985, Amax filed a Motion to Dismiss alleging that specified allegations in the protestants' petitions failed to state a claim upon which relief could be granted, and further stating that the Council lacked subject-matter jurisdiction over the issues raised.

7. Mary H. Grams is the owner of the surface estate of lands contiguous to the proposed mine permit area and water rights appurtenant to such lands (as described subsequently by the protestants' attorney), comprising the NW $\frac{1}{4}$ of Section 34, NE $\frac{1}{4}$ of Section 33 and the NE $\frac{1}{4}$ NW $\frac{1}{4}$ of Section 32, Township 51 North, Range 72 West, 6th P.M., Campbell County, Wyoming.

8. LeRoy Grams is the owner of all mineral rights underlying the lands owned by Mary H. Grams described in the above paragraph.

9. The protestant, Mary H. Grams, presented no evidence to substantiate allegations in her petition protesting the issuance of the mining permit to Amax Coal Company.

10. Evidence at the hearing demonstrated that the Eagle Butte Mine application does not request approval to mine the Little Rawhide Tract which was purchased in the 1982 coal lease sale held by the Department of Interior.

11. Evidence at the hearing demonstrated that access to the Grams' property will not be limited due to the mining operation, and a highway location project to which Mr. Grams objected, is a project of the Wyoming Highway Department and not Amax Coal Company.

12. The protestant, LeRoy Grams, produced no evidence on the issues raised in his petition alleging that:

A. The mining operation constitutes a public and private nuisance;

B. The coal company originally sought authorization for mining on an area and for a time in excess of that authorized by the Environmental Quality Act;

C. The application does not contain a map required by the Environmental Quality Act;

D. The reclamation plan did not comply with the Environmental Quality Act;

E. Amax Coal Company is in non-compliance with its current permit;

F. The present operation has lowered the groundwater on the Grams' property;

G. The issuance of this permit is contrary to the law and policy of the State of Wyoming and the United States;

H. Unidentified test holes were drilled beyond the terms of an exploration permit; and

I. No accommodation was made for private oil and gas leases or abandoned oil and gas wells.

13. Section 1.8 of the permit application contains a legal description of the permit area and this description does include the railroad to the point it splits to the Carter spur.

14. Section 1.10 of the permit application contains a demonstration that the current and proposed operation is in compliance with the Environmental Quality Act.

15. Section 2 of the permit application contains a general description of the area including a description of wildlife. No bald eagle roosts, bald eagle nests, or black-footed ferrets have been observed within or adjacent to the permit area by the U.S. Fish and Wildlife Service, wildlife consultants, or Amax Coal Company during studies conducted through 1985.

16. Neither the Amax Coal Company permit area nor the Grams' property contains habitat, such as Ponderosa Pine Hills or wooded riparian bottoms, suitable for bald eagle roosts.

17. Neither the Amax Coal Company permit area nor the Grams' property contains extensive colonies of burrowing animals, primarily prairie dogs, which are needed to support black-footed ferret populations.

18. Although bald eagles and golden eagles have been seen on the Grams' property and on the permit area, no evidence was produced indicating they roosted or nested in the area.

19. It is highly unlikely that black-footed ferrets live in the Eagle Butte Mine permit area or in the vicinity of the permit area.

20. Although drainage into a livestock reservoir on the Grams' property will be affected by the mining operation, much of the drainage area will remain intact.

21. The three (3) groundwater wells located on the Grams' property will not be significantly affected by the mining operation, and permit provisions for mitigation are sufficient for any unforeseen problems.

22. The reclamation plan will accomplish reclamation as required by the Environmental Quality Act.

23. The permit application contains a plan for special handling of acid and toxic materials to prevent contamination of ground or surface waters.

24. Eagle Butte Mine is grandfathered under W.S. 35-11-406(n)(v)(B) in regard to mining an alluvial valley floor.

25. All maps required by the Environmental Quality Act are included in the permit application.

26. Section 3.0 of the permit application contains a ground control plan that identifies a safe slope and benching conditions in order that the topographic surface beyond the affected area will not be in danger of collapse or nor will there be danger of interior collapse. There will be no lack of lateral and subjacent support for the Grams' property.

27. Amax Coal Company's mining operation will not mine around the Grams' property, thus, leaving that property with unreclaimed, vertical walls.

28. Section 3.8 of the permit application contains a blasting plan which insures that explosives will be used in accordance with existing state and federal laws. No blasting activities will occur within one half mile of the Grams' ranch buildings.

29. The proposed operation has been designed to prevent material damage to the hydrologic balance outside the permit area.

30. No prime farmland is included within the permit area.

CONCLUSIONS OF LAW

1. This proceeding is under the Wyoming Environmental Quality Act, W.S. 35-11-101 through 1207, 1977 as amended.

2. Statutory notice was given by the applicant, Amax Coal Company.

3. Actual and statutory notice of the application was received by the protestants.

4. As the Eagle Butte Mine application, TFN 1 6/212, does not request approval to mine the Little Rawhide Tract, which was issued in the 1982 coal lease sale held by the Department of Interior, allegations concerning the existing permit allegations that this permit application should be deemed incomplete because of the 1982 coal lease sale should be dismissed.

5. The protestants are not precluded by this order from seeking any relief from any state agency having jurisdiction in the event of future, adverse effects on groundwater underlying the Grams' property.

6. The protestants, LeRoy Grams and Mary H. Grams, have not met their burden of going forward with evidence to demonstrate this permit application is incomplete.

7. Amax Coal Company has met its burden of proof demonstrating that the Eagle Butte Mine is in compliance with W.S. 35-11-406(n), and all other applicable state laws.

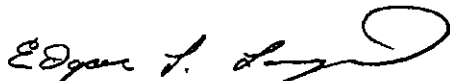
ORDER

IT IS HEREBY ORDERED THAT:

1. Allegations IV, V, VI, VII, VIII, X, XIV, and XV of the objections of LeRoy Grams, and allegations IV, V, VI, VII, and VIII of the objections of Mary H. Grams, are hereby dismissed; and

2. The permit to mine shall be granted pursuant to W.S. 35-11-406(p).

DATED this 19th day of November, 1985.



Edgar L. Langrand
Hearing Examiner

Brook objects to PRBRC's request to delay argument until the August meeting and the corresponding delay in deciding this case. The Council has 60 days "after the final hearing" to issue findings of fact and conclusions of law. Wyo. Stat. Ann. § 35-11-406(p). The final hearing has taken place, and the 60 days have begun. PRBRC's request is a delay tactic that continues its efforts to delay the process. Should the Council wish to hear oral argument, that can be accomplished next week. Brook will be available to appear in person or by phone.

DATED: June 30, 2017.



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Subject: Big Horn Coal Company's Reply Brief Regarding the Scope of the Environmental Quality Council's Review
Date: Friday, June 30, 2017 4:02:56 PM
Attachments: [BHC S REPLY BRIEF REGARDING THE SCOPE OF THE EQC'S REVIEW.PDF](#)

Please find attached *Big Horn Coal Company's Reply Brief Regarding the Scope of the Environmental Quality Council's Review*. This document was filed with the EQC this afternoon.

Thank you,
Jenny



Jenny Wacker

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**BEFORE THE ENVIRONMENTAL QUALITY COUNCIL
STATE OF WYOMING**

IN RE BROOK MINE APPLICATION)
	) Docket Nos. 17-4802, 17-
	) 4803, and 17-4804
TFN 6 2-025	) (Consolidated)

**BIG HORN COAL COMPANY’S REPLY BRIEF REGARDING THE
SCOPE OF THE ENVIRONMENTAL QUALITY COUNCIL’S REVIEW**

Pursuant to the Environmental Quality Council’s (“EQC”) Briefing Order, dated June 13, 2017, Big Horn Coal Company (“Big Horn”), by and through its undersigned counsel of record, hereby submits this reply brief as to the legal parameters governing the EQC’s review in this matter, as well as the appropriate burden of proof standard.¹

¹ Though technically a response brief, this brief is denoted as a reply, which corresponds to the term used in the EQC’s June 13th Order.

INTRODUCTION

Big Horn presents this reply in response to the arguments and positions posited by the Wyoming Department of Environmental Quality (“DEQ”) and Brook Mining Company, LLC (“Brook Mine”).

DEQ and Brook Mine have incorrectly argued that the EQC should not consider the requirements from subsection (n) of Wyo. Stat. Ann. § 35-11-406 (sometimes referred to herein as “Section 406”) in reaching its decision in this matter, but rather only review and make a determination as to whether Brook Mine’s permit application is sufficiently complete and suitable for publication. In asserting this position, both DEQ and Brook Mine rely on that fact that Section 406(n) requires its specific findings be made by the Land Quality Division Administrator (the “Administrator”), not the EQC. Brook Mine also makes its argument in heavy reliance on its position that the EQC can only review prior actions of DEQ, and since no permit has been issued or denied, this contested case hearing does not implicate the EQC’s authority to “[c]onduct hearings in any case contesting the grant, denial, suspension, revocation or renewal of any permit, . . . authorized or required by [the Environmental Quality Act.]” Wyo. Stat. Ann. § 35-11-112(a)(iv).

The positions asserted by DEQ and Brook Mine, however, neglect to consider the plain language of Section 406 and relevant case law as to the appropriate framework of the EQC’s decision. Section 406(p), the final subsection of Section 406, specifically requires this contested case to culminate with the EQC

issuing “a decision on the permit[.]” *Id.* at -406(p). Moreover, the case of *Grams v. Environmental Quality Council*, 730 P.2d 784 (Wyo. 1986), clearly demonstrates that the EQC is to direct the DEQ in its decision on the permit application, and that the EQC must consider Section 406(n) in directing the DEQ towards its findings and eventual issuance or denial of the requested permit.

For the reasons stated in Big Horn’s brief submitted to the EQC on June 26, 2017, and the reasons stated herein, the EQC must consider the requirements of Section 406(n) in its decision regarding these contested case proceedings.

ARGUMENT

I. Section 406 and Relevant Wyoming Case Law Make Clear the EQC’s Responsibility to Consider Section 406(n).

As all parties appear to agree, Section 406 governs both the process of filing an application for surface coal mining as well as the governing requirements for its eventual issuance or denial. All parties appear to further agree on the role and applicability of subsections (a) through (j).² The disagreement pertains to the role of the EQC in presiding over a contested case hearing contemplated by Section 406(k) and the applicability of the requirements found in Section 406(n) to the EQC’s decision in this matter.

² To be clear, no party appears to disagree with the proposition that the EQC is to evaluate Brook Mine’s permit application in light of the applicable permit requirements in Section 406(a)-(h) as well as the related DEQ Rules and Regulations pertaining to permit requirements.

Section 406 is clear. After a surface coal mining permit application is deemed complete and suitable for publication pursuant to Section 406(h) and publication is made pursuant to Section 406(j), interested persons are given the opportunity to object to “the application.” Wyo. Stat. Ann. § 35-11-406(h) – (k). These objections to “the application” are then heard either in an informal conference by the DEQ or a contested case hearing. These proceedings will result in either DEQ “tak[ing] action on the application” after an informal conference, or the EQC “issu[ing] findings of fact and ***a decision on the application***” after a contested case hearing before the EQC. *Id.* at -406(k), (p) (emphasis added). Nowhere does Section 406 indicate that either form of review is based solely on whether the permit application is complete and suitable for publication, nor does any provision of Section 406 limit objections or the EQC’s resulting review to certain portions of the statute. Rather, the language clearly mandates that in a contested case hearing such as this, the EQC must “issue a decision on the permit,” which must direct the DEQ’s issuance or denial of the permit. *Id.* at -406(p).

In support of their position, DEQ and Brook rely on: (1) the linear progression of Section 406, specifically relying on the fact that 406(n) comes after Section 406(k)’s contemplation of a contested case hearing; and (2) the fact that Section 406(n)’s required findings (which have not been made) must be made by the Administrator, not the EQC. These arguments misconstrue the clear requirements and procedure of Section 406.

It is true that Section 406 proceeds in a linear and step by step fashion. In fact, the statute governs Brook Mine's permit application from its initiation to its eventual issuance or denial. *See id.* at -406(a) – (p). However, the fact that subsection (n) comes after subsection (k) does not mean that Section 406(n) is inapplicable to this contested case hearing. Following DEQ and Brook Mine's argument, it cannot be overlooked that subsection (p), which comes after subsection (n), provides that the EQC's statutory duty following the contested case hearing is to ***issue a decision*** on the application. Section 406(p) is the very last subsection of Section 406 and the culmination of the permit application process resulting in either the permit's issuance or denial. It is axiomatic, then, that the EQC's decision on the permit must pertain to the application's eventual issuance or denial and the EQC must consider all of the legal requirements and burdens placed on Brook Mine in its quest to have its permit application granted.

Pursuant to Section 406(k), objections to a surface coal mining permit can lead to either an informal conference or contested case hearing, which then will result in a decision on the application. *Id.* at -406(k),(p). The provisions following Section 406(k) provide the applicable criteria in the contested case or informal conference and direct the outcome of these proceedings, i.e., the decision regarding the approval or denial the permit application. For a surface coal mining permit application such as this, Section 406(n) specifically provides a portion of this criteria

and the EQC must consider it in reaching its “decision on the application[.]”³ *Id.* at -406(n),(p). This is only further supported by the fact that DEQ must “issue or deny the permit” within fifteen (15) days of the EQC’s decision on the application. *Id.* at -406(p).

Notwithstanding that the DEQ must actually issue any permit and the Administrator must make the required written findings under Section 406(n), in the event of a contested case hearing, this decision and these findings must be made at the direction of the EQC and pursuant to the EQC’s “decision on the application[.]” *See id.* at -406(p). This is the exact procedure outlined by the Wyoming Supreme Court in *Grams*, 730 P.2d at 786-89 (outlining the process leading to contested case hearings under Section 406 and stating that the EQC directed the DEQ as to whether to issue the requested permit after the EQC considered whether the permit applicant met its burden to establish that its application was in “compliance with W.S. § 35-11-406(n) and all other applicable state laws”).

Critical for the EQC’s consideration, in arguing for the purported limitations on the scope of EQC’s review in this matter, neither DEQ nor Brook Mine present any authority or precedent showing similar proceedings in which the EQC’s review

³ In applying Section 406(n), the EQC is inherently tasked with reviewing all permit requirements as Section 406(n) requires the applicant to establish that the application is “in compliance with [the Environmental Quality Act] and all applicable state laws” and is “accurate and complete[.]” Wyo. Stat. Ann. § 35-11-406(n).

was limited in the manner they assert, or in which the EQC's decision resulted in anything other than a directive to the DEQ regarding permit issuance after consideration of Section 406(n). As noted, *Grams* stands in opposition to this argument. *Id.*; see also *Pfeil v. Amex Coal West, Inc.*, 908 P.2d 956, 959 (outlining the same process under Section 406, but in the context of a revision to a mine permit, and noting that after hearing the EQC issued a decision on whether to grant the permit revision).

Therefore, in conducting this contested case hearing and issuing its decision, the EQC must consider the specific requirements of Section 406(n), and all laws and regulations incorporated therein. The DEQ must then ultimately issue or deny the permit and make the Section 406(n) findings in writing at the direction of and pursuant to the EQC's decision.

II. The EQC's Delegated Authority allows it to hear this Case Contesting the Grant of Brook Mine's Permit Application.

The EQC's delegated powers and functions under Wyo. Stat. Ann. § 35-11-112 allow it to "[c]onduct hearings in any case contesting the grant, denial, suspension, revocation or renewal of any permit, . . . authorized or required by [the Environmental Quality Act.]" *Id.* at -112(a)(iv).

The EQC's power to conduct hearings contesting the grant or denial of a permit application does not require that a permit application have been previously denied or approved by the DEQ. Rather, the statute simply requires a hearing

“contesting the grant, [or] denial” of a permit “authorized or required” by the Environmental Quality Act. This is exactly the issue before the EQC in this matter. Under the Environmental Quality Act, a permit is “required” before Brook Mine can conduct its proposed coal mining operations.⁴ Brook Mine has submitted a permit application that it seeks to have approved, and interested parties have filed objections and provided evidence at the contested case hearing citing deficiencies and thus contesting the grant of the permit application in its current condition.

CONCLUSION

In sum, although the Administrator must make the required written findings from Section 406(n) and DEQ must issue or deny the permit application, in the case of a contested case proceeding before the EQC such as this, these requirements are made at the directive of the EQC. The form and structure of Section 406 clearly outlines the process of an application for surface coal mining operations. When objections to the permit application are raised, Section 406(k) requires that either an

⁴ In its principle brief, Brook Mine argues that the terms used in Wyo. Stat. Ann. § 35-11-112(a) such as “issued or administered by” refer to prior actions by arguing that the words “issued” and “administered” are past tense forms of the underlying term. To the extent that Brook Mine would argue this same position regarding section -112(a)(iv)’s use of “authorized or required by this act” and argue that section -112(a)(iv) only applies to a hearing concerning previously granted or denied permits, this argument fails. The form of the words “authorized” and “required” do not refer to the past tense of the words “authorize” and “require.” Rather, the language of the statute clearly demonstrates that they simply refer to the fact that the relevant authorization or requirement stems from the Environmental Quality Act.

informal conference or contested case hearing must occur. In either event, the remaining portions of Section 406 clearly indicate that in either of these proceedings will result in the ultimate decision as to the issuance or denial of the permit and provide for the criteria in making this decision. *See* Wyo. Stat. Ann. § 35-11-406(k) – (p). As a contested case hearing before the EQC regarding an application for surface coal mining operations, it is the role of the EQC to review Section 406(n) and issue a decision on the application. Then, pursuant to the direction of the EQC's decision, the DEQ must perform its duties to either issue or deny the permit within fifteen (15) days and issue any required Section 406(n) findings in writing. This process and procedure is in complete accord with not only Section 406, but also relevant case law and the statutory powers and duties of the EQC.

Finally, Brook Mine admits that it bears the burden of proof in this matter and acknowledges that the EQC may independently weigh the evidence presented without particular deference to DEQ's positions. *See Brook Mine's Brief on Statutes and Regulations that the Council must Consider*, p. 10.

For the reasons stated herein, and those presented in Big Horn's principle brief addressing this topic, the EQC should reject the limited review asserted by DEQ and Brook Mine.

[Signature page to follow.]

DATED: June 30, 2017.

/s/Clayton Gregersen

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Subject: RE: Fishers" 406(n) Reply Brief
Date: Friday, June 30, 2017 3:35:26 PM
Attachments: [Fisher Reply Subsection N.pdf](#)

Dear All: Attached is the Fishers' Reply Brief

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**BEFORE THE ENVIRONMENTAL QUALITY COUNCIL
STATE OF WYOMING**

IN RE BROOK MINE APPLICATION)	
	)	DOCKET 17-4802
TFN 6 2-025)	
)	

**OBJECTOR FISHERS' REPLY BRIEF ON THE APPLICATION OF
WYOMING STATUTE §35-11-406(n)**

Objectors Mary Brezik-Fisher and David Fisher, through their undersigned attorney Jay A. Gilbertz, of Yonkee & Toner, LLP, hereby file this reply brief addressing the application of Wyoming Statute §35-11-406(n) to these proceedings.

In large measure, the briefing filed by DEQ and Brook Mine focuses on the assertion that the EQC does not have the authority to make the *final* findings that Brook has proven compliance with the requirements of §35-11-406(n). This contention misses the point. The point is that Brook's application for a coal mining permit is not meaningfully complete unless it contains and affirmatively demonstrates that the requirements of subsection (n) have been satisfied. Without this information and proof set forth in the application, the application is incomplete and deficient. After all, without this necessary information, what would the Director base his decision on?


Evidently, Brook seeks to proceed with issuance of a permit without demonstrating that it has supplied the required affirmative proof of compliance with subsection (n) in the hope that the permit will be granted anyway. If it could accomplish this legally improper result then it will inappropriately flip the burden of proof to the public as was described in the Fishers' primary brief. Indeed, Brook goes even further in its brief on page 5, stating "The DEQ administrator has not yet issued any findings under 406(n) because DEQ has not conducted the cumulative hydrologic impact assessment (CHIA) **that allows the administrator to make findings under section 406(n)(iii).**" (emphasis added). This statement demonstrates that Brook's position is that it is somehow the obligation of DEQ to prove (through the CHIA) that Brook will not impact the hydrologic balance. This is not the case at all. Subsection 406(n) is clear that it is Brook which must affirmatively demonstrate that its mining will not negatively impact the hydrology. The CHIA performed by DEQ is only to confirm that DEQ agrees with the proof submitted by Brook.

The briefing submitted by DEQ and Brook warrant no further response or comment.

WHEREFORE, the Fishers request that the EQC find and hold that the requirements of §35-11-406(n) are substantive requirements of the Wyoming Environmental Quality Act and a coal mining applicant must prove its mining activities will be in compliance with these provisions as part of its permit application.

DATED this 30th day of June, 2017.

YONKEE & TONER, LLP



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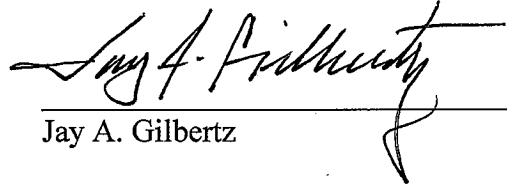
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Subject: Reply Brief
Date: Friday, June 30, 2017 2:58:22 PM
Attachments: [2017 6-30 request to EOC.pdf](#)
[2017 6-30 reply brief on 406n.pdf](#)

Dear Counsel:

Please see the attached filed today.

I wish everyone a wonderful holiday weekend.

Shannon

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**BEFORE THE ENVIRONMENTAL QUALITY COUNCIL
STATE OF WYOMING**

IN RE BROOK MINE APPLICATION)	
)	
TFN 6 2-025	)	DOCKET 17-4802

REQUEST TO THE ENVIRONMENTAL QUALITY COUNCIL

After reviewing the parties' briefs, it is clear that there is great dispute on the applicability of Section 406(n). Since Section 406(n) is a significant part of the law, and whether it applies will greatly affect what findings of fact or conclusions of law must be made by the Council, the Powder River Basin Resource Council ("Resource Council") asks the Council to resolve the issue before the parties are ordered to submit post-hearing briefs with written closing arguments and proposed findings of fact and conclusions of law.

Furthermore, the Resource Council believes that this decision must be made by the full Council, not just the Hearing Officer, and as such, a public deliberation of the decision should be made at a forthcoming open meeting of the Council. The Resource Council has requested oral argument on the applicability of Section 406(n) and other issues of dispute among the parties, and offers that this oral argument could be held at that same meeting.

While this may create some additional time for the decision-making process, it seems necessary given the significance of the dispute between the parties. Moreover, this is a dispute created by DEQ and the permit applicant, not the Resource Council.

denied by the DEQ. Resource Council Br. at 1-2. However, also as discussed, under Section 406(p), that decision is only made *after* and *pursuant to* the Council’s “decision on the application.” *Id.* at 2. In other words, the decision to be made by the Council is a decision to instruct DEQ to issue or deny the permit, and if to issue it, under what conditions.

The Resource Council’s interpretation is consistent with EQC precedent, a Wyoming Supreme Court decision, and the plain language of Section 406(p). DEQ and Brook’s interpretations are consistent with none of this authority.

First, EQC precedent demonstrates that the Council’s role is to instruct DEQ to issue or deny the permit. In two cases in 1985, the Council held hearings on coal mine permit applications after objections were raised. *In the Matter of the Objections to the Permit Application of Fort Union Mine Partners (TFN 1 6/215)*, Findings of Fact, Conclusions of Law and Order, Mar. 8, 1985; *In the Matter of Objections to the Permit Application of Amax Coal Company, Eagle Butte Mine (TFN 1 6/212)*, Findings of Fact, Conclusions of Law and Order Granting Permit, Nov. 19, 1985.¹ In both decisions, the Council based its decision on Section 406(p) and Section 112(c)(ii), which provides that the Council has the power to “Order that any permit, license, certification or variance be granted, denied, suspended, revoked or modified.” W.S. § 35-11-112(c)(ii).² The Council’s decision was to order that the permits be granted.

¹ While there have been several other contested case hearings on new coal mine permit applications, or on renewals or amendments to coal mine permit applications (which also fall under Sections 406(k) and 406(p)), from a review of the EQC website, many of those cases were dismissed and/or settled so there are no final decisions from the Council available. Additionally, documents from some of the earlier cases are not available on the website and were unable to be reviewed by the Resource Council in the time allotted for this brief. However, if necessary, the EQC staff could work with the Council to review the archived files for consistency in precedent.

² Brook argues that the Council’s authority comes from Section 112(a). Brook Br. at 2-3. However, that is only true if there is not additional, and in this case more specific, authority for the Council’s hearing and decision, as there is here with Sections 406(k) and 406(p). Brook also

The Amax case was then appealed to the Wyoming Supreme Court. In its decision, the Supreme Court affirmed the EQC decision. *See Grams v. Env't'l Quality Council*, 730 P.2d 784, 786 (Wyo. 1986) (“On November 19, 1985, the EQC entered its order directing the LQD to issue a mining permit to AMAX.”).

In other words, EQC precedent, as affirmed by the Wyoming Supreme Court, demonstrates that the EQC’s “decision on the application” under Section 406(p) is not to merely determine whether the application is “complete” or “suitable for publication” or make other findings that are applicable at earlier stages in the permitting process, as DEQ and the permit applicant argue.³

Finally, a plain reading of Section 406(p) dictates that the Council makes the “decision on the application,” which is the *same* decision under the section the DEQ Director would make if an informal conference was held or if no informal conference or hearing was requested. Additionally, the section specifies that the DEQ action to issue or deny the permit is made a mere fifteen days after the decision of the Council, evidencing that the DEQ action is simply following through on the Council’s decision, not making a new decision on different or additional grounds, a decision that would almost certainly require time beyond fifteen days.

provides a passing cite to Section 112(b)(ii), which does not exist. This is likely a typo for Section 112(c)(ii), but the brief does not cite or explain that text in that location. Later, Brook tries to discount Section 112(c)(ii) by claiming that Section 112(a) controls because it is more “specific.” However, Section 406(p) is actually more specific and controls over the more general authority of Section 112(a), and 406(p) instructs that Section 112(c)(ii) applies. Additionally, Brook says Section 112(c)(ii) gives the Council “authority to grant or deny permits,” which misses the point, because the authority is to *order* that a permit be granted or denied, with the ultimate grant or denial still being a DEQ decision, as Section 406(p) specifies.

³ Although there was testimony as to the “technically adequate” or “technically accurate” determination by DEQ, these phrases do not appear in the Environmental Quality Act. The correct phrase is “suitable for publication.”

APPLICABILITY OF SECTION 406(n)⁴

Brook and DEQ's mischaracterization of the Council's decision colors their misinterpretation of whether Section 406(n) applies. They also raise other arguments, which equally fail.

First, they argue that the statute is laid out in chronological order and since (n) follows (k), and since, according to them, (k) governs here, (n) cannot yet apply. Brook Br. at 6-8 ("This sequence and structure suggests that the Council should review only what led DEQ to deem Brook's permit application suitable for publication"; "In the structure of the statute, the required findings under section 406(n) come after DEQ deems a permit application suitable for publication and after an informal conference or public hearing has taken place."); DEQ Br. at 3-4 ("The statute is laid out in a specific order and the Department takes steps in accordance with that order."; "In accordance with the order in which the statute is laid out, Wyoming Statute §35-11-406(n) only comes into play *after* the Director or the Council resolve the objections to the permit application." (emphasis in original)). However, as discussed above, Section 406(p) controls the scope of the EQC's decision after a contested case hearing is held, not 406(k). As such, applying their rationale would *necessarily* dictate that that the findings of 406(n) occur *before* the decision in 406(p) based on the sequence of the statute.

Second, DEQ and Brook argue that the Council cannot apply Section 406(n) because the "administrator" makes the findings under 406(n)(i)-(vii). Brook Br. at 8; DEQ Br. at 7. These arguments miss the point that the 406(n) findings must be made *prior* to "a decision on the application" – the very decision that the Council must make in this case. All parties agree that a

⁴ While there were minor disagreements between the parties on what statutory sections and regulations apply beyond Section 406(n), the bulk of the disagreement is over Section 406(n) and therefore this reply focuses there. The other disagreements will likely be covered in the Resource Council's forthcoming proposed findings of fact and conclusions of law.

“decision on the application” cannot be made without first determining whether the requirements of Section 406(n) have been met and all parties agree that these findings have not yet been made. Additionally, the DEQ and Brook’s argument ignores past Council precedent where the Council applied Section 406(n). For instance, in the Amax case discussed above, the Council found that “Amax Coal Company has met its burden of proof demonstrating that the Eagle Butte Mine is in compliance with W.S. 35-11-406(n), and all other applicable state laws.” *In the Matter of Objections to the Permit Application of Amax Coal Company*, Findings of Fact, Conclusions of Law and Order Granting Permit, at 6. More specifically, the Council issued findings of fact that quoted 406(n)(ii) and 406(n)(iii) verbatim, clearly evidencing that the Council made findings pursuant to 406(n) as part of its decision.⁵ *Id.* at 4-5.⁶

Third, DEQ and Brook are fixated on the fact that the cumulative hydrologic impact assessment (“CHIA”) has not been finalized at this time and argue that this prevents applying 406(n) to this proceeding. DEQ Br. at 4; Brook Br. at 8-9. Irrespective of the fact that testimony at the hearing showed that a CHIA is normally finalized before a public hearing, this is also a self-flawed argument as they previously argued that the “administrator” must make the findings of 406(n) and yet the CHIA is a document issued by the DEQ Director *and* the State Engineer⁷ – not the administrator or even the DEQ exclusively. Thus, under their own logic, the CHIA cannot be a “finding” under Section 406(n) because it is not a finding made by the administrator.

⁵ The findings were that “The reclamation plan will accomplish reclamation as required by the Environmental Quality Act” and that “The proposed operation has been designed to prevent material damage to the hydrologic balance outside the permit area.”

⁶ The EQC also made findings related to alluvial valley floors and prime farmland, finding that those sections of 406(n) did not apply.

⁷ See POW Exhibit 24 at 3 (“The final CHIA must be signed by the DEQ Director and the Wyoming State Engineer prior to issuance of the permit.”).

More importantly, as discussed in the Resource Council’s opening brief, the CHIA is a document separate from the permit application, and it does not abdicate the need for considering whether the permit applicant has met its burden to demonstrate that the requirements of Section 406(n) are met at this time. Resource Council Br. at 8-9.⁸

STANDARD OF REVIEW & BURDEN OF PROOF

There is no dispute that the permit applicant bears the burden of proof in this proceeding. *See* Brook Br. at 10. There is naturally some dispute about what the permit applicant must prove given the disagreements discussed above, but if 406(p) applies – as it clearly does – Brook’s burden *must* be to demonstrate that it complies with all applicable laws and regulations, and that its permit application does not have any deficiencies, and therefore that the Council can make “a decision on the application” to order the DEQ to grant the permit.⁹ This interpretation is fully consistent with section 406(n) and Wyoming Supreme Court precedent. *Grams*, 730 P.2d at 789 (citing Section 406(n) and holding “the burden of proof rests upon the applicant to show that the application is in compliance with applicable law.”).

CONCLUSION

Section 406(p) dictates that once there is a hearing before the Council, it is the Council that makes the “decision on the application,” not the DEQ. Thus, there is no later opportunity for the DEQ to review the permit’s compliance with Section 406(n). Compliance with Section 406(n) must be done now, as part of the Council’s “decision on the application.”

⁸ Brook (but not DEQ) also argues that SMCRA’s federal minimum standards requirement provides additional authority for its argument. Brook Br. at 8-9. It is interesting that now the company finds SMCRA’s provisions relevant when in past aspects of this hearing process, the company has argued that they are irrelevant. Nevertheless, this argument should be summarily dismissed because for purposes of the Wyoming state SMCRA program, approved by OSMRE, the EQC clearly has an important role, both in rulemaking and in contested case hearings.

⁹ The Resource Council’s forthcoming proposed findings of fact and conclusions of law will demonstrate this is not the case.

Alternatively, should the Council determine that the administrator (or a substitute DEQ staff member because of the conflict of interest) must make the findings of 406(n), the Council must hold that since these findings are not yet made, and since they must be made before a “decision on the application,” the application should be denied. Similarly, if the CHIA is a necessary component to making the findings, since the CHIA is not yet complete, the application should be denied because “a decision on the application” cannot be made.

Either way, Section 406(n) and the findings required by that section cannot be ignored in these proceedings.

Dated this 30th day of June, 2017.

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CERTIFICATE OF SERVICE

I hereby certify that on June 30, 2017, I served a copy of the foregoing **REPLY BRIEF** on the following parties by electronic mail, and through the EQC's electronic filing system, which will send a notice of electronic filing to all counsel and parties of record.

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Respectfully submitted this 30th day of June, 2017.

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Subject: Brook Mine, LLC - Vol. VI (and 1 other transcript) - E-Transcript File Delivery
Date: Friday, June 30, 2017 1:36:29 PM
Attachments: [Brook Mine, LLC - Vol. VI.ptx](#)
[Brook Mine, LLC - Vol. VII.ptx](#)
[060717 EQC brook mine vol. VI.pdf](#)
[060817.pdf](#)

Please find attached the last two volumes of the Brook Mine hearing.

Thank you,

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BEFORE THE ENVIRONMENTAL QUALITY COUNCIL

STATE OF WYOMING

IN RE BROOK MINE APPLICATION Docket No. 17-4802

TRANSCRIPT OF HEARING PROCEEDINGS

VOLUME VI

PURSUANT TO NOTICE duly given to all parties
in interest, this matter reconvened for hearing on the
7th day of June, 2017, at the approximate hour of
9:04 a.m., at the Wyoming Game & Fish, Elk Room, 5500
Bishop Boulevard, Cheyenne, Wyoming, before the Wyoming
Environmental Quality Council, with Chairman David Bagley,
presiding, and Council Member Nick Agopian in attendance.
Mr. Ryan Schelhaas, Wyoming Attorney General's
Office, Attorney for the Council; Mr. Jim Ruby, Executive
Director to the Council; Mr. Joe Girardin, Business Office
Coordinator, were also in attendance.

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A P P E A R A N C E S

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1 P R O C E E D I N G S

2 (Hearing proceedings reconvened

3 9:04 a.m., June 7, 2017.)

4 CHAIRMAN BAGLEY: All right. Good morning.

5 It's 9:04 a.m., June 7, 2017. I'm Dr. David Bagley, the
6 hearing officer in Docket 17-4802 in regards to Brook Mine,
7 LLC. Present today from the council are Nick Agopian and
8 myself. Council members Fairservis and Degenfelder have
9 recused themselves.

10 Parties present today and I'll do like we did
11 before, I'll mention the party name and please ask you to
12 identify yourself because I know there's been some changing
13 names.

14 Parties present today are Brook Mine, LLC.

15 Please introduce yourself.

16 MR. POPE: Jeff Pope, Thomas Sansonetti,
17 Isaac Sutphin in spirit, and Carri Svec from Holland & Hart
18 on behalf of Brook Mine.

19 COUNCIL MEMBER AGOPIAN: Something happen
20 to Isaac?

21 MR. POPE: He's in Italy.

22 COUNCIL MEMBER AGOPIAN: Oh, no. I meant
23 the "in spirit."

24 MR. RUBY: He's still alive.

25 MS. ANDERSON: That would be the Italian

1 spirit.

2 CHAIRMAN BAGLEY: Department of
3 Environmental Quality.

4 MR. LaROCK: Andrew Kuhlmann and James
5 LaRock, the Department of Environmental Quality.

6 CHAIRMAN BAGLEY: Powder River Basin
7 Resource Council.

8 MS. ANDERSON: Hi. Good morning. Shannon
9 Anderson on behalf of Powder River Basin Resource Council.
10 I have with me today our director, Jill Morrison, and our
11 expert witnesses, Dr. Jerry Marino and Mr. Mike Wireman.

12 CHAIRMAN BAGLEY: Thank you.

13 The Fishers.

14 MR. GILBERTZ: Jay Gilbertz from Yonkee &
15 Toner on behalf of the Fishers, along with Mary Fisher.

16 CHAIRMAN BAGLEY: Thank you.

17 And Big Horn Coal.

18 MS. BOOMGAARDEN: Good morning. Lynn
19 Boomgaarden, Crowley Fleck, on behalf Big Horn Coal. And
20 with me today is Mr. Jordan Sweeney.

21 CHAIRMAN BAGLEY: Thank you.

22 Also present for the council are Jim Ruby,
23 Executive Officer; and Joe Girardin, Council Business
24 Coordinator; and Ryan Schelhaas from the Attorney General's
25 Office.

1 This hearing is being held in the Elk Room, Game
2 & Fish Commission, 5400 Bishop Boulevard, Cheyenne,
3 Wyoming. There is a court reporter present.

4 So we have set aside these last two days, today
5 and tomorrow, to finish up this final hearing. And we
6 are -- we are not able to go past 5 p.m. either day.
7 And -- but we will start tomorrow again at 8:30, if we are
8 still here tomorrow. So we will be done no later than
9 5 p.m., June 8, 2017. So I'm saying that, urging everyone
10 to be judicious in their questioning. We certainly want to
11 hear all the questions, but we will so appreciate everybody
12 getting to the point that you can with each and every
13 witness.

14 All right. I guess we're now ready to go. So
15 it's my understanding that Powder River Basin Resource
16 Council has two expert witnesses --

17 MS. ANDERSON: I do, Dr. Bagley.

18 CHAIRMAN BAGLEY: -- that you'd like to
19 call.

20 And so, please, Ms. Anderson, call your first
21 witness.

22 MS. ANDERSON: Thank you, Dr. Bagley.

23 I call Dr. Gennaro Marino.

24 (Witness sworn.)

25

1 GENNARO GERALD MARINO, PhD, PE, DGE,
2 called for examination by PRBRC, being first duly sworn,
3 testified as follows:

4 DIRECT EXAMINATION

5 Q. (BY MS. ANDERSON) Dr. Marino, could you please
6 state and spell your full name for the record.

7 A. It's Gennaro Gerald Marino, G-E-N-N-A-R-O,
8 Gerald, G-E-R-A-L-D, Marino, M-A-R-I-N-O.

9 Q. Okay. And you go by Jerry with a J, right?

10 A. Yes. Not G.

11 Q. Not G.

12 Okay. Thank you, Dr. Marino.

13 What is your title or position?

14 A. I have a geotechnical engineering company. We
15 are about 12 or 14 people, composed of engineers and
16 technicians and administrative staff. I'm the president
17 and also the chief engineer of the company.

18 Q. And what do you do in your capacity as president
19 of Marino Engineering Associates?

20 A. I basically oversee the organization. One of my
21 I think most important duties is to -- is in
22 qualification. In other words, quality control of reports
23 that go out from the company. I also get involved in
24 individual projects that interest me. You know, obviously
25 that's -- as president, you're also involved in taking

1 care of our big family, you know.

2 Q. Okay. Thank you.

3 Are you a registered professional engineer in
4 Wyoming?

5 A. Yes.

6 Q. And other states as well?

7 A. Yes.

8 Q. I have up on the screen POW Exhibit 18. Did you
9 provide this copy of your CV to me?

10 A. Yes.

11 Q. And is it an accurate reflection of your
12 background and qualifications?

13 A. Yes.

14 Q. Could you tell us a bit about your educational
15 background?

16 A. I received a bachelor's of science in civil
17 engineering from the University of Dayton. I went to work
18 for about a -- less than a year and realized that I wanted
19 to do more challenging work, and so I went back to school,
20 got a master's, at Rutgers University, and then worked for
21 almost five years and realized that I really like high-end
22 work. And to have a good license to do that, I needed a
23 PhD, so I went back to school again at the University of
24 Illinois to get my PhD.

25 Q. Okay. You also have on your little letters

1 after your name there a diplomate in geotechnical
2 engineering. What is that?

3 A. That's a -- that's the -- that's the
4 certification that's awarded to geotechnical engineers
5 that consider to have the next higher expertise in the
6 field. You know, one of the cream of the crop, if you
7 will.

8 Q. Okay. How does geotechnical engineering relate
9 to mine subsidence?

10 A. Basically, geotechnical engineering is related
11 to how the ground behaves mechanically. Basically, you
12 know, you're dealing with geology and how the geology
13 behaves to how nature or man affects it. And so one of
14 the things that how man affects geology is by mining. I
15 happened to do my PhD in mine subsidence. And so it's a
16 subject that really is not taught in school. I mean,
17 there's not many universities that you'll find that have
18 subsidence engineering courses. So I've been -- not many
19 people can say that their PhD ended up in something they
20 can make a business out of or be an expert in or be able
21 to consult.

22 Q. Okay. And there's a lot of different kinds of
23 engineers. So what is it -- do you have anything else to
24 add to what it means to be a subsidence specializing
25 engineer?

1 A. Yes. It's a very unique field because it deals
2 with so many aspects. You have -- you have the mine
3 stability issues, okay. Obviously, it's important to know
4 about the mine stability issues because that's what causes
5 subsidence, right? So the risk of instability is directly
6 proportional to the potential for subsidence in the
7 future. Then you have -- and, like I said, it's a
8 multi-discipline field because then you have the
9 propagation of the ground movements to the surface and how
10 they express themselves on the surface. And that's
11 important because if you have structures involved, you
12 need to know what the loading on those structures are
13 going to be so that you can then analyze those structures,
14 right?

15 And so you have -- you have to have some
16 understanding of structural response to ground movements.
17 And then you have what can you do to mitigate the
18 subsidence. Okay? So there's a lot of different things
19 that you can do, including ground stabilization methods.

20 Q. All right. And does that mine subsidence
21 experience matter for reviewing a project like this?

22 A. Oh, absolutely. Like I said, it's not --
23 there's -- there's not a lot of people that -- that have
24 this expertise. And you can only, in my mind, regulate as
25 good as you know. If you don't know something, you're not

1 going to be able to regulate it.

2 Q. Can you tell us a little bit about your
3 background in subsidence review related to coal mines
4 prior to this project?

5 A. I've done a lot of -- basically, I've done a lot
6 of review of coal mining permits back, I don't know, many
7 years ago, for both assisting with preparing subsidence
8 control plans and also reviewing them for different
9 individuals, pipeline companies, landowners. I really
10 don't care who it is that we represent. We're interested
11 in good science, and so that's why we've ranged from the
12 one group to another to consult with.

13 Q. Okay. Could you tell us about the distinguished
14 alumnus award you received from the University of
15 Illinois?

16 A. Yeah. It's a an award given every year to
17 people that have graduated from University of Illinois
18 that have made significant strides, either in industry or
19 research or academics.

20 Q. Have you published any journal articles or other
21 papers in your field?

22 A. I think I have about a hundred papers that I
23 published. The vast majority of them are in the area of
24 mine subsidence.

25 Q. Have you ever been qualified by a court as an

1 expert witness in related -- in a field related to the
2 mine subsidence or geotechnical engineering?

3 A. Yes. Many times.

4 Q. Have you ever been qualified as an expert by any
5 administrative agencies?

6 A. Yes.

7 Q. Do you know some of those states in which you've
8 worked and been qualified as an expert?

9 A. Illinois, Indiana, Ohio and West Virginia.

10 Q. Okay.

11 A. And Pennsylvania.

12 Q. And Pennsylvania.

13 Is there anything else you'd like to share with
14 the Environmental Quality Council about your background or
15 experience?

16 A. That I have -- I have a very long history of
17 investigating coal mines. It probably started back in --
18 over 35 years, where we've drilled and sampled old mines.
19 And I feel like I have a very good understanding of what a
20 mine goes through in terms of its structure and its
21 stability over time as a result.

22 A lot of that work is related to properties that
23 are undermined, that people want to develop and they want
24 to know what the subsidence risk is. So you have to be
25 able to have the expertise to drill, sample and analyze

1 these old coal mine structures to assess whether or not
2 there's a significant risk of subsidence on the surface
3 where they're going to put their structures.

4 Q. Okay. You wanted me to ask you about the ASTM
5 CE of the Year Award that you received.

6 A. I was the Civil Engineer of the Year for
7 middle -- for middle section of ASCE.

8 Q. And what is ASTM?

9 A. ASTM -- I'm a committee member of ASTM. ASTM is
10 American Standards for Testing and Materials. And I'm on
11 the committee that reviews standards for testing of soil
12 and rock.

13 MS. ANDERSON: Okay. Dr. Bagley, at this
14 time the Powder River Basin Resource Council would like to
15 offer Dr. Marino as an expert in the field of geotechnical
16 engineering.

17 CHAIRMAN BAGLEY: Any objections? Hearing
18 none, accepted.

19 MS. ANDERSON: Thank you.

20 Q. (BY MS. ANDERSON) Dr. Marino, just to get it
21 out in the open, are you being compensated for your time
22 here today?

23 A. Yes.

24 Q. And do you feel that compensation in any way
25 influenced any of the opinions you have drawn for these

1 proceedings?

2 A. No.

3 Q. For full disclosure here, do you often consult
4 for nonprofit organizations?

5 A. Yes.

6 Q. And why did you agree to consult for us?

7 A. Because you were willing to accept whatever I
8 thought my opinions were.

9 Q. Okay. All right. Let's get to your review of
10 the permit application. Could you tell us a bit about the
11 scope of your review?

12 A. Basically, I was sent materials by -- by the
13 council to review. The materials that I was sent was the
14 permit application, areas that I requested to be sent to
15 me that were related to the geotechnical issues on
16 subsidence. I also looked at some references that were
17 also sent to me related to subsidence in the area. I
18 looked at some OSM guidance materials as well. I think
19 that's probably it for that.

20 Q. Okay.

21 A. That's giving my report. My report has a list
22 of major documents that I did review.

23 Q. All right. I'm going to pull that report up
24 right now. So just for the record, this is our Exhibit 12
25 through 14. We split it up into three exhibits just

1 because of the size of the document. There's a lot of
2 maps and diagrams, and so we wanted it to be a little bit
3 smaller. So I'll pull it up.

4 So, Dr. Marino, can you identify this document
5 for us?

6 A. This is a copy of the report that I wrote after
7 review of the mining application for Brook Mine.

8 Q. Okay. And I think you were just talking about
9 this, but is this the list of parts of the showing on
10 page 1 and onto page 2, the parts of the application that
11 you reviewed and different reference documents you
12 reviewed?

13 A. Yes.

14 Q. Okay. Could you explain your main findings and
15 opinions based on your review?

16 A. My main findings is basically that the -- the
17 application is severely deficient in the analysis and data
18 to be able to make any kind of analysis of what the
19 likelihood of subsidence would be in the future.

20 Q. Okay. Dr. Marino, have you prepared a
21 PowerPoint presentation for your testimony today?

22 A. Yes.

23 Q. Okay. We'll go through that.

24 MS. ANDERSON: And for the record this is
25 POW Exhibit 11, and it's been supplemented just a little

1 bit with some other slides Dr. Marino has put in for
2 demonstrative purposes for his testimony today.

3 And, Dr. Bagley, I'd like Dr. Marino to mainly
4 just testify and talk to you about his presentation, but I
5 may ask some guiding questions along the way, if that's
6 okay with you.

7 CHAIRMAN BAGLEY: That's fine.

8 MS. ANDERSON: Okay.

9 A. Okay. So --

10 Q. (BY MS. ANDERSON) Yeah. Do you want the mouse?
11 Is that easy?

12 A. No. I've got it. If you could just flip to
13 them when I say.

14 Q. Okay. That works.

15 A. I don't know if this is kind of difficult me
16 pointing up here and people on the panel. I don't know
17 how to otherwise do it, but I'll try to be considerate and
18 point to both slides, if I can.

19 So the way I've arranged my presentation is I
20 know you've heard about the mining method, but I want
21 to -- because it's been a little time and I want to
22 summarize it maybe a little bit different way, mining
23 method that's been approved -- proposed by Brook Mine.
24 And then I want to talk about the mine stability issues
25 related to subsidence, that geological conditions as

1 reported in the application. And then from that, go into,
2 you know, what the subsidence potential is and then what
3 the conclusions were that I reached from my review and
4 examination of the information available. And then some
5 suggestions on basically where we can go from here in
6 terms of giving some direction on how the design should be
7 approached.

8 Okay. So -- so this is from the mining
9 application. And you can see the bench configuration that
10 we're -- the highwall mining will take place in the coal
11 seams. Note that this seam and this seam could also be
12 mined, so it could be benched out as well with the mine
13 proceeding inward.

14 One of the things to keep in mind is there's
15 been a lot of talk about MSHA. MSHA is Mine Safety and
16 Health Administration. And their concern is related to
17 mine -- obviously mine safety and health. So their
18 concern would not be in the room -- rooms or entries
19 because there's not going to be miners in the rooms or
20 entries.

21 MR. POPE: Dr. Bagley, I have to object at
22 this point. The -- what MSHA looks at is not within the
23 scope of Dr. Marino's expert report or the expertise he
24 discussed. MSHA's concerns are laid out in their
25 documents. He is speculating about what MSHA cares about.

1 MS. ANDERSON: Dr. Bagley, first of all,
2 Dr. Marino is an expert and he's allowed to speculate. But
3 second of all, this is testimony in direct response to what
4 was provided earlier by the company and their reliance on
5 the MSHA process to basically bootstrap the geotechnical
6 analysis that DEQ requires.

7 CHAIRMAN BAGLEY: This is an expert. I'll
8 allow his opinion. I imagine you may have questions later.

9 MR. POPE: Thank you, Dr. Bagley.

10 A. For example, you know, in the subsidence control
11 plans that I've reviewed, I've never seen MSHA mentioned
12 as a reference to be the one who determines whether or not
13 the mine plan is approved for surface subsidence. It's a
14 different issue. They have a different scope. So what
15 they -- what they -- what they would be concerned about
16 would be, you know, the slope stability issues that you
17 would have on these benches, and how they -- you know, how
18 that would affect the miners.

19 Here's -- here's just some photos to show the --
20 the highwall mining process. You can see the bench back.
21 There's no seams up here, but I would imagine that, you
22 know, this would be somewhat what it would look like if
23 you had seams on each bench. But you can see them here
24 longwall mining this coal seam down in this area.

25 Here's a closeup of one of these highwall mining

1 cavities. You can see these are the pillars that -- and
2 we talked about, the smaller pillars. These are the
3 barrier pillars. You can see for this formation where
4 this is happening, the rock here is fairly competent.
5 It's been weathered, but it's not falling off. It's
6 not -- it's different than the rock that we have at the
7 Brook's -- at the Brook Mine.

8 So looking at the last figure, we saw the web
9 pillars and then barrier pillars. This is also taken out
10 of the permit. And what I've done in red is put down or
11 summarized what the width of the pillars are and -- and
12 the entries are based on what they say is typical. Okay?

13 So there are two different areas of extraction.
14 You have the extraction between these -- these barrier
15 pillars, and then you have an overall extraction. For
16 mine stability purposes, what we're interested in is are
17 these higher extraction areas where the pillars are
18 smaller. And based on the data that's given in the -- in
19 the application, the extraction ratios would be on the
20 order of 60 to 70 percent.

21 So this is -- this is the -- these shaded areas
22 are the pillars. These are the rooms or entries. Up
23 above is the roof and down below is the floor. In all
24 those -- the pillar and floor and the roof are a part of
25 mine structure. They all have to work together to keep

1 the overburden stable above.

2 Q. (BY MS. ANDERSON) Okay. And for the record,
3 that was slide it looks like 7. So we're moving on to 8
4 now.

5 A. Okay. So you've seen -- probably seen a similar
6 drawing as this. This is from the mine permit. And the
7 red areas are the areas where there's room and pillar
8 mining that's planned. And what I have done is I've
9 labeled them by number, by block number, from 1 to -- I'm
10 not sure what the last number is. 20? Yes, 20. And then
11 between, that is where they're going to have those groups
12 into the ground in order to access those pillars -- those
13 coal seams.

14 So let's talk a little bit about mine stability
15 principles. Again, importance of this is it determines
16 what's the risk of subsidence on the surface.

17 Q. Okay. Now, on slide 10.

18 A. There are different modes of failure that can
19 cause surface subsidence. And we'll go through each one
20 of these in detail. The first is a room -- a -- a roof --
21 a room caving failure. That leads right into where the
22 void is created, the roof collapsed individually and
23 propagates up to the ground surface. The pillars -- you
24 can have the pillars have too much load on them and they
25 crush out. Or you can have a bearing failure. What that

1 means is the pillar's strong -- enough, but the -- but the
2 roof or floor isn't, and so it will either sink into the
3 roof or sink into the floor --

4 MS. ANDERSON: Are we okay with the audio
5 going forward?

6 A. -- will lead to subsidence.

7 Q. (BY MS. ANDERSON) Okay.

8 A. So this is -- this is kind of my illustration of
9 a roof collapse in a room. Here's the room or entry or
10 void space. Here's the coal on both sides. And so
11 originally there was a roof here, but this -- all this
12 material collapsed down and it breached the bedrock
13 surface. And once it breaches the bedrock surface, the
14 soil itself has no bridging capacity over the long term,
15 and so it will just follow suit.

16 So what is that room span capacity factor? What
17 are they? What are the things you need to look for when
18 you're assessing subsidence potential as with the
19 subsidence control plan? One of the things you need to
20 know is the durability of the beds. Now, what I mean by
21 durability, it's kind of the definition you would think.
22 It is rock material that does not degrade. Certain rocks
23 that will degrade. Like if you have a rock that has a lot
24 of clay in it, it will degrade.

25 Clay is the finest grain earth particle there

1 is. And when you get to the size of the finest grains
2 of clay, they have significant water absorption
3 characteristics. They get exposed to water and they break
4 down and they swell and they lose their strength
5 significantly.

6 So it's important to find out what are our
7 durable beds? What are the durables that are going to
8 bridge over from pillar to pillar? We also need to know
9 what the thickness of those beds are, because if it's a
10 thin durable bed, it's not going to be able to bridge.
11 It's got to have sufficient thickness to bridge from
12 pillar to pillar. What is the strength of the beds?
13 Okay. In other words, okay, it has some durability, but
14 does it have enough strength also to bridge.

15 And the last, but not least, is rock structure.
16 Okay. Rock structure is the fractures that are -- exist
17 in the rock. Rock isn't perfect. It has fractures in it.
18 And we know here, and we'll get into a little later, that
19 there is faults in this area. So that's significant rock
20 structure, the rock is going to be broken around it. The
21 durable beds are going to be broken, so they're not going
22 to have significant kind of bridging capacity in those
23 areas.

24 The other mode of failure is pillar failure.
25 This is my illustration of it. It could be a lot of

1 different ways, but this is the way I decided to show it.
2 Basically, the pillar is crushed out. Okay? It -- it --
3 the load on the pillars is too great and it crushes out
4 and causes it to fail. Normally, when you have something
5 like that, it's not one pillar. Because the roof didn't
6 fail, right? So if this one pillar fails, you're going to
7 have an adjacent one and another one adjacent to it on
8 either side that is also going to fail. You're going to
9 have a larger bowl of subsidence around surface.

10 Normally, those are much more abrupt when they occur.

11 What does the pillar strength depend on? And
12 there's some innuendos, some inferences of attempts at
13 calculating that in a -- in the application permit, but
14 there's no equations given, there's no strengths given.
15 There's no strength data. So it's difficult to know, when
16 you look at these different parameters that the pillar
17 strength depends on, coal strength. Okay. The pillar --
18 the equation that is said to be used, which is not
19 explained very well in the permit, is an equation for
20 what's called bituminous coal.

21 Just so you understand the differences, there's
22 different grades of coal. Okay? You have just basic
23 grades. You have lignite, you find that a lot of times in
24 Texas. There's a lot of fields of lignite in Texas. You
25 have subbituminous coal and you have bituminous coal and

1 you have anthracite.

2 And anthracite is the highest grade of coal.

3 And anthracite also has the highest strength. So the
4 equation that is used -- and we don't know for sure what
5 strength was used, but the one that's inferred in the
6 equation is for bituminous coal. We have subbituminous
7 coal. And there's no data that I found in the permit or I
8 can find in my research on subbituminous coal what the
9 strength is and how that strength changes when it gets --
10 becomes large cube sized, which is really what you use in
11 the pillar strength formula.

12 Pillar height. Okay. Pillar height. If you
13 look at the geologic cross-sections -- okay, we'll get to
14 those -- you'll see that the height changes all over the
15 place. There's quite a variation. And you don't get an
16 understanding in the permit on how -- how does that affect
17 the overall pillar strength?

18 Then you have the pillar width and length. You
19 know, the dimensions of the pillar in plan. Now, in our
20 case we don't have length because they're just long rows
21 of pillars. So it depends on the width also of the
22 pillar.

23 So all these different characteristics play a
24 significant role in what the ultimate strength of the
25 pillar is. Then you have bearing capacity failures. This

1 actually is my favorite mode of mine failure. And the
2 reason why, I guess, is because it's -- it's -- it's more
3 challenging to analyze.

4 What I'm showing here is a pillar that's
5 punching into the floor. You can see the floor is heaving
6 up on both sides. Okay? And you also see these tension
7 cracks that develop, and that's because the material
8 stretching -- the materials is moving out from underneath
9 the pillar and causing tension cracks -- that's called
10 rashing in the pillar -- to occur. And as a result of
11 that, the pillar itself doesn't have the stress
12 confinement it used to have. So it could fail or you have
13 a failure just as a result of punching into the floor
14 because of the softer materials.

15 In our case, from reading the permit, the vast
16 majority of the material's claystone. Okay? That's for
17 the roof and floor. Claystone is not a very good
18 engineering material. It -- claystone is made of clay.
19 And when that gets exposed to water, it deteriorates. It
20 softens and swells and it causes failure. A lot of the --
21 a lot of the failures that occur over time occur as a
22 result of these materials softening from groundwater
23 conditions. Obviously, they don't -- failure doesn't
24 occur right away. Something has deteriorated. Simply,
25 right? Well, what causes it to deteriorate? Water and

1 these materials that are nondurable.

2 So it's important to identify where these
3 durable materials and nondurable materials are. And
4 there's not even a mention of that in the application.
5 There's no mention of failure of roof and pillar
6 condition -- I'm sorry, roof or floor conditions in terms
7 of analysis or safety factors or anything like that.

8 Okay. So what does that depend on? Let's take
9 a little bit more narrow view on what should we be looking
10 for. It really -- the first item, strength and thickness
11 of nondurable zone. Obviously, nondurable means it's not
12 durable. Okay? It's a claystone of some material that
13 deteriorates. Where that exists right below the pillar or
14 above the pillar, that's a significant concern because
15 that's where all the bearing pressure is going to be
16 focused. So the strength of that, in the long term and
17 the thickness -- obviously, if it's only, say, a few
18 inches thick and you have a pillar that's, say, 10 feet
19 wide, no significance, right? But if you have a pillar 10
20 feet wide, and the thickness of that floor material that's
21 nondurable is 10 feet thick, that makes a big difference
22 in what the overall strength is going to be.

23 Again, we have structure. Structure, again,
24 being fracturing characteristics. What I found is from my
25 experience that where these materials have a lot of

1 microfractures in it, reduces the strength significantly.
2 Even in the short term. Doesn't even have to have the
3 softening effects. You can imagine, you know, a rock with
4 these -- all these intense microfractures versus a solid
5 piece of rock. Big difference in strength.

6 So also important is to find out what is the
7 resistance zone below. Right? In other words, okay, we
8 have this much soft material -- or nondurable material,
9 and now we have a resistant zone. That is going to be the
10 zone that's going to resist the shearing failure from
11 below. Does it have enough capacity at what depth? So
12 that has to also be defined.

13 If you are going to determine the bearing
14 capacity of the roof or the floor in terms of -- or a
15 failure in terms of a subsidence potential. And, you
16 know, we talked about this. The width makes a big
17 difference. The width ratio to the weakness of thickness
18 of material below, that ratio determines also the capacity
19 of the floor or roof.

20 Okay. Here's another instance to consider, is
21 let's say you have a nondurable floor -- I'm sorry, roof.
22 And you have groundwater that oscillates in it, okay, when
23 it's an abandoned mine. So it starts caving up. And as
24 it's caving up, this water level is going up and down with
25 seasonal variations. What happens? It dries and wets

1 these materials and causes them to break off and create a
2 greater cave or arch zone, in essence, causing the larger
3 or higher pillar and also causing this cave zone to
4 propagate upwards.

5 What I'm trying to do here is basically kind of
6 summarize just what I said with depth. Okay? And so what
7 we have here, here's the soil there. Okay? And then we
8 have -- this is topper rock. And then we have the roof,
9 the rock overburden here. This is the coal that's being
10 mined out. And then below you have the floor, now -- when
11 you're in a shallow depth -- like this mine, we go from
12 very shallow depths to very deep depths, like up to about
13 400 feet. So we've got this whole spectrum here that
14 could be present.

15 So at shallower depths, where the pressure on
16 the pillars isn't so great, you would -- even if you had
17 nondurable soft floor conditions, you would expect the
18 floor to be -- for the pillar to squeeze in the floor
19 because the pressures aren't high enough. The only thing
20 that you would be concerned about is for the ground above
21 these void areas propagate upwards and create a sink on
22 the surface. What could mitigate that is if you
23 identified this durable zone, like we have shown here as
24 an illustration, then you can propagate up. And you'll go
25 to that durable zone and it won't go any further. I've

1 done studies where we have this massive sandstone, you
2 don't see any subsidence. Okay?

3 So -- and then as we go deeper, now the stresses
4 on the pillars become greater and to the point where the
5 soft floor conditions cannot hold it up. Even though you
6 have a durable rock zone above, it's not going to be able
7 to bridge, say, a massive pillar squeeze condition or
8 floor squeeze condition. You're going to have a series of
9 these pillars that are squeezing into the floor and
10 causing the -- a bowl-shape depression on the surface,
11 despite having this rigid layer of rock here.

12 I have a case right now that's -- it started out
13 being 600 feet, and now it's 1200 feet. It's 200-foot
14 deep mine, and it has a very decent rock above, but the
15 floor is terrible. And so it's bridge -- it's collapsed
16 and it bridged over, even though great rock on the top.
17 And so then if we take a better look at the floor, what
18 I've done is I've drawn in this gray zone here, that's the
19 durable resistance zone. So now you thinned that soft
20 zone between the coal and -- and the -- the durable zone,
21 or here, from here to here, you can see it's only -- the
22 blue is very thin. It's so thin that it's not going to
23 cause a bearing failure, right? So the only thing at that
24 point you would be concerned about is pillar failure.
25 Right? That would be the only thing that can cause any

1 problems because you're not going to have a collapse in
2 the void because it's way too far below the ground surface
3 and reach the ground surface.

4 So -- and then you have a condition even deeper,
5 where we have resistant layers on both top and bottom.
6 You see that in Appalachian fields. Most of the rocks --
7 the roof rocks and the floor rocks are fairly durable and
8 compound rocks. In other words, they don't have
9 claystone. There may be pockets here and there, but they
10 don't have claystone. They're more durable rocks. And so
11 all you would be concerned about then is pillar safety
12 factors. What's the safety factor of the pillars.

13 So just to orient you on safety factor. Okay.
14 This is -- this is -- in our field this is a common term.
15 In civil engineering, this is a very common term that's
16 used to determine the risk of a design. Normally, there's
17 just a ratio that's established in design codes that tells
18 you, okay, if I get above this ratio, we should be okay.
19 And that's based on empirical evidence, right?

20 So it's the ratio of available capacity over the
21 overburden load. So, in other words, let's take this
22 table here. And table, say, is rated for 500 pounds,
23 right? We put a hundred pounds on it so that we would
24 have the safety factor of 5. Okay? It's -- when I say
25 rated, that's the -- the 500 pounds is what it's expected

1 to collapse at. Okay?

2 So if we put 250 pounds on it, that's a safety
3 factor of 2. Now, the code might say, well, if you have a
4 safety factor of 2, it's acceptable design. So you can
5 only -- you're only allowed to put 250 pounds on this
6 table. And that's how it works when you use safety factor
7 in design in civil engineering projects.

8 Next. And it's -- and as you know, Dr. Bagley,
9 as an engineer, you know it all depends on your input
10 data, prediction method and the calculated capacity.
11 Okay? If you have poor input data like we have here, we
12 don't have hardly any input data. If you don't have the
13 right input data, even if you have the right prediction
14 method, your calculated value is suspect.

15 So you have to have these two -- these two
16 building blocks, you have to have enough input data for
17 the circumstances that you have. The type of
18 circumstances. And that's -- a lot of that is engineering
19 judgment, especially in this case because we have such a
20 variety of mining conditions and geologic conditions. And
21 then you have to use the appropriate prediction method to
22 assess what the capacity is.

23 This kind of summarizes in a different way. Low
24 safety factors, obviously high risk. High safety factors,
25 negligible risk. So if you calculate, do all your

1 homework, do it right, and you have high safety factor,
2 you're going to have negligible risk of subsidence.

3 And so, you know, that -- that -- this scale
4 summarizes in another way how the subsidence risk relates
5 to the safety factor. Obviously, that factor hasn't any
6 kind of engineering -- is a quality -- is a function of
7 the knowledge and experience of whoever's doing the work.

8 So this summarizes -- it's a flowchart. It
9 summarizes, again, you have an immediate roof collapse,
10 different elements that can cause subsidence on the ground
11 surface. It starts out at mine level. You can have
12 immediate roof collapse or the void collapse. You can
13 have pillar crushing or you can have the pillar punching
14 into the floor or roof from bearing failure. Then
15 ultimately a roof has to fail above it. And then you have
16 surface subsidence.

17 Okay. So let's look at now what we understand
18 from the reported conditions -- conditions from the
19 application. This is -- this is a drawing that's taken
20 out of the application. I've put my block numbers on it,
21 1 through 20. You can see all these lines -- alphabetized
22 lines. Those represent slices that are taken through the
23 ground. Okay? In other words, there's been holes that
24 have been drilled along these lines or close to these
25 lines, drill holes, where they've been able to classify

1 the different geological materials. And so what was done,
2 to summarize and understand how these materials are
3 continuous across the mine site -- we were talking about
4 seven mines from here to here -- these slices are taken
5 through the ground to see where the coal seams are and
6 what are the other rocks related to it.

7 Also, which would have shown on here, you see
8 these huge -- D, nomenclatures, and then these lines.
9 Those are fault lines. And the D means that side has
10 dropped and the other side went up to the fault. Okay?
11 But there's not a lot of data given on the fault. All we
12 know is these lines. We don't know what the inclination
13 of the fault is, how it fractured. Don't know any of
14 that.

15 This type of arrangement of fault represents
16 what's called a horst and graben geologic formation. In
17 other words, in between the faults, like here and here,
18 the rock is -- one side is up versus the other side being
19 down. So if you want to cross, you'd have one side up
20 other side down, fault, but next side's up, and just kind
21 oscillates like that. And that's from tectonic activity
22 in the past.

23 So this is one of those cross-sections, this
24 goes east to west. And this is the Section A-A. And what
25 I'm trying to show here really is the variability what the

1 mining conditions are. You can see on top here for
2 reference, these are the block numbers, so these are the
3 areas where the room pillars would be, where this -- this
4 cross-section is sliced through the ground was taken. So
5 you can see block numbers -- like this is Block Number 10,
6 9, 7, and goes all the way to 6, right? 6 over here on
7 the side.

8 And so what it shows here is we have a thin
9 cover above this. This is a coal seam here, right?
10 There's thin cover above that coal seam. It's in a
11 valley. You know, if valley fills up with water and
12 there's propagation of a subsidence from a roof collapse
13 above, where's that water going to go? It's going to go
14 into the mine.

15 Then you have what I've called thin interburden.
16 Interburden is basically a term that's used in the
17 mining industry for the amount of rock in between the
18 coal seams. So it's important to know what the
19 interburden is because if you're going to mine two
20 seams, the stresses could overlap if they're too close.
21 So you have a complicated -- more complicated stability
22 condition.

23 So we have thin interburden here between these
24 two coal seams that are planned in the mine. We have, you
25 know, again the faulting here. And then on this side we

1 have deep cover, right? These coal seams are mined, but
2 they're under deep cover. So you can see the variation
3 just in one cross-section of different conditions we have.

4 Next slide. Here, again, we have thin
5 interburden in between the coal seams. Again, thin cover
6 up here. We have also the potential for flooding. You
7 know, if these coal seams here are mined out and water
8 fills in this ravine, we will have -- you can have
9 flooding of that mined-out area. Oh, hold on. Then you
10 can see a seam split.

11 That's important in this case, is because
12 there's a question of -- you have this whole seam that
13 wants to be -- that's going to be excavated. But at some
14 point, going to the west, it starts splitting and there's
15 a clay in between, the clay parting, it gets wider and
16 wider.

17 Well, that clay parting plays a role in the
18 composite of the pillar strength, right? At some point
19 it's going to get so thick, if you leave it in place, it's
20 going to really compromise the coal strength, especially
21 this clay, and it gets exposed to water. Where's the
22 criteria -- where's the analysis that tells us what that
23 limit is? There's no such analysis.

24 Here we have -- they talk about two seams, but
25 there's actually four minable seams here. We have the

1 deep seam, the Monarch seam, the Carney and then the
2 Masters. They have been offset because I talked to you
3 about before from the faulting. It's layer -- this layer
4 at one time was up here before the faulting. This layer
5 here was up here at one time. We have water that comes
6 along the faulting that is -- can recharge these areas
7 where there's going to be mining. Here we have another
8 condition of deep -- we have surface way up here. We have
9 deep mining condition.

10 Okay. Next. Faulting, again. Seam splits.
11 Again, we talked about that, the partings between the
12 seams. And another seam split here. So we've got a
13 variety of different depths, different thicknesses of
14 coal, different interburden thicknesses, different seam
15 splits, none of this is really addressed in the permit in
16 the application. Here, again, deep cover. Thin
17 interburden in between these two seams. Seam splits.

18 Okay. Here is an interesting -- I guess it's
19 not interesting, but another problematic condition. This
20 is what Big Horn Coal is concerned about, is all this
21 darker gray material, which is all stripped, dumped,
22 backfill material. If it's all made of claystone, it's
23 saturated, how the heck are you going to drive through
24 that without having slope problems? In my mind, I don't
25 even -- to me this would be the last place you'd want to

1 mine. I mean, is this a well-thought-out plan, comes to
2 my mind, is why would you want to deal with this first?
3 It's -- it's a significant slope problem. I don't know --
4 I don't know if MSHA would even allow it to be done. I
5 don't know. It's a slope condition. It's a mine safety
6 condition.

7 So from those different cross-sections where we
8 delayed where all the blocks were, we picked out all the
9 seams that looked like they could be mined. And also we
10 categorized -- and you can look at this -- when you have
11 an opportunity, you can see the varying thicknesses of the
12 coal. And then you see the depth of the coal and you'll
13 see it goes up to about 400 feet.

14 And what we've got here is I've shown where the
15 durable zones as they are delineated on the
16 cross-sections. So some places they exist. Sometimes
17 they're, you know, in the roof and on the floor, but
18 they're usually too far away from the pillar to make a
19 difference. They could make a difference where you have
20 the -- the cave collapsing upwards, the roof collapsing
21 upwards. WP means where present. That means it wasn't
22 present along the whole section where that block was.

23 Again, this is the summary of that table,
24 basically. So, you know, basically, as I've been saying,
25 there's a variety of conditions, the coal cover depth for

1 all the seams goes from the ground surface to 420 feet, so
2 we've got a variety.

3 Coal pressure -- I mean, you have -- the
4 pressure on the coal is going to be different, depending
5 on where you're mining.

6 Extraction height is from 2.5. And this is
7 about -- we don't really know what extraction height is
8 going to be completely. The miner -- they talk about the
9 miner being able to do up to 28 feet.

10 If you look at seams -- two seams come together,
11 the Masters and the Carney, where they come together, you
12 can get up to 25 feet. But with more boring, you don't
13 know how much variation there's going to be with that. I
14 used 20 here as an approximate number.

15 The panel extraction is 60 to 70 percent.
16 That's where I'm talking about, in the panel itself
17 between the barrier pillars. The only thing that's said
18 in the permit is that they will not have the minimum
19 pillar-to-width ratio will be 1. In other words, they'll
20 make the pillar as wide as it is high. Is that enough?
21 If you use that, you don't get a safety factor of 1 when
22 you get to the deeper depths. But that's not really
23 discussed. It's just a general -- there's no detailed
24 analysis of the varying conditions. And we have roof and
25 floor mainly of claystone, which is not a good engineering

1 material.

2 Okay. So in discussion of this site, what is
3 the possible expressions that you could see on the ground
4 surface as a result of the different types of mine
5 instabilities that are possible.

6 This was -- this is a drawing that I took out of
7 a publication, I believe it was 1980, by the USGS where
8 they did a study in Sheridan County on subsidence. And
9 this is their depiction of what the subsidence looks like.
10 And you can see here what we talked about before, about
11 the rooms caving in, right, and eventually come to the
12 surface and having these sinkholes that develop on the
13 ground surface as here.

14 On this side -- we'll talk about this also --
15 this is more of a bowl-shape depression where, you know,
16 you've got a massive collapse here of the pillars or floor
17 that causes this whole area to go. And there could have
18 been what I think the authors were trying to depict here
19 is that there were also some initial pits or sinkholes
20 before prior to the collapse of the whole area.

21 So one -- one calculation that is made in the --
22 in the permit application is with regard to explaining the
23 collapse over the areas of mining that exist in the area
24 in showing a relationship of that to what the mining
25 conditions were, using a certain formula. And this is

1 for -- purely for the caving up through the mine entry
2 conditions.

3 Using the same formula and the same extraction
4 height, which they didn't do for some reason. They didn't
5 do it for their condition. They did it for these older
6 mines, but if you take the same formula, and you can do it
7 on your own, and you plug in what they're proposing, you
8 end up with -- you end up with the potential to have pit
9 subsidence over 200 feet deep.

10 And this includes only one extraction height.
11 There's a mention in the report that they plan to stack
12 the pillars. In other words, if you -- if you're mining
13 one seam, the seam below, they'll put the pillars right
14 underneath that same -- right under the pillars above. So
15 essentially you have accumulated void height. You now
16 have 14 feet, interburden 30 feet, and then you might have
17 10 feet more extraction height. So, in essence, you've
18 got 24 feet of extraction height. And that should be
19 considered if you're doing this kind of calculation.

20 What we did is we did look at some air photos in
21 the area. Here's the outline of the -- of the proposed
22 mine application. And then you see in yellow the areas
23 where there's subsidence shown as a result of old mining.
24 What I wanted to show here -- we'll look at area A.

25 Next slide. Here you can see all the dotted

1 pattern showing all the subsidence within that area. And
2 based on the information available, this -- this
3 subsidence, it goes up to about 160 feet deep. So the
4 other condition, as we discussed, would be the sag
5 subsidences, these bowl-shaped depressions. Depending
6 upon the extraction height and extraction ratio, they can
7 maybe be up to 9 or 10 feet deep in the center, and they
8 would have tension cracks on the outside form as a result
9 of the subsidence.

10 So looking at the potential for that to happen,
11 we're looking at pillar failure, right? Massive number of
12 pillars failing, the roof above it collapsing, and a
13 larger area subsiding. We measure -- we calculated up to
14 almost 1300 PSI on the pillar, given the extraction ratios
15 we looked at in the permit. If you used the formula
16 that's used in the -- in the -- that's standard formula
17 that's used for pillar testing -- I'm sorry, pillar
18 calculations for strength, you end up with safety factors
19 less than one. So there's no discussion of -- all there
20 is is minimum of one safety factor. Doesn't really give
21 us enough to say if they're going to be able to control
22 subsidence.

23 There's no -- no significant clay seam assumed
24 in the analysis. As I said before, the -- the formula
25 that's used is a formula where they use the bituminous

1 coal strength. They didn't use the strength that's for
2 subbituminous coal. Do we know that the entries are going
3 to be truly parallel? I understand that they can control
4 the direction, but I'm not sure how the azimuth is
5 controlled or how much cover there is there.

6 And then the formula that issues, there's a
7 qualification in the formula saying that this formula was
8 developed based on coal heights of 7 feet or less. Okay.
9 We've got heights much higher than that and that's not
10 addressed at all.

11 Here, again, sag subsidence, the bowl-shaped
12 subsidence. Now, it could be from roof or pillar bearing
13 failure. Again, we have the same bearing pressures that
14 could come up. There are places that will be less than
15 one. If it has this clay zone, the vast majority -- we
16 talked about the vast majority of the geologic section
17 consists of. From my experience this claystone capacity
18 could be as low as 300 PSI. Way below the maximum, but
19 even -- and you're looking -- you want safety factors of
20 at least 2, right? So when you get to pillar pressures,
21 of 600, you start getting concerned about long-term
22 conditions related to pillar roof or floor capacity.

23 Also, as I mentioned in my illustration, when
24 you get yielding of the floor, you can also cause the
25 pillar to collapse because it's stretching apart the

1 pillar. So you can, in essence, you get yielding in the
2 floor, maybe not complete yielding. Pillar separates from
3 the stretching and collapses because it's not intact
4 anymore.

5 So, in conclusion, as I mentioned, there's
6 really not a lot of engineering geologic or geotechnical
7 information related to the mining interval. The
8 subsidence control plan exhibits a lack of geomechanical
9 understanding of short-term and long-term stability
10 proposed with multi-seam mining or even single-seam
11 mining.

12 In my opinion, there isn't sufficient
13 information, very limited analysis, that -- that
14 subsidence potential cannot be reasonably determined. But
15 if it is this claystone, as stated, you're going to have
16 problems. And for it to be a control plan -- and in my
17 mind, control means you're controlling it. You have to
18 demonstrate that you're controlling it. And I don't
19 believe that that is demonstrated in the permit
20 application.

21 From my view of subsidence control plans that
22 I've looked at over the years, this -- this is far below
23 industry standards. And, as I said, given what's reported
24 in the -- in the -- in the mine permit, I believe that
25 there is a serious risk of subsidence that will occur even

1 if -- even with the idea that's been proposed of we'll
2 submit design, you know, one month before. Well, that
3 doesn't really give any opportunity to do any -- any
4 check. You know, sort of we'll see how it goes kind of
5 attitude. I mean, I don't -- I don't think that's
6 regulatory.

7 Next slide. So what I've done is I've -- like I
8 said, I hope this is a help, and I -- that was the reason
9 I -- I am proffering this, is to get some idea of what
10 some of the things that, in a general way, should be done
11 to assess the mine risk.

12 Identification of the nondurable and durable
13 zones. Go to the next slide. And what I've done here is
14 just -- just to show you, near the site, you know, at the
15 Big Horn property, where we have -- you know we have these
16 outcrops here, right? Those are the durable rocks. Okay?
17 Those are the durable rocks. They sustained weathering,
18 right? They're intact. Then below you see all the sloped
19 soil material. That used to be rock. That's the material
20 we're talking about that's nondurable that reverts to rock
21 over time.

22 Methodology to assess the potential for chimney
23 subsidence. So I proffered that also, as well, what that
24 methodology would be.

25 Methodology to assess the potential for broad --

1 a broad or large subsidence. We talked about that.

2 That's the pillar failure and the bearing capacity
3 failure.

4 But, you know, it also needs to somehow assess
5 what these significant engineering geologic features are
6 and how they affect the mine structure, the faulting, for
7 example, that's already been reported in the area. Thank
8 you.

9 CHAIRMAN BAGLEY: So I think this is a good
10 time for a break.

11 MS. ANDERSON: Oh, sure.

12 CHAIRMAN BAGLEY: So let us take
13 10 minutes. Back at 10:26.

14 (Hearing proceedings recessed
15 10:14 a.m. to 10:27 a.m.)

16 CHAIRMAN BAGLEY: All right. We're back in
17 session. Please continue.

18 MS. ANDERSON: Thank you, Dr. Bagley. At
19 this time we have another demonstrative exhibit, which I'm
20 distributing to folks.

21 Q. (BY MS. ANDERSON) All right. And, Dr. Marino,
22 did you prepare this document?

23 A. Yes.

24 Q. And can you explain briefly what this is?

25 A. The purpose of this document was to help explain

1 my views on the approach that should be taken in terms of
2 subsidence control plan in terms of the design of the room
3 and pillar mine or highwall mine. And what I've tried to
4 address here in different items is basically what we've
5 talked about, summarized in a way that kind of gives
6 guidelines to step by step how to go about baking the
7 cake, if you will.

8 It's -- you can see it's not -- it's void of
9 basically equations, and that was purposefully done
10 because I didn't want it to be too restrictive. I have my
11 favorite equations or how I would want to do it, but a lot
12 of times you'll see in here appropriate analysis or words
13 like that, qualifying methodology used, ample data, kind
14 of things of that nature. But I think it's a good basic
15 step to provide guidance to appropriate measures that
16 should be taken in subsidence control.

17 Q. Okay. Could you briefly summarize some of the
18 sections in this document?

19 A. Yeah. So Section 1 deals with roof entry
20 failure analysis. This is the -- the analysis where we go
21 about determining a potential for the void itself
22 collapsing and propagating to the ground surface.

23 And 2 is the pillar failure analysis, that the
24 pillar failure analysis is basically looking at the
25 potential for the pillar to collapse and cause a broad --

1 broad-size subsidence to occur, and the steps that we
2 take -- that would be taken to do that.

3 And you can see the longest one is really
4 related to -- of the guidelines is Section 3 on roof and
5 floor bearing analysis -- failure analysis. And the
6 reason why that is is because of the different geological
7 scenarios that you can have. In terms of where the
8 durable layer is, is it right underneath the coal or right
9 above the coal, how thick the nondurable layer is, is it
10 old, nondurable, is it all durable? So all those I tried
11 to address all those different instances, the most common
12 instances.

13 CHAIRMAN BAGLEY: Excuse me. The copy we
14 got just has pages 1, 3 and 5. Pages 2 and 4, which I
15 think are double-sided, are --

16 MS. ANDERSON: That would be my error. I'm
17 sorry about that.

18 CHAIRMAN BAGLEY: As long as we get for the
19 record and Jim gets the full copy.

20 THE WITNESS: This is --

21 MS. ANDERSON: Yeah. That was the one I
22 copied, and -- it was a copying error on my part.

23 THE WITNESS: Okay.

24 MS. ANDERSON: So, yeah, I will make sure
25 that happens. Sorry about that. I can also email it to

1 the parties. I'll do that.

2 A. And there's a statement at the end about this
3 does not include any significant engineering geologic
4 features that might be present. It -- and it also
5 qualifies that there should be enough borings performed to
6 determine what the variability is, so that there is an
7 unlikely chance that an -- an adverse ground condition was
8 not uncovered.

9 Q. (BY MS. ANDERSON) Okay. So is it a fair
10 summary to say this is
11 a -- things that you would try and do if you were going to
12 prepare the subsidence control plan?

13 A. Yes.

14 Q. Okay. All right. Dr. Marino, I have some
15 questions for you about some of the testimony earlier from
16 the proceedings. Were you present for Mr. Barron's
17 testimony?

18 A. Yes.

19 Q. And do you remember him describing a pillar
20 design methodology that the mine plans to use called the
21 ARMPS?

22 A. Yes.

23 Q. And --

24 A. And that's Analysis of Retreat Mining Pillar
25 Analogy.

1 Q. Can you explain what that is?

2 A. It's a methodology that's fairly accepted in the
3 coal industry as a standard. It defines the coal strength
4 and provides guidance on what safety factors to use for
5 short-term and long-term conditions.

6 As I mentioned in my presentation, there are
7 certain inputs that need to be made when you're using that
8 equation. You know, the coal strength, for example, is an
9 important one. There's no data on the coal strength.
10 What was used, what was -- is the default value that's
11 given in the program. And this is for bituminous coals,
12 not for subbituminous coals.

13 So -- and then, again, there's a qualification
14 given that this -- this safety factor, this equation, it's
15 an equation that's used for not only for highwall mining,
16 but it's the same equation that's used for room --
17 standard room and pillar mining and it's used for longwall
18 mining. It's called a Mark-Bieniawski equation. Excuse
19 me. Because we really have the same situation, we have
20 pillars and rooms. But it talks about that this -- this
21 is based on case histories where the mining has occurred
22 with extraction heights less than 7 feet -- or at or less
23 than 7 feet. Here we're talking about potentially 20 feet
24 or more.

25 Q. Okay. Did you hear a lot of testimony earlier

1 about the TR-1 area?

2 A. Yes.

3 Q. And you touched a little bit on this in your
4 presentation, but do you have any concerns about highwall
5 mining in that area?

6 A. Yes. I've done a lot of slope stability
7 analysis as a geotechnical engineer, as part of our --
8 kind of like the woof and warp, if you will, of our
9 profession. And when you have heterogenous material
10 that's just dumped in place, saturated, it's -- and it's
11 over maybe a hundred feet high and you're going to cut
12 into it, I don't -- it just boggles my mind. I don't
13 know. I don't think you can get it past MSHA. I don't
14 know. But it's going to be very difficult. If you do,
15 it's going to have to be so flat. You're going to have to
16 take so much of that material out.

17 And just -- just as a -- an engineer, looking at
18 the scenario, without any data, engineering judgment tells
19 me why would you want to do that first? That is going to
20 be so challenging. I would start where it's going to be
21 the easiest, right?

22 Q. And just to kind of relate it back to the permit
23 application in the subsidence control plan, is there
24 anything in there that discusses these risks that you just
25 mentioned?

1 A. Well, that's not really a subsidence control
2 issue. I mean, that's more of an MSHA issue.

3 Q. Okay. Did you also hear some testimony about
4 this 50 percent extraction limits?

5 A. Yes.

6 Q. And how maybe that could help prevent
7 subsidence?

8 A. Yes. That -- that -- that comes from an old
9 standard back in the '70s about protecting structures, and
10 that you should use a 50 percent extraction limit. That
11 standard, obviously, it really doesn't apply if you have
12 safety factors that are lower than what are acceptable.
13 It should be based on safety factors, not on a percent.
14 It's like, well, we don't know what to do. We'll just say
15 50, 60 percent is okay, instead of actually calculating
16 what's -- what is -- you know, what is the risk?

17 Q. And based on your presentation, you believe that
18 the extraction maybe should be higher than 50 percent?

19 A. Excuse me?

20 Q. That the extraction may be higher than 50
21 percent?

22 A. Well, based on the typical range of the web and
23 entry widths that are given in the permits, they are
24 higher than that, yes.

25 Q. Were you here when Mr. Barron testified that the

1 Wyoming mine permit application's subsidence control plan
2 was quite extensive and in other states is often one page?

3 A. Yeah. That's not my experience at all. I mean,
4 the -- I believe -- I believe he was referring to the
5 entire permit. But all these permits are very extensive.
6 They're not one page. They're all extensive permits.

7 Q. Okay. And is it your testimony that you've seen
8 subsidence control plans with greater -- greater level of
9 detail than the one here?

10 A. Yes. And not -- there's nothing in them about
11 MSHA, because MSHA is not directly related to subsidence
12 on the ground surface.

13 Q. Okay. We'll get to that in just a minute.

14 In your opinion, does the application provide
15 sufficient information to provide a meaningful peer review
16 with respect to subsidence potential? So if you were in
17 the shoes of DEQ, would you be able to review this?

18 MR. POPE: Objection. Calls for
19 speculation. He isn't part of the DEQ and doesn't do their
20 review.

21 MS. ANDERSON: And, Dr. Bagley, he's an
22 expert. He's allowed to speculate. He's providing his
23 professional opinion on the quality of work provided by the
24 company.

25 CHAIRMAN BAGLEY: On the other hand, he's

1 just provided a review, peer review, which was pretty
2 clear.

3 Go ahead and answer.

4 Q. (BY MS. ANDERSON) Is there anything else you
5 want to say about the ability of doing a peer review on
6 this document?

7 A. No. As the chairman said, I think it was pretty
8 clear.

9 Q. Okay. Do you have an opinion on whether the
10 subsidence control plan should be certified by a
11 professional engineer?

12 A. All the ones I've seen have been. I mean, it --
13 it basically says when it's stamped that I take
14 responsibility for it and then I believe this is a valid
15 subsidence control plan.

16 Q. And were you here for the testimony from
17 Mr. Barron that he didn't stamp the subsidence control
18 plan?

19 A. Yes.

20 Q. So does the lack of that stamp from his PE
21 stamp, even from, you know, layperson's perspective, give
22 you any confidence that the subsidence control plan is
23 complete and technically adequate?

24 A. From my experience in working in other states,
25 there's always a PE stamp for engineering work. Always.

1 It may not be the same person, but there's always --
2 you're doing engineering work, there's a stamp for it.
3 Otherwise you're practicing without a license.

4 Q. Okay. In your opinion, do you believe there
5 should be significant revisions to the permit when the
6 design is complete for an area?

7 A. If there is -- when an area -- a significant
8 revision in my mind means there's -- in a -- let me step
9 back.

10 Q. Yeah.

11 A. This -- this mine application is all in one. My
12 experience has been normally you get a permit for an area
13 that's got all the detail that you need to get your
14 subsidence control plan done, and then you work that area
15 and then you put in a significant revision for the next
16 area. And then you provide the data for that area. Not
17 everything all at once, and where there's not any data for
18 anything.

19 Q. Okay. Were you here when there was testimony
20 about this, quote, directionally intelligent miner?

21 MR. POPE: Dr. Bagley, I'm going to have to
22 object. I know that Ms. Anderson wants to have Dr. Marino
23 rebut some of the earlier testimony. None of this
24 information is in his expert report. The reason that this
25 council set up a scheduling order to have expert reports

1 was to have ability for the parties to understand what each
2 expert would say, depose them if they want. We are way
3 outside the bounds of that, and, therefore, we haven't had
4 the chance to inquire with Dr. Marino on this. He was also
5 not designated a rebuttal expert, nor was there opportunity
6 for that.

7 MS. ANDERSON: Dr. Bagley, I think all the
8 witnesses throughout this whole hearing have been
9 testifying to what they heard from other witnesses. This
10 is no different than that.

11 CHAIRMAN BAGLEY: Can you repeat the
12 question?

13 MS. ANDERSON: Sure. It's about the
14 directionally intelligent miner. And if -- I'm going to
15 ask Dr. Marino if he has an opinion on that.

16 CHAIRMAN BAGLEY: You can go ahead and ask.
17 I'm not sure he's been qualified as a mining engineering
18 expert. So let's be careful how far you push that. I
19 mean, his credentials as a geotechnical expert are well
20 described, but mining engineering starts to push into
21 another area.

22 MS. ANDERSON: Sure. And I think he
23 appreciates that.

24 Q. (BY MS. ANDERSON) Dr. Marino, do you have an
25 opinion on the subsidence prevention capability of this

1 directionally intelligent, as it's been phrased to us,
2 miner?

3 A. I don't -- I can't say I'm an expert in mining
4 equipment, mining excavation, so I don't see the
5 relationship between that and subsidence. It really has
6 to do with the mine plan and how it's going to be
7 developed and what ends up being there.

8 Q. Okay. Thank you.

9 Okay. Mr. Barron talked a lot about this MSHA
10 ground control plan. And I'm going to pull up Brook 10c,
11 which has some of that in there.

12 Dr. Marino, do you have anything to say about
13 Mr. Barron's testimony related to the MSHA permit?

14 A. Well, it says right there what the ground
15 control plan is for. And if you read through it, you'll
16 see it's for safe working conditions. It's all about
17 workers and hazards, not -- not related to the -- it
18 doesn't say anything about subsidence.

19 Q. Okay. And do you believe that the mission of
20 MSHA is similar to the mission of DEQ in permitting a new
21 coal mine?

22 A. No. I mean, I don't know if -- if there are
23 areas that intertwine, but in terms of the subsidence
24 control plan, no.

25 Q. So is it your opinion, based on your experience,

1 that the MSHA process and the DEQ process are different?

2 MR. POPE: Objection, Dr. Bagley. It's the
3 same one. These are not opinions that Dr. Marino has in
4 his expert report. He's also not qualified himself as
5 expert in the regulatory process.

6 CHAIRMAN BAGLEY: Actually, I would agree.
7 Now we're asking, well, this regulatory agency does this,
8 does this. I think we need to come at this a different
9 way.

10 MS. ANDERSON: Okay. Thank you. We'll
11 stick to the deficiencies in the subsidence control plan.

12 Q. (BY MS. ANDERSON) All right. So at this time,
13 though, you didn't have a chance to review this permit,
14 the MSHA permit. It wasn't part of the subsidence control
15 plan?

16 A. I don't know of any that has been submitted.

17 Q. Okay. And, I guess, based on that, do you have
18 any recommendations for testing and analyses beyond what
19 will be required by MSHA later that should be required now
20 as part of the subsidence control plan?

21 MR. POPE: Objection. Same issue. This is
22 speaking to the regulatory process which should be
23 required. He's not an expert in that and has expressed no
24 opinions in this report.

25 MS. ANDERSON: Dr. Bagley, I think

1 Dr. Marino has testified that he's reviewed numerous
2 subsidence control plans and he served as an expert in
3 various capacities for those control plans. So I think he
4 has very good understanding what should go in the
5 subsidence control plan.

6 CHAIRMAN BAGLEY: Yeah. I think the
7 question should be what testing may be required to
8 specifically get at a subsidence control plan. MSHA may
9 have -- likely does have its own testing. That's not for
10 us to decide. I understand that that's what they're
11 referencing. But we can hear what his recommendations are
12 to get at the subsidence issues.

13 A. Yes. The testing -- types of testing I've
14 already outlined in my report for testing durable
15 materials, what tests tell you if it's durable or not, how
16 to determine what the strength is and when it becomes --
17 reverts back to a soil, what that strength is. That's all
18 given in my report.

19 Q. (BY MS. ANDERSON) Okay. And Dr. Marino, in
20 your expert opinion, do you consider the permit
21 application, as it currently stands, technically adequate?

22 MR. POPE: Objection. Same issue. He's
23 not an expert in regulatory process.

24 MS. ANDERSON: Dr. Bagley, I think he has
25 opinion --

1 CHAIRMAN BAGLEY: Yeah, but the question
2 is --

3 MS. ANDERSON: -- on if it's technically
4 adequate.

5 CHAIRMAN BAGLEY: -- is it technically
6 adequate. He's a technical expert, so we'll allow his
7 opinion on this issue.

8 MR. KUHLMANN: Mr. Hearing Officer, I'm
9 going to object that he has not established he's familiar
10 with what technical adequacy means under Wyoming law.

11 CHAIRMAN BAGLEY: You bring up a really
12 good question, which we'll probably have discussions on
13 later.

14 MS. ANDERSON: Yes.

15 CHAIRMAN BAGLEY: I would like to hear his
16 opinion on the -- and technical, as I understand it as an
17 engineer, and as Dr. Marino as an engineer, his views of
18 the technical -- not the legal parts, which I don't
19 consider technical, but -- so I'd like to go ahead -- but
20 thanks for the objection. I'd like to go ahead and ask --
21 have him answer that question.

22 A. In my mind, it's not complete in a technical
23 form because there's not enough information to evaluate
24 various mining scenarios in the various geologic
25 conditions.

1 Q. (BY MS. ANDERSON) Okay. Thank you.

2 So you've heard some of the testimony that there
3 will be some additional tests later on for MSHA or maybe
4 something else. Do you have any concerns about giving the
5 company the right to mine via permit at this time?

6 A. Well, that -- you know, those statements about
7 we're going to provide testing and analysis -- I mean,
8 what does that mean? There's no detail about what that
9 means and how it's going to be done. And it's kind of
10 putting the cart before the horse, you know, in terms of
11 determining the subsidence control plan.

12 Q. Okay. Understanding I may get an objection
13 here. Dr. Marino, if you were sitting in the chair of the
14 director, downtown in Cheyenne for DEQ, would you feel
15 comfortable approving this permit as it currently stands?

16 MR. POPE: Objection. He's not a part of
17 DEQ. He is not the director. He's not an expert in the
18 permitting process.

19 CHAIRMAN BAGLEY: I agree. He can't make
20 that conclusion.

21 MS. ANDERSON: Okay. That's fine.

22 THE WITNESS: Thank you.

23 Q. (BY MS. ANDERSON) Dr. Marino, I think that's
24 all I have for you, unless there's something else you are
25 remembering that you want to tell the council.

1 A. Maybe on cross I might think of something.

2 MS. ANDERSON: Okay. Great. Well, thank
3 you.

4 So that concludes my direct examination of
5 Dr. Marino.

6 CHAIRMAN BAGLEY: Great. Thank you.

7 So I have picked an order for cross. It will be
8 a surprise as we go through.

9 Mr. Gilbertz.

10 MR. GILBERTZ: Thank you.

11 CROSS-EXAMINATION

12 Q. (BY MR. GILBERTZ) Still good morning,
13 Dr. Marino. Just a couple of questions. You said at the
14 beginning of your testimony that your primary goal was to
15 be involved in good science. From your perspective, has
16 any good science went into the prediction of the potential
17 for subsidence at the Brook Mine?

18 A. There's no science there. I mean, I'm not
19 saying it's -- I'd like to see the science. There's no
20 science, in essence.

21 Q. Good. I think you inferred this, but was never
22 said directly. You talked about the fact that in this
23 model or the work that was done, there was an assumption
24 or a use of a formula that involved an amount in relation
25 to bituminous coal instead of subbituminous.

1 A. An amount?

2 Q. Yeah. An amount was placed into the calculation
3 which relied upon the coal being bituminous.

4 A. Yes.

5 Q. You told us that, in fact, this coal is
6 subbituminous.

7 A. Right.

8 Q. I think there was implication here, but you
9 never really said it, will the subbituminous have a
10 greater or lesser strength than the bituminous?

11 A. In general, lesser strength.

12 Q. Okay. And then I just wanted to confirm
13 something I heard you say. And I will butcher the name.
14 Is it Fenakowski?

15 A. Bieniawski.

16 Q. Bieniawski. Thank you.

17 Did you say that formula has a qualification on
18 it that it should not be used in -- when the extraction
19 height exceeds 7 feet?

20 A. First I have to correct it. It's Mark-
21 Bieniawski. Bieniawski was a professor at Pennsylvania --
22 Penn State. Mark worked under him. Mark worked under him
23 and he modified his equation.

24 Q. Very good.

25 A. And it was for, yes, the -- the equation was

1 developed for pillars with extraction heights of less than
2 7 feet.

3 Q. So from your perspective, in your
4 qualifications, is it appropriate to use that formula
5 as -- with confidence for extraction heights that exceed
6 7 feet?

7 A. I didn't -- I have not done that analysis to say
8 one way or another, but it's something that needs to be
9 addressed.

10 Q. Without having done the assessment you told us
11 is necessary to understand the risk of subsidence, do you
12 believe that without knowing the risks, a reclamation plan
13 can be developed that assures reclamation?

14 MR. POPE: Objection, Dr. Bagley. We're
15 now outside the scope of Dr. Marino's expert report. I
16 understand Mr. Gilbertz did not -- was not involved in
17 preparing that report, but, again, that's the reason why a
18 report exists, why the Rules of Civil Procedure are set up
19 they way they are and why council set up the scheduling
20 order the way they did.

21 MR. GILBERTZ: Well, I think what we have
22 is the potential for subsidence, which is going to then
23 require reclamation, and my question for him is without
24 knowing the risk of the subsidence fully, can we get to a
25 place where we can predict the reclamation as it relates to

1 subsidence.

2 CHAIRMAN BAGLEY: Yeah, I'll allow that
3 question, focusing on subsidence issues.

4 Q. (BY MR. GILBERTZ) With that qualification,
5 Doctor.

6 A. It all depends on the long-term stability of the
7 coal mine. And a lot of the effects that you see now in
8 the area are long-term effects. As I said before, in long
9 term these nondurable rocks deteriorate, and that's when
10 the instability occurs. I've seen it in many places where
11 we're talking 50 years later, what reclamation is going to
12 be around then to do that, where, you know, you have
13 subsidence conditions.

14 MR. GILBERTZ: No further questions. Thank
15 you.

16 CHAIRMAN BAGLEY: Thank you, Mr. Gilbertz.
17 Ms. Boomgaarden.

18 MS. BOOMGAARDEN: Thank you, Dr. Bagley.

19 CROSS-EXAMINATION

20 Q. (BY MS. BOOMGAARDEN) Good morning.

21 A. Good morning.

22 Q. I'm Lynn Boomgaarden. I'm representing Big Horn
23 Coal here today, and I have just a couple of questions.

24 I'd like to draw your attention back to the TR-1
25 area in particular and to the page in your PowerPoint

1 where you had geologic conditions and you had the K-K
2 prime cross-section, you're familiar with --

3 A. I think I know which one you're talking about.

4 Q. With that. And you're referring to the block 1
5 and block 2 areas. Is that your understanding that's also
6 the TR-1 area?

7 A. Yes.

8 Q. And you referred to that gray and consolidated
9 backfill area. And for the council's benefit, I have a
10 hard copy here if you have reason to want to refer to
11 that. But this is the page from the PowerPoint. I don't
12 have a page on the PowerPoint to refer to.

13 CHAIRMAN BAGLEY: I think I've seen it
14 enough, I dream about it, so...

15 MS. BOOMGAARDEN: Thank you.

16 Q. (BY MS. BOOMGAARDEN) And --

17 THE WITNESS: More cross-sections than you
18 wanted to see, right?

19 Q. (BY MS. BOOMGAARDEN) Dr. Marino, as I
20 understand the geologic conditions, it shows the strata
21 and the variability of the strata across that K-K prime
22 cross-section; is that correct?

23 A. Yes.

24 Q. And I understood your testimony to understand
25 that that unconsolidated backfill is saturated with

1 groundwater; is that correct?

2 A. That's what I understand from other testimony.

3 I would expect it to be.

4 Q. Okay. And do you -- and I appreciate your
5 testimony on slope stability, but I want to move past that
6 and talk about your opinion on the impacts on the risk of
7 subsidence, if any, if that backfill is cut through, as we
8 heard about in Sheridan, and that groundwater from the
9 backfill then is drained down into the various strata
10 below the backfill, which would constitute the roof, the
11 mined area and the floor.

12 A. I haven't really done a detailed analysis of
13 what the groundwater flows are. And, I mean, if -- if
14 water gets into the -- the rocks below, it's going to
15 affect, you know, those nondurable rocks.

16 Q. And one last question, then, following up on
17 that. And this is also referring to a page in your
18 PowerPoint called -- entitled Mine Stability Principles.
19 And it was -- had a subtitle oscillating groundwater level
20 within mine void interval. Do you recall that page?

21 A. Yes.

22 Q. And were you present for testimony during the
23 earlier part of the proceeding where there was discussion
24 that although it's not mentioned in the mine plan at this
25 point, there's a possibility that a sump or a pump system

1 would be installed to drain that groundwater as it flowed
2 down into the mine works. Did you hear that testimony?

3 A. Yes.

4 Q. So could you tell me, relative to your mine
5 stability principle chart here, if there is a drain and
6 subsequent pump feature that would cause variability to
7 the groundwater level, could that too affect the
8 subsidence risk?

9 MR. POPE: Objection, Dr. Bagley. I
10 apologize for sounding like a broken record. These
11 opinions are not in Dr. Marino's expert report. There's a
12 reason the report exists. We would object to him
13 testifying to this.

14 MS. BOOMGAARDEN: Dr. Bagley, I'm referring
15 specifically to the PowerPoint based on his report that
16 talks about mine stability principles related to the
17 fluctuation of water level from pumping and relating it
18 back to prior testimony.

19 MR. POPE: The specific opinion about the
20 TR-1 area, the pumping, draining, groundwater in that area,
21 is not in his expert report.

22 CHAIRMAN BAGLEY: No. The question,
23 though, is how would the changing water -- potentially
24 changing water levels due to pumping affect subsidence, so
25 I'll allow that question.

1 MS. BOOMGAARDEN: Thank you.

2 A. Pumping -- on and off pumping is going
3 to fluctuate, cause fluctuation in the groundwater
4 levels. But, again, it comes down to not having any
5 detail. We don't have the detail. Where's the pump
6 going to be? What's the capacity? We don't have
7 any of this. It's all just conceptual, cloud
8 in the sky stuff. As engineers we don't work off
9 cloud in the sky. We have hard calculation. We
10 have analysis. We have the ground truth to assess
11 whether something -- a project's going to be successful
12 or not.

13 Q. (BY MS. BOOMGAARDEN) So do I understand
14 correctly that you saw no data in the mine permit
15 application related to groundwater levels, groundwater
16 fluctuation or pumping?

17 A. I want to say that I did not focus on the
18 hydrogeologic conditions.

19 MS. BOOMGAARDEN: Thank you. No further
20 questions.

21 CHAIRMAN BAGLEY: Thank you,
22 Ms. Boomgaarden.

23 Mr. Kuhlmann.

24 MR. KUHLMANN: Thank you, Mr. Hearing
25 Officer. I just have a few.

1 CROSS-EXAMINATION

2 Q. (BY MR. KUHLMANN) Dr. Marino, have you ever
3 worked on a mine site in the Powder River Basin before?

4 A. I don't believe so, no. I did -- I did overall
5 geologic -- geotechnical study of rocks from various coal
6 fields, and Powder River Basin was part of that study.

7 Q. Have you ever worked on a mine site related to
8 the Masters or Carney coal seams?

9 A. No. But I understand that there hasn't been a
10 permit since 1980 on -- on coal mining. Maybe I'm wrong,
11 but that's what I heard from testimony.

12 Q. It sounds like you don't know that yourself,
13 correct?

14 A. That's what I heard from testimony.

15 Q. All right. You're not familiar with what is
16 required by Wyoming law to -- for a permit application to
17 be technically adequate, correct?

18 A. I don't claim to be a legal expert.

19 MR. KUHLMANN: That's all my questions.

20 Thank you.

21 CHAIRMAN BAGLEY: Thank you.

22 Mr. Pope.

23 MR. POPE: Thank you, Dr. Bagley.

24 CROSS-EXAMINATION

25 Q. (BY MR. POPE) Good morning, Dr. Marino.

1 A. Good morning, Mr. Pope.

2 Q. I know you're probably somewhat disappointed
3 Mr. Sutphin is not in this seat.

4 A. He said he's going to send me a postcard from
5 Italy, but we'll see. I gave him my business card, so...

6 Q. I have no doubt he will send you one.

7 Let's talk about something that I think you and
8 I can agree on. You would agree that it's important to
9 understand the method of mining proposed by a mine
10 applicant to evaluate the potential risks of subsidence?

11 A. You have to define what you mean by method of
12 mining.

13 Q. Sure. Are they going to do -- what I mean by
14 that is you agree that identifying whether it's a surface
15 mine, highwall mine, longwall mine factors into evaluating
16 the subsidence risk.

17 A. Well, in open mine -- or open pit, I don't
18 understand how that would relate to subsidence.

19 Q. Dr. Marino, understanding that. My question,
20 though, is a simple one. You would agree that
21 understanding the type of mining, the method, that an
22 applicant proposes to use matters in determining
23 subsidence risk?

24 A. To some -- some degree.

25 Q. In the instance of the Brook permit application,

1 at least in preparing your expert report, you considered
2 the highwall mining method that Brook intends to use as
3 the same method as room and pillar mining, right?

4 A. No. What I said was that you end up with a room
5 and pillar configuration. In fact, a lot of the older
6 mines --

7 Q. Dr. Marino, I'm sorry. I just -- it's a
8 yes-or-no question here. And I understand the desire to
9 explain, and I'm sure your counsel will give you that
10 opportunity. But I want to be very clear, is it your
11 testimony today that you do not consider highwall mining
12 and room and pillar mining the same?

13 A. I consider them, in terms of mine stability, the
14 same.

15 Q. But you're aware, though, that in the highwall
16 mining method that Brook intends to use, that as the coal
17 pillars run the length of the mining, the Brook Mine is
18 not going to then come and cut perpendicular into those
19 webs and pillars, right?

20 A. Yeah. What we know crosscuts.

21 Q. You would also agree with me, Dr. Marino, that
22 you have not reviewed any literature on the continuous
23 highwall miner that Brook proposes to use at its mine?

24 A. I did look at a video of the highwall miner
25 that's proposed.

1 Q. Fair enough. My question, however, was you have
2 not reviewed any literature on the proposed highwall miner
3 Brook intends to use?

4 A. So can you be more specific? I mean, there was
5 stuff on the website -- what are you specifically talking
6 about literature?

7 Q. Sorry, Dr. Marino. Give me one moment. I
8 picked up the wrong book.
9 So let me be very specific to your
10 clarification.

11 A. Thank you.

12 Q. You have not looked at any of the literature or
13 materials that any of the continuous highwall mining
14 companies produced on the subject of their miners, right?

15 A. Can you repeat that? I'm sorry.

16 Q. Sure. You have not looked at any of the
17 literature or materials that any of the continuous
18 highwall mining companies produced about their mining
19 vehicles.

20 MS. ANDERSON: Dr. Bagley, I'm going to
21 have to object on relevance grounds. I'm not sure what
22 other companies and the miners those other companies may
23 use has any relevance to this proceeding.

24 MR. POPE: His ability to evaluate the
25 subsidence risk, the subsidence control plan of the Brook

1 Mine, as he said on direct, depends on input data. One of
2 the pieces of the input data is how the mine works and how
3 the miner will engage in rock that will hold up that area.

4 CHAIRMAN BAGLEY: It's related, not as
5 directly as it might seem, but go ahead and answer that
6 question, please.

7 A. I have not -- I -- I -- whatever literature
8 you're talking about, I have not looked at. The only
9 thing I have looked at was some general information that
10 was provided on the website by the manufacturer and what's
11 given in the permit.

12 Q. On direct you testified about some experience
13 you had relating to figuring out if an area is undermined
14 beneath the structure, you had some experience with that.
15 You're aware, though, that there are no structures on the
16 surface in the areas where Brook Mine proposes to mine,
17 correct?

18 A. I -- I am not aware, but I did not study that.
19 I'm -- my task was to determine the subsidence potential.

20 Q. Let's -- let's talk about your review of how a
21 permit comes to be in Wyoming. Mr. Kuhlmann asked you a
22 question similar to this, but you've talked about the
23 purpose of a subsidence control plan, both in your report
24 and on direct. But you did not review any Wyoming
25 statutes for what is required in a subsidence control

1 plan, right?

2 MS. ANDERSON: Objection. There's actually
3 not a statute that references the subsidence control plan.
4 So I'm not sure what Dr. Pope -- or Mr. Pope is even
5 talking about at this point.

6 MR. POPE: Dr. Bagley, my point is that he
7 didn't even look at the law to figure out what the
8 standards are for a subsidence control plan, but then
9 testified about what is required for a distance control
10 plan that is directly relevant to whether the permit is
11 accurate and complete.

12 CHAIRMAN BAGLEY: All right. The question,
13 as I hear it, is has he looked at any of the Wyoming
14 statutes, regulations. We can ask that question.

15 Q. (BY MR. POPE) Dr. Marino, do you need me to
16 repeat the question?

17 A. No. I looked at a few brief phrases that were
18 shown to me, but I did not study the Wyoming regulations.

19 Q. Similar question here. You also did not review
20 any Wyoming regulations on what is required for a
21 subsidence control plan?

22 MS. ANDERSON: Asked and answered. He just
23 testified to that.

24 A. What's the difference in the question?

25 CHAIRMAN BAGLEY: Yeah. I --

1 MR. POPE: There's a difference between a
2 statute and a regulation.

3 CHAIRMAN BAGLEY: So he said no to the
4 regulations. You want to ask him about the statute?

5 MR. POPE: I asked the substitute question
6 first. Now I'm asking him about his review of the
7 regulations.

8 CHAIRMAN BAGLEY: Okay. Go ahead and
9 answer it.

10 A. Same.

11 Q. (BY MR. POPE) Same answer?

12 A. Same answer.

13 Q. Thank you.

14 Similar question, and probably have some
15 smirking faces in the room. You also did not review any
16 DEQ guidelines for what is required as part of the
17 subsidence control plan, right?

18 MS. ANDERSON: And I'll raise the same
19 objection. There's not actually DEQ guidelines in a
20 subsidence control plan, so...

21 MR. POPE: Dr. Bagley, the point here is
22 that to provide expert testimony on what is required in a
23 permit application would require someone to go look at what
24 actually is required as part of a permit application. And
25 if even there isn't anything required, that should serve

1 basis for offering opinion, expert or otherwise.

2 CHAIRMAN BAGLEY: Yeah. You're asking
3 about legal stuff, and he's a technical expert. But he can
4 go ahead and answer the question.

5 A. I did ask that question of counsel, and they
6 basically -- their response was there's not much on it to
7 look at.

8 Q. (BY MR. POPE) Fair enough. Thank you,
9 Dr. Marino.

10 Getting back to the permit application, you also
11 didn't review any of the comments and responses that went
12 back and forth between Brook and DEQ, correct?

13 A. After my deposition I did scan through those,
14 yes.

15 Q. But not before, right?

16 A. No.

17 Q. So, for example, at least at the time of your
18 deposition and at the time you prepared your expert
19 report, you weren't aware of any subsidence-related
20 comments DEQ had submitted to Brook Mine?

21 A. No.

22 Q. You also didn't ask any questions of DEQ
23 personnel in their review of the Brook permit application,
24 right?

25 A. No.

1 Q. And as a result of that, you don't know the
2 qualifications of the folks in the District 3 offices and
3 in the Cheyenne office of DEQ who reviewed the permit
4 application?

5 A. No.

6 Q. You mentioned on direct that you have never seen
7 MSHA referenced in a permit application and that your
8 experience has more been there is --

9 MS. ANDERSON: Objection. That's not what
10 he stated.

11 MR. POPE: Dr. Bagley, I explicitly heard
12 him say that he had not seen as part of -- maybe I wasn't
13 clear on the question -- as part of subsidence issues
14 discussing MSHA and actual MSHA.

15 CHAIRMAN BAGLEY: Yeah. Ask the question
16 more clearly, please.

17 MR. POPE: Sure.

18 Q. (BY MR. POPE) Dr. Marino, I heard you testify
19 on direct that in your experience, in terms of evaluating
20 subsidence, you had not seen in a permit application a
21 discussion of further work with MSHA. You also said that
22 in your experience, a permit will have a lot of site-
23 specific data on one area and then will go through a
24 significant revision process as it moves on. But you,
25 despite that experience, have no experience in permitting

1 a new coal mine in Wyoming, right?

2 MS. ANDERSON: Objection.

3 A. It's like --

4 MS. ANDERSON: I'm sorry. I'm going to
5 have to object to the form of the questions. I had a
6 really hard time following. There was like at least three
7 separate things in there about --

8 THE WITNESS: You made several assumptions
9 about --

10 CHAIRMAN BAGLEY: I got lost.

11 MS. ANDERSON: Yeah.

12 MR. POPE: I'll simplify the question.

13 Q. (BY MR. POPE) Dr. Marino, you have no
14 experience in permitting a new coal mine in Wyoming,
15 right?

16 A. As I said earlier, there hasn't been one and I
17 haven't, no.

18 Q. Let's talk about the ground control plan. At
19 least at the time you prepared your expert report, you
20 were not aware that the Brook permit application had a
21 commitment to do further engineering studies, right?

22 A. I think there's an inference of that in the
23 permit, in the application, that, you know, there was
24 going to be a -- that, in essence, the MSHA control --
25 ground control plan was going to make the subsidence

1 control plan complete.

2 Q. But you're at least aware now that Brook will
3 have a ground control plan approved by MSHA in place
4 before it begins mining?

5 A. I don't think they can mine without it.

6 Q. You're also aware that as part of preparing and
7 getting approval for that MSHA ground control plan, that a
8 professional engineer will have to stamp the ground
9 control plan, right?

10 MS. ANDERSON: Objection, actually.
11 Mr. Pope was raising all kinds of objections to the MSHA
12 permitting process. Now he wants Dr. Marino to testify
13 about it.

14 CHAIRMAN BAGLEY: That's probably because I
15 let the questions be answered -- asked. Yeah, he can go
16 ahead and ask that question.

17 Q. (BY MR. POPE) Dr. Bagley [sic], do you need me
18 to repeat the question?

19 A. No. I understand what you're saying. I would
20 expect it to be signed and sealed.

21 Q. I'm going to pull up on the screen for you,
22 Dr. Marino, DEQ Exhibit 5-017.

23 MR. POPE: If you can blow up the bottom
24 paragraph, please.

25 Q. (BY MR. POPE) Can you see that okay,

1 Dr. Marino?

2 A. Yes.

3 Q. Okay. I want you to go down to the second
4 sentence and -- you had mentioned that there was no
5 strength data in the permit application. Here on DEQ
6 5-017, it says that "Laboratory strength analysis was
7 conducted on four samples from two locations (R13-019 and
8 R13-023) and results provided in Addendum D5-5." Did I
9 read that correctly?

10 A. Yeah. I would like --

11 Q. Dr. Marino, my question was simply did I read
12 that correctly?

13 A. Yes.

14 Q. Thank you.

15 Let's go to the next page, please. DEQ 5-018.

16 MR. POPE: If you can blow up the top
17 paragraph, please. Thank you, Carri.

18 Q. (BY MR. POPE) Can you see that all right,
19 Dr. Marino?

20 A. Yes.

21 Q. Okay. I'd like you to look at the sentence that
22 begins "It is understood." Here it says, "It is
23 understood that due to the nature of the area and the
24 strike and dip of the coal seams and the ever-changing
25 overburden and interburden thickness that these samples

1 will not represent all conditions encountered by the
2 continuous miner. Samples will be collected and strength
3 testing will be conducted on those samples in order to
4 satisfy the requirements of the MSHA ground control plan
5 which must be approved prior to mining." Did I read that
6 correctly?

7 A. Yes.

8 Q. Goes on to say, "The future testing results and
9 analysis in preparation of the MSHA ground control plan
10 will be provided to WDEQ/LQD." Did I read that correctly?

11 A. Yes.

12 MR. POPE: Can we go to the next paragraph,
13 please, Carri?

14 Q. (BY MR. POPE) Can you see that, Dr. Marino?

15 A. Yes.

16 Q. Here it says, "The results of the tensile
17 strength tests will be utilized to size both the web
18 pillars and barrier pillars to achieve a factor of safety
19 as set by the MSHA ground control plan to conduct mining
20 and minimize the risk of subsidence." Did I read that
21 correctly?

22 A. Yes.

23 Q. I'd like to go now to Brook Exhibit 10d. We'll
24 put that up on the screen.

25 MR. POPE: Can you just blow up, Carri, the

1 title, please.

2 Q. (BY MR. POPE) Dr. Marino, is Brook Exhibit 10d
3 the District 9 highwall miner ground control plan check
4 sheet?

5 A. I guess it is.

6 Q. Just a point of clarification for the council.
7 Are you familiar with MSHA District 9?

8 A. No.

9 Q. Do you know -- and it's okay if you don't, but
10 do you know that District 9 is the district within MSHA
11 that regulates the state of Wyoming?

12 A. I actually talked to some MSHA officials. I
13 thought that they were the ones that -- I don't remember
14 the district number, but the ones that were in charge of
15 any permitting for the Brook Mine for open-pit mining and
16 highwall mining. And I -- they were not aware of any
17 application or anything being filed.

18 Q. Dr. Marino, my question was a little bit simpler
19 than that. Are you aware --

20 A. I'm trying to answer your question. And maybe
21 they were District 9, maybe they weren't. I'm not sure.

22 Q. To be fair -- and I don't mean to confuse you in
23 any way. I'm not asking you about people. I'm just
24 simply asking are you aware that District 9 of MSHA is the
25 district that regulates the state of Wyoming?

1 MS. ANDERSON: And I still don't see what
2 the relevancy as to some of these questions are, but --

3 MR. POPE: Dr. Bagley, the --

4 CHAIRMAN BAGLEY: I think he's answered
5 that question. I heard no, but --

6 Q. (BY MR. POPE) I apologize, Dr. Marino. If you
7 said no, I did not hear that.

8 A. That's fine. No.

9 Q. So let's -- I want to go into Brook Exhibit 10d.

10 MR. POPE: And, Carri, if you would -- that
11 long middle section there, if you would blow that up,
12 please.

13 Q. (BY MR. POPE) Dr. Marino, this is portions of
14 the checklist that in preparing a ground control plan for
15 MSHA that a mine must include, do you see up there where
16 it says in subpoint A, slope of the ground to be mined?

17 A. Yes.

18 Q. The next one under that is maximum highwall
19 height?

20 A. Yes.

21 Q. Then C is highwall slope?

22 A. Yes.

23 Q. Underneath that, in subsection D, it says width
24 of highwall benches?

25 A. Yes.

1 Q. All right. Is -- you would agree with me that
2 this information, based on what you testified on direct,
3 are some things that you would recommend that Brook Mine
4 study and provide engineering detail for?

5 A. Yes.

6 MR. POPE: Carri, would you mind shrinking
7 that, please, and going down to the bottom bullet, please.

8 Q. (BY MR. POPE) Dr. Marino, this is another
9 bullet, and it says Stability. And there it says "Use of
10 ARMPS," A-R-P-M-S. I believe you testified on direct that
11 that program is an industry standard; is that right?

12 A. Yes.

13 Q. All right. And below that, it says for this
14 checklist that the stability must have a minimum overall
15 safety factor of 1.3, right?

16 A. Yes.

17 Q. And as you said on direct, the safety factor is
18 very important, right?

19 A. Yes.

20 Q. I'm going to go to the next page in Exhibit 10d.
21 Sorry, Dr. Marino, give us one moment.

22 A. No problem.

23 MR. POPE: Carri, if you'd blow up the top
24 text, those two lines at the top, please. Thank you.

25 Q. (BY MR. POPE) Dr. Marino, this portion of the

1 MSHA ground control checklist continues the safety factor
2 discussion. You would agree with me here it says that the
3 ground control plan should include a drawing showing depth
4 of overburden, height of coal, maximum number of holes
5 between barriers, barrier and web dimensions used to
6 calculate 1.3 stability factor.

7 A. Yes.

8 Q. There was some discussion on direct and on cross
9 with Mr. Gilbertz with the difference between bituminous
10 and subbituminous coal. Do you remember that?

11 A. Yes.

12 Q. You're aware that the ARMPS program required by
13 MSHA includes an analysis of both subbituminous and
14 bituminous coal?

15 A. No.

16 Q. You're not aware of that?

17 A. I, in fact, talked to the individual, who's a
18 colleague of mine, Chris Mark. And, in fact, I talked to
19 him about subbituminous coal strengths --

20 Q. Dr. Marino, I apologize for interjecting again.
21 My question was simply are you aware of ARMPS using both
22 bituminous and subbituminous coal?

23 MS. ANDERSON: I think he's trying to give
24 him the answer, if he'd just let him.

25 MR. POPE: My question, Dr. Bagley, is just

1 is he aware. That's a yes or no.

2 CHAIRMAN BAGLEY: Not necessarily.

3 Go ahead and continue with your answer.

4 A. Okay. I know the person well, Chris Mark, who
5 is Mark-Bieniawski equation, and I emailed him about
6 subbituminous strengths. And he said he had no
7 information on -- he actually gave me one reference that
8 was kind of -- gave one or two strength values. So I
9 doubt, since he is the one that developed this program and
10 one I talked to recently, and from my review, I don't
11 remember saying anything about subbituminous strengths.

12 Q. (BY MR. POPE) Maybe we've gotten our wires
13 crossed here, Dr. Marino. Let me -- let's just back up
14 and ask a much more general question. Are you familiar
15 with the ARMPS program?

16 A. Yes.

17 Q. Have you used that software?

18 A. Yes.

19 Q. Have you looked at, whether as part of that
20 program, that program looks at both bituminous and
21 subbituminous coal?

22 A. I am aware of -- that there is no subbituminous
23 strength coal that's given in the program.

24 Q. Okay. You mentioned that MSHA's goal is the
25 safety of miners, right?

1 A. Yes.

2 Q. So at least in your experience, MSHA doesn't
3 want a mine area to cave in because it could endanger the
4 safety of miners, right?

5 MS. ANDERSON: Objection. Again -- I mean,
6 Mr. Pope is trying to limit Dr. Marino's testimony about
7 MSHA and his expertise related to what MSHA does or doesn't
8 do, and this is calling for that testimony. So, I mean,
9 I'd like to revisit some of his earlier objections, but...

10 MR. POPE: Dr. Bagley, as you said, you've
11 allowed this testimony --

12 CHAIRMAN BAGLEY: Yeah.

13 MR. POPE: -- in his discussion about the
14 mission statement.

15 CHAIRMAN BAGLEY: I think it's relevant.
16 Go ahead.

17 THE WITNESS: Can I give a qualification to
18 my answer?

19 CHAIRMAN BAGLEY: Sure.

20 THE WITNESS: Okay. So can you ask the
21 question again, please?

22 Q. (BY MR. POPE) Absolutely. You would agree that
23 MSHA, because it cares -- its goal is to protect miners,
24 doesn't want a mine -- mine area to collapse because that
25 could endanger the safety of miners?

1 A. Yes. And one of the distinctions that you have
2 is ground control. Ground control is typically related to
3 safety. So we're looking at short-term conditions, when
4 the miners are in, not when it's abandoned. So the safety
5 factors that you would use -- what you're concerned about
6 is just the local cave-in, you know, that small cave-ins
7 that can hit a miner and cause injury. Different focus
8 than is it going to chimney up in a year or three years or
9 50 years? So they don't -- they don't look at that.

10 Q. Thank you, Dr. Marino.

11 Let's talk about some of the substantive
12 conclusions you drew in your expert report. I'd like to
13 pull up on the screen DEQ Exhibit 12-121.

14 Dr. Marino, do you recognize this as Figure
15 MP.1-3 from the Brook Mine plan?

16 A. I don't remember the trees and the -- I don't
17 think that -- that's in my exhibit, is it? I don't think
18 so. And these other cloudy spots.

19 Q. So is that a, no, you do not recognize it?

20 A. I'd have to look at it in detail, but it looks
21 generally correct.

22 Q. Okay. And it's fair to say that you used this
23 schematic in preparing the cross-section we saw that had
24 web and pillar heights and width, right?

25 A. Yes.

1 MR. POPE: Carri, can you highlight the
2 very bottom where it says figure MP.1-3.

3 Q. (BY MR. POPE) Dr. Marino, you're aware this
4 states it is a generalized schematic of the highwall
5 mining operation?

6 A. Yes. And if I can give a qualification?

7 Q. Not right now.

8 MR. POPE: If you would exit out of that,
9 please, Carri, and blow up the nomenclature section,
10 please.

11 Q. (BY MR. POPE) As you -- as we mentioned a
12 moment ago, you used this in developing the heights and
13 widths in the figure in your report, right?

14 A. I used this to develop the heights and widths?
15 No. I got the heights and widths from the text.

16 Q. I'll ask the question about that in just a
17 moment.

18 Dr. Marino, you would agree with me that the
19 figure MP.1-3, which is a generalized schematic, indicates
20 on it that it is not to scale?

21 A. Okay. Yeah.

22 Q. Okay. You mentioned just a moment ago that you
23 pulled the heights and widths from the permit application.
24 Dr. Marino, you would agree that there are no specific
25 heights and widths for any of the trenches specified in

1 the permit application?

2 A. We're not talking -- this is not related to what
3 you're talking about. You're talking about trenches,
4 right?

5 Q. Let me re-ask the question. If I got you
6 confused, please let me know.

7 You stated a moment ago that you took the
8 heights and widths for various web and barrier pillars
9 from the text of the permit application, right?

10 A. I took -- for this diagram, I took the width of
11 the openings and the pillars. And I also put on the
12 drawing the potential extraction heights range that the
13 miner can utilize.

14 Q. And I just wanted -- I want to be clear here. I
15 thought I heard you testify a moment ago that you took the
16 heights and widths of barrier and web pillars from the
17 text of the permit application. Is that true?

18 A. Are we relating to this drawing or we just
19 talking in general.

20 Q. I'm talking in general in terms of your opinions
21 about heights and widths and how they factor into
22 stability and subsidence.

23 A. Okay.

24 Q. My question is, is it true that you testified a
25 moment ago that you pulled the heights and widths of web

1 and barrier pillars from the text of the permit
2 application?

3 A. I pulled the widths of the openings and the
4 pillars from the text. I determined the heights based on
5 the coal thicknesses that were provided.

6 Q. All right. I'm glad we cleared that up. My
7 ultimate question is you're aware that the text of the
8 permit application does not state anywhere the heights and
9 widths of web or barrier pillars for any of the areas in
10 the mine plan?

11 A. It just gives typical. It says typical.

12 Q. Okay.

13 A. And that comes to the crux of the matter.
14 There's nothing to go off.

15 Q. Understanding that, Dr. Marino. I want to turn
16 to extraction ratios. You testified on direct that you
17 believe the extraction ratios are somewhere between 60 to
18 70 percent, right?

19 A. Yes. In the panel areas.

20 Q. Yes. You're aware that the permit applications
21 states that the extraction ratios will be 45 to
22 60 percent?

23 A. Can you show me where that says that?

24 Q. Dr. Marino, my question is simply are you aware
25 that the permit application states the extraction ratios

1 will be 45 to 60 percent?

2 A. No.

3 Q. You testified on direct that there was no
4 strength data in the permit application. I'd like to go
5 to DEQ 5 -- Exhibit 5-202.

6 MR. POPE: Pull up the text, please, Carri.

7 Q. (BY MR. POPE) In this portion of Addendum D5,
8 you would agree with me, Dr. Marino, this section states
9 it is the unconfined compressive strength ASTM D 7011
10 Method D.

11 A. Yes. I've reviewed that actual standard.

12 Q. Let's turn to the next page, DEQ 5-203. I'll
13 blow up the table in the middle of the page. Near the
14 right-hand side, there is a heading that says Compressive
15 Strength and in parentheses it says PSI. Do you see that,
16 Dr. Marino?

17 A. Yes. I'm familiar with that table.

18 Q. All right. On the left-hand side there's a
19 portion that says Rock Type, and it says coal underneath
20 it, doesn't it?

21 A. Yes.

22 Q. And the PSI -- the compressive strength in PSI
23 for the coal, at least for boring R13-019, is 1460 PSI,
24 right?

25 A. Yes. Can I qualify?

1 Q. I'm sure Ms. Anderson will give you that
2 opportunity.

3 A. Okay.

4 Q. You mentioned near the end of your direct that
5 the -- your review is that there should be unlike -- it
6 should be subsidence in the area should be unlikely as a
7 result of the mining, right?

8 A. Say that again.

9 Q. Yeah, I jumbled my own words up. I apologize.
10 Your opinion in your expert report in which you
11 testified on direct was that the subsidence control plan
12 in the permit application should be designed such that
13 subsidence is unlikely, right?

14 A. Yes.

15 Q. But you would agree that the unlikely standard
16 you have used does not come from any Wyoming statute
17 regulation nor DEQ guideline?

18 A. Yes.

19 Q. Dr. Marino, you spoke with Ms. Anderson about a
20 picture of the permit area and it had pockmarks of
21 subsidence. Do you recall that?

22 A. Yes.

23 Q. And there was -- as I recall, there was a yellow
24 line around that area, right?

25 A. Yes.

1 Q. All right. You would agree with me that that
2 subsidence in that area is likely from historic mining in
3 that area?

4 A. Yes.

5 Q. But you're aware that even in the areas of
6 historic mining there are places where there are no
7 subsidence, right?

8 A. To date, yes.

9 Q. And you're also aware that the historic mining
10 done in that area was often a room and pillar method where
11 they retreat-mined the pillars, right?

12 A. I am aware that in certain areas that's the
13 case. I don't believe that's the case in the area
14 outlined above.

15 Q. And I just want to be clear so we all know what
16 we mean. Retreat pillar mining is a method by which as
17 the mine exits the area it has already mined, it extracts
18 the coal pillars holding up that area, right?

19 A. Yes. Or, in other words, second mining. When
20 you do retreat mining, normally that's considered planned
21 subsidence. There's two ways a subsidence control plan
22 can operate. One is unplanned. One is planned. Planned
23 is where you have high extraction mining, and they extract
24 the pillars and they plan for the surface to collapse for
25 subsidence to occur. It is done in a controlled way. And

1 they know about approximately how much subsidence occurs.
2 So if you have structures, you have some idea of when that
3 structure's going to be subsided and you can take
4 mitigation measures to help assist with any subsidence
5 damage.

6 Q. Dr. Marino, I heard you testify on direct that
7 at least in your experience, you had never seen a permit
8 that said one month before mining it will submit a design.
9 Do you recall that?

10 A. I didn't say in those words, no.

11 Q. But I did hear you say that at least there would
12 be a one-month time gap between submitting the design and
13 mining. You're aware, though, that the permit application
14 does not state that the ground control plan will be
15 submitted one month before mining begins.

16 A. Okay. Are we talking about the subsidence
17 control plan or the ground control plan?

18 Q. Ground control plan.

19 A. So can you restate your question, please?

20 Q. Absolutely. You're aware that the permit
21 application does not state that the ground control plan
22 will be submitted one month before mining begins?

23 A. I don't know. I don't remember. But I don't
24 see the relevance. I mean, we're talking about a
25 subsidence plan, not a ground control plan.

1 Q. I understand there's at least a disconnect
2 between Brook and everyone else on that front, and that's
3 fair.

4 You're aware, though, that before any mining can
5 take place at the Brook Mine, MSHA must approve a ground
6 control plan?

7 A. Yes.

8 MR. POPE: Dr. Marino, thank you very much.
9 I have no further questions.

10 THE WITNESS: Thank you.

11 CHAIRMAN BAGLEY: All right. Thank you.

12 It's just you and I, Nick. Do you have any
13 questions?

14 COUNCIL MEMBER AGOPIAN: No. The questions
15 that I had written down have already all been answered.

16 CHAIRMAN BAGLEY: Thank you. I have some
17 questions, Dr. Marino. Thank you for coming back.

18 EXAMINATION

19 Q. (BY CHAIRMAN BAGLEY) So I guess I have a minor
20 complaint. I would have liked to have seen the formula,
21 but I guess that's just me and you --

22 A. Being an engineer.

23 Q. Yeah, being an engineer. So -- oh, well?

24 A. I mean, I -- we can submit it later if you want,
25 if you need to see it.

1 Q. I was mostly joking.

2 Let me go back to a question. You were talking
3 about your experience. As I've listened to the testimony
4 and tried to understand what the plan is, my understanding
5 kind of boiled down to there's seven major areas or
6 trenches that will be constructed over time, and that
7 they'll go in and construct a box cut or trench or
8 whatever they call it, and then go in and highwall mine
9 and move on to the next one.

10 The -- would you expect, just in your
11 experience, that you'd have detailed subsidence plans for
12 all seven of those prior to starting one of them?

13 A. Yes. Yes. I mean, to me, the most reasonable
14 way would be you prepare one for one trench or two
15 trenches, and you have all the information you need. You
16 get that approved, and then you have significant revisions
17 after that. That's provided in the regulations, that I
18 understand from other states, and I assume they exist in
19 Wyoming because they're federal standards. And so you
20 would submit -- you submit, okay, I want to now trench
21 mine 3 and 4. Here's the data. Here's the analysis. DEQ
22 reviews that. There's a public hearing about it. And
23 then it -- if it gets approved, it gets approved, and they
24 go ahead and do the work.

25 Q. Okay. So let me -- I think you answered my

1 question. Just let me be sure.

2 A. I --

3 Q. So I want to go and do TR-1.

4 A. Okay.

5 Q. And so I should have a detailed subsidence
6 control plan, detailed technically -- by our definition of
7 technical -- prior to being allowed to mine that. But I
8 don't necessarily need one for TR-2 yet.

9 A. Right.

10 Q. Okay. So that -- of all seven that are shown we
11 really should have one defined, but then before they go to
12 the next one, we'd expect to have the same thing --

13 A. The same thing, different --

14 Q. And then you call that a significant revision?

15 A. Yes.

16 Q. Okay. Thank you.

17 A. And if I can add?

18 Q. Uh-huh.

19 A. I just worked on one for Illinois where the mine
20 is quite old. In fact, they've had a permit since the
21 early '80s. And they've worked off significant revisions
22 over the years. This last one was about mining underneath
23 an impoundment -- reservoir impoundment. So I was
24 consulted by the City to look at the significance of
25 mining, and we worked out a plan of how to protect those

1 dams. Okay? Subsidencewise. And that was all the
2 subsidence control plan. There was no MSHA involved.
3 MSHA had nothing to do with it. It was more the effects
4 of the surface on the public.

5 Q. Okay. Good. Thank you.

6 So the question that folks have danced around, I
7 guess, let's just try to answer it. And it doesn't have
8 to be a yes or no answer. In your opinion, will
9 subsidence occur at the Brook Mine facility?

10 A. Given the description of claystone and I talked
11 to you about -- I'm -- I'm concerned about slope stability
12 problems, but it's not a subsidence issue. That's more
13 MSHA. But you have claystone. It's going to break down
14 to a point where it's going to be soil like. So if you
15 don't take those things into account, I believe we're
16 going to have subsidence problems.

17 And there's no -- there's no testing or anything
18 to tell us otherwise that -- you know, how that's going to
19 be mitigated.

20 Q. Okay. So -- because you had said in one of
21 your -- on your conclusions, and I put little quotes
22 around it, serious subsidence risk.

23 A. As it -- as the permit -- as the data exists in
24 the permit currently.

25 Q. Okay. So there's a serious subsidence risk, and

1 the reason for that, in your opinion, is there just are
2 not enough data to know one way or the other?

3 A. And just that there -- the description of
4 claystone, as I said in my deposition, that -- I don't
5 believe it's claystone, but as an engineer, I work off
6 what is given. It says it's claystone. But testing can
7 prove it wrong and say, no, it's not claystone. It's a
8 siltstone. It's, you know, shale that's durable. That
9 changes the picture completely, right? But we don't have
10 the engineering data. It's all just narrative.

11 Q. Okay. Okay. So that -- that -- that's what I
12 thought. I just wanted to be clear that I understood
13 that. I'll ask this question. And, again, this doesn't
14 have to be a yes or no answer. Actually it's a question
15 I'm asking you as an expert, simply because it's a
16 question the council has to try to figure out too.

17 If there's subsidence, will it cause any
18 problems?

19 A. Well, is the -- that's an environmental
20 question. Environmental engineering question.
21 Geohydrologist question. Which I can only speak for
22 subsidence risk. If it was structures, I could expound
23 upon because I've done analysis of damage to structures
24 and pipelines and that sort of thing for subsidence, but
25 environmental/agricultural issues, that's an agricultural

1 engineer or something for an environmental engineer.

2 Q. Okay. That's all right. Worth a try.

3 A. Yeah.

4 Q. Now, we saw a District 9 form provided -- be
5 submitted, presumably District 9 of MSHA. In your
6 opinion, would that -- completing that form, regardless of
7 when -- I'm not asking when -- completing that form, would
8 that provide you enough information to further evaluate
9 the subsidence risk?

10 A. Further evaluate, yes. Sufficient, I don't
11 think so. Because they're concerned about mine safety,
12 and their concern is short term. So you see the safety
13 factor of 1.3, that's a short-term safety factor. Long
14 term is going to be 1.6 to 2, depending on the
15 design -- type of design.

16 So, again, different focus. You know, we showed
17 you the mission statement. This says nothing about
18 subsidence in it. It's more concerned about, you know,
19 safety and health issues related to mining.

20 Q. So by completing that form, which looks like it
21 would require a lot more sampling than currently exists --

22 A. Absolutely, it will.

23 Q. -- it still may not provide enough information
24 to deal with long-term subsidence issues?

25 A. Right. And the -- you know, we don't have --

1 what we have here, we don't have miners going into
2 entries, right? This is all done remotely. So don't have
3 to worry about caves. The only thing they have to worry
4 about is the instability of the mine as it affects the
5 slope. You following what I'm saying?

6 Q. Uh-huh.

7 A. So the near field affects instability on the
8 slope, because then you're going to have slope failure.

9 Q. I guess I imagine may also -- where it subsides
10 in on the continuous miner, that might hurt them. There
11 may not be a person in that mine, but it still may be
12 considered in that manner. I guess I might if I was MSHA.
13 But I see what you're saying.

14 A. Yeah, how would you go back in there? You have
15 the roof -- in order to go into the entry, you have to
16 have a roof bolt plan. What's called a roof bolt plan.
17 It's basically still bars that you nail into the roof that
18 hold the roof stable and keep it intact. They're not
19 going to do that in this case. It's all remote behind it.
20 So there's not going to be miners going in. If there is,
21 they have to do this whole roof bolt plan, and that's
22 going to be expensive to do that.

23 CHAIRMAN BAGLEY: Okay. Thank you. That
24 answered all my questions.

25 Before we go back to redirect, I just want to get

1 an idea, Ms. Anderson, how long do you think redirect will
2 take?

3 MS. ANDERSON: Not long, I don't think. I
4 think you actually covered some of the questions we were
5 just going to cover, so...

6 MR. GILBERTZ: My suggestion is you're
7 probably going to be more efficient if they take their
8 lunch break. Probably be way more efficient.

9 CHAIRMAN BAGLEY: That's what I'm getting
10 at.

11 MS. ANDERSON: Yeah.

12 CHAIRMAN BAGLEY: It's 5 to 12:00. Should
13 we take a lunch break, or if you have one minute of
14 redirect, I'd say finish.

15 MS. ANDERSON: It's going to be a little
16 longer than that.

17 CHAIRMAN BAGLEY: Okay. So let's go ahead
18 and take a break for lunch. Let's be back here at 1 p.m.

19 MS. ANDERSON: Okay.

20 (Hearing proceedings recessed

21 11:51 a.m. to 1:00 p.m.)

22 CHAIRMAN BAGLEY: All right. We're all
23 back, fueled, so let's continue.

24 Ms. Anderson, redirect.

25 MS. ANDERSON: Thank you, Dr. Bagley.

1 REDIRECT EXAMINATION

2 Q. (BY MS. ANDERSON) Dr. Marino, I speak lawyer.
3 You speak engineer. So let me ask you a question this
4 way. I saw you making notes about some of the things you
5 wanted to add to the questions being asked by Mr. Pope.
6 Could you relay those comments to the council?

7 A. Sure. There was one section that was shown that
8 talked about planned to do tensile strength tests on the
9 coal. There's the coal pillar design. That type of test
10 is not done for coal strength design. It indicates a lack
11 of understanding. So the way we wrote that for the type
12 of test, which should be -- which are compression tests.
13 Normally, when we run our laboratory cube test, one-to-one
14 side ratios, coal is known to have a strength change as it
15 grows in size. Because I talk about before, the
16 structure, it has in it micro fractures -- not micro --
17 fractures that are coal cleats, which are vertical
18 discontinuous fractures that may be 1 or 2 inches long.
19 And so as -- as you have a greater mass, you have less --
20 more of those, and the strength decreases, you get to a
21 certain point which had been tested in the past to be
22 about 3 feet in size, and that's when you come up with
23 that -- that's going to be the ultimate cube strength of
24 the coal. Then we have to apply to the dimensions of the
25 pillar: the height of the pillar, the width and length of

1 the pillar.

2 So using tensile strength doesn't get you there.

3 And you have to keep in mind that you're testing just a
4 piece like this and you have to have a way to understand
5 how it changes when it's larger. And for subbituminous
6 coal, I don't know of any studies that have been done to
7 do that, but there are equations that have been used for
8 bituminous coal that you could use to extrapolate what
9 that strength is from laboratory standards.

10 I also wanted to comment on -- it was brought up
11 about the testing that was done, that I didn't acknowledge
12 the testing. I did in my report. Under examination today
13 I just -- it's so little that I thought of it as not
14 deemed relevant. They did one compression test on the
15 coal. One seam for -- as I said before, the proposed mine
16 is 7 miles long, and it's one test. There's potentially
17 four seams that are going to be mined. Nowhere -- it
18 means nothing to me, one test.

19 The other thing that I think was a little bit
20 misconstrued is I was asked about extraction rates --
21 ratios where it states that it was 45 to 60 percent. It's
22 been brought up in previous testimony. When I read --
23 when you read the application, it doesn't say coal
24 extraction. It says coal recovery efficiency. In mining
25 that's a different terminology. What that means is the

1 efficiency of the -- how much coal you get after you
2 process it. Take the bulk coal and this is the percent
3 you're going to have.

4 Also, if we look at it in terms of extraction --
5 that's just a general number. What we're interested in is
6 the areas between -- the areas where there's going to be
7 the higher extraction areas, right? So these are general
8 numbers that encompasses the whole complex. We're looking
9 at where we have the smaller web pillars and we have the
10 barrier pillars that isolate, right? So where the
11 extraction areas is where you're going to have the higher
12 stress conditions. So those are the things you need to
13 focus on when you're doing stability analysis.

14 I think that those three things are what I'm
15 looking for.

16 Q. Okay. Great.

17 And just to recap here, one of your main
18 conclusions is that based on the information available to
19 you at this time, that there is a likely risk of
20 subsidence at this mine?

21 A. Yes.

22 Q. And given that, and based on your experience,
23 could you expound a little bit on some of the impacts to
24 agricultural lands that could occur from subsidence?

25 A. I could just talk about my experience.

1 MR. POPE: Dr. Bagley, I apologize again,
2 the broken record. These are not opinions in Mr. [sic]
3 Marino's expert report. The impact on --

4 CHAIRMAN BAGLEY: Yeah, the impact on
5 agricultural seems a bit afar from subsidence.

6 MS. ANDERSON: And, Dr. Bagley, I was
7 merely following up, asking the question you asked about so
8 there's going to be subsidence, then what? I'm kind of
9 trying to get maybe the next line of analysis there.

10 CHAIRMAN BAGLEY: Go ahead and answer it
11 based on your experience in the field. You may have some
12 opinions that could be useful.

13 A. I've seen where we don't have appropriate
14 drainage of a farm field where it's inhibiting the growth
15 of plants, and there's been damage as a result. I've seen
16 where they haven't been able to regrow the -- the crops
17 that used to grow there in the density it used to because
18 now the water table's at a different level.

19 You know, like I said before, I'm not an
20 agricultural engineer, and I can't go into detail. I can
21 just say about my observations. In terms of land use,
22 your proprietor value, especially if it's known to have
23 subsidence, will decrease. I worked with a lot of
24 developers that wanted to develop over properties. If
25 it's mined out, you know, their first inkling is is there

1 a better place to go? We don't want to deal with it.

2 You know, so there's -- there is a property
3 value aspect to it. I know this is out in the rural area,
4 so I'm not sure how much applicability that has. Maybe it
5 does in the future. I don't know.

6 Q. (BY MS. ANDERSON) Okay. Thank you.

7 Is there anything else you want to add or
8 clarify for your testimony?

9 A. No, I just wanted to thank everyone here for
10 being so cordial and friendly.

11 MS. ANDERSON: Okay. Thank you. That's
12 all I have for you.

13 CHAIRMAN BAGLEY: Great. Thank you,
14 Dr. Marino.

15 THE WITNESS: Uh-huh.

16 CHAIRMAN BAGLEY: Ms. Anderson, please call
17 your next witness.

18 MS. ANDERSON: Okay. Thank you.

19 Joe, do we have Sue on the line yet or --

20 MR. GIRARDIN: No.

21 MS. ANDERSON: We have a witness
22 availability issue. So our associating hydrogeologist,
23 who's licensed as a geologist here in Wyoming, Sue Spencer,
24 that will be testifying kind of jointly with Mr. Wireman is
25 out in the field, in Pavillion, actually, and she will be

1 available soon.

2 So at this point I would just like to call --
3 she's not in the room right now -- Carol Bilbrough. Is she
4 available or is she going to come back?

5 MR. KUHLMANN: My understanding was yes.
6 Yeah. She should be here shortly. I had no indication
7 that you were going to call her right after lunch, so...

8 MS. ANDERSON: Yeah, no. I'm sorry for
9 that too.

10 MR. GILBERTZ: Perhaps we could just start
11 with Mr. Wireman?

12 MS. ANDERSON: If that's okay with the
13 counsel. And I'll kind of explain what we need to do here
14 with Ms. Spencer. And I think the counsel's very familiar
15 with pro hac vice rules and requirements. So it's very
16 similar to that for geologists. So Mr. Wireman has been a
17 geologist his whole life. He has -- at one time in the
18 past was registered, certified --

19 MR. WIREMAN: In Wyoming.

20 MS. ANDERSON: -- in Wyoming, but he's let
21 that lapse, given his work with EPA, where it was no longer
22 needed. He lives and works in Colorado, primarily. So
23 it's a common practice of the Oil & Gas Commission, for
24 instance, to let an out-of-state geologist associate with
25 an in-state geologist for the purposes of reports and

1 testimony, just to give kind of that additional Wyoming
2 stamp of approval on the out-of-state geologist's
3 recommendations.

4 CHAIRMAN BAGLEY: So the in-state geologist
5 is the one we can't reach right now?

6 MS. ANDERSON: Right. She's the one we
7 can't reach. And that's just because --

8 CHAIRMAN BAGLEY: Mr. Wireman, is that
9 correct?

10 MR. WIREMAN: Yes.

11 CHAIRMAN BAGLEY: But he's also going to be
12 testifying?

13 MS. ANDERSON: Yeah. So he's going to be
14 testifying -- he'll be testifying mainly to the report
15 Ms. Spencer has already certified that meets the standards
16 of a Wyoming professional geologist. But we just want to
17 make sure that Ms. Spencer is available at some point
18 during Mr. Wireman's testimony to also just to affirm to
19 you all that she knows what's going on, and also, you know,
20 gives her stamp of approval, so to speak.

21 CHAIRMAN BAGLEY: Yeah, I'd say let's go
22 ahead and call Mr. Wireman and proceed from there.

23 MR. POPE: Dr. Bagley, understanding for
24 efficiency purposes we're going forward, I do need to put
25 an objection on the record. Without the actual testimony

1 of Ms. Spencer as to the credentials and work that
2 Mr. Wireman did, it is illegal for Mr. Wireman to offer
3 testimony to this council.

4 For purposes of the record, Wyoming Statute
5 33-41-104(a)(iii) indicates that if you are not a licensed
6 professional geologist in the state of Wyoming, you cannot
7 practice geology as it's defined by that act. Testifying
8 in front of the council would be practicing professional
9 geology. I understand at some point Ms. Spencer will get
10 up and testify, but there is a problem there that we will
11 demonstrate to the council, namely that Ms. Spencer has not
12 spoken to Mr. Wireman in verifying any of his findings or
13 opinions. So we think that procedurally should happen
14 first.

15 I understand for the sake of efficiency, the
16 council may want to proceed in a different direction, but
17 for purposes of the record, we want to get that objection
18 out there.

19 MS. ANDERSON: Yeah. And, Dr. Bagley,
20 similar to the line of questioning that Mr. Pope and his
21 colleagues raised on Mr. Gerlach, you know, this is smoke
22 and mirrors here, honestly. And what it does is it -- they
23 don't have much to go on. They're using this forum, when
24 there is another forum, which is the board of professional
25 geology. I think their phrase used was illegal. I don't

1 think Mr. Wireman is going to end up in jail here giving
2 testimony to you based on his findings and review. And,
3 again, I think if there's a professional complaint that
4 needs to be lodged by the company, the proper place to do
5 that is the Board of Geology.

6 CHAIRMAN BAGLEY: Yeah. We're kind of in
7 an interesting situation. Yeah, it looks like we have --
8 is the DEQ witness here?

9 MS. ANDERSON: Sure. Yeah, we can --

10 CHAIRMAN BAGLEY: I don't want anybody to
11 go to jail for testifying, and I don't want to have to take
12 an executive session to ask my lawyer what the situation is
13 either. So if we can move on with something that should be
14 more straightforward, let's do that.

15 MS. ANDERSON: Okay. And in the meantime,
16 Ms. Morrison will try and reach Ms. Spencer and hopefully
17 we can clear this all up. Again, she's just somewhere in
18 Fremont County and I think the cell coverage is a little
19 bit limited, and we're trying to do what we can.

20 CHAIRMAN BAGLEY: Nick, go ahead.

21 COUNCIL MEMBER AGOPIAN: I mean, I -- yes,
22 we're -- I live in Wyoming. I'm familiar with that
23 scenario, but we've had two weeks to prepare for today,
24 knowing that this was the day. If this was a witness that
25 you wanted to call, then it seems like preparations would

1 have been made. So I think we have -- we have -- as the
2 hearing examiner's indicated, we have an out here for the
3 next however long to move forward, but if we're not
4 prepared to do it in accordance with what we think is
5 proper, then we can't do it.

6 CHAIRMAN BAGLEY: Let's go ahead -- thank
7 you, Councilman. Let's go ahead with your DEQ witness.

8 MS. ANDERSON: Okay. With that, I call
9 Carol Bilbrough to the stand.

10 (Witness sworn.)

11 CAROL BILBROUGH,
12 called for examination by PRBRC, being first duly sworn,
13 testified as follows:

14 DIRECT EXAMINATION

15 Q. (BY MS. ANDERSON) All right. Ms. Bilbrough,
16 can you please state your name for the record.

17 A. Carol Bilbrough.

18 Q. And could you explain what you do?

19 A. At the DEQ? I am the program manager for the
20 division support services. So I oversee the group of
21 people who provide services across the division.

22 Q. Okay. And how do you work directly with the
23 Land Quality Division?

24 A. Direct -- well, I supervise the Land Quality --
25 you know, several people in the Land Quality Division.

1 The hydrologists, who perform CHIAs, the records manager
2 group, the people who do rulemaking, who oversee forms and
3 create forms, manage the Web page. Sort of the
4 overarching duties of divisionwide services as opposed to
5 a field officer services.

6 Q. So you're a manager, so to speak, for DEQ?

7 A. Yeah. Yes.

8 Q. Okay. And we heard a little bit about the chain
9 of commands in DEQ. Where do you fall in that chain of
10 command for this permit and other Land Quality work?

11 A. So there are four -- well, five now -- major
12 groups in the Land Quality Division. Three field offices,
13 Cheyenne, Lander and Sheridan. And then the division
14 support group, which is what I manage. And then there's a
15 uranium program that's just now standing up. The five of
16 us are all equal in terms of our management level and our
17 management standing. And we all report to Mr. Wendtland,
18 the administrator of the Land Quality Division.

19 Q. Okay. Perfect. How are you involved in this
20 permit application?

21 A. My involvement was very superficial. I -- as
22 the division services support group manager, I oversee at
23 a very high level all the permit actions that are
24 happening in the Land Quality Division. Are they
25 proceeding as they need to be? Are we at the division

1 level completing all of the requirements that we need to
2 complete? Are we running into any issues with records
3 management or records keeping or the documents or anything
4 else? Is there any kind of support that my staff needs,
5 fulfilling their individual review requirements and things
6 like that. This particular permit I didn't have much
7 involvement at all until the first hearing that we had.
8 And by the first hearing, I mean two weeks ago in
9 Sheridan.

10 Q. Okay. Have you had any conversations with your
11 colleagues at DEQ about the way forward for the permit?

12 MR. KUHLMANN: I'm going to object.

13 MS. ANDERSON: I know that's a little
14 general. I'll rephrase a little bit.

15 Q. (BY MS. ANDERSON) Okay. So one thing -- you
16 were here for the whole hearing in Sheridan, right?

17 A. Yes, I was.

18 Q. Did you recall testimony about some additional
19 work that needs to still happen, maybe some conditions of
20 approval that could be thought about?

21 MR. KUHLMANN: Objection. I think it's
22 mischaracterizing previous testimony to talk about things
23 that need to still happen. I don't think anyone's ever
24 said that.

25 MS. ANDERSON: Okay. I'll try again.

1 A. We talked about two things.

2 CHAIRMAN BAGLEY: Wait a minute. Wait a
3 minute.

4 Go ahead and try a different type of question.

5 MS. ANDERSON: Well, I think if the witness
6 wants to answer, we can go --

7 CHAIRMAN BAGLEY: No. Only if I say so.

8 THE WITNESS: Sorry.

9 CHAIRMAN BAGLEY: So...

10 Q. (BY MS. ANDERSON) So we heard a little bit
11 about some additional water data that may need to be
12 compiled and collected. Do you remember that testimony?

13 A. I don't recall -- I recall some of that
14 testimony --

15 Q. Yeah.

16 A. -- but not exactly whose testimony it was.

17 Q. Okay. That's fine.

18 Do you recall testimony about the Cumulative
19 Hydrologic Impact Assessment --

20 MR. KUHLMANN: Objection.

21 Q. (BY MS. ANDERSON) -- and that that has not --

22 COUNCIL MEMBER AGOPIAN: Please stop when
23 there's an objection.

24 MS. ANDERSON: Yes.

25 MR. KUHLMANN: I believe Ms. Anderson is

1 going down an irrelevant route, which is the Cumulative
2 Hydrologic Impact Assessment, which is not a requirement
3 for technically adequate and it's not part of the permit
4 application.

5 MS. ANDERSON: So, Dr. Bagley, where I'm
6 going here -- I think it's just a question on everyone's
7 mind right now -- is the process. So there's your process
8 of the council, and then there's the DEQ process. And I'm
9 trying to figure out, as someone who objected to this
10 permit application, how we square those two processes and
11 where we, as the public, are going to be involved going
12 forward.

13 MR. KUHLMANN: I --

14 CHAIRMAN BAGLEY: That's not why I'm here.
15 We're here because we're following -- we're trying to make
16 it -- hear all the evidence related to the permit
17 application. I wondered about the cumulative hydrologic
18 thing two weeks ago, if it wasn't a permit requirement.
19 But, you know, we let that go -- that evidence be presented
20 because we were interested in learning more -- I was
21 interested in learning more about the hydrological issues
22 of the situation.

23 So, no, I'm not really interested in getting into
24 a discussion about DEQ's process or regulations.

25 MS. ANDERSON: I think part --

1 CHAIRMAN BAGLEY: It is what it is.

2 MS. ANDERSON: -- of the questioning,
3 Dr. Bagley, that there's some findings that need to happen
4 under the statutes, and those findings have not yet been
5 made. So I want to know who has to make those findings,
6 when they're going to be made, and how we, as the public,
7 are going to participate in this process.

8 MR. KUHLMANN: Dr. Bagley.

9 MS. ANDERSON: And I need someone from DEQ
10 to answer those questions for me.

11 MR. KUHLMANN: I appreciate that she has
12 those questions, but I don't believe there is a public
13 comment or question hearing. And I don't believe this is
14 the proper venue to ask questions unrelated to the permit
15 application's technical adequacy.

16 CHAIRMAN BAGLEY: There's a different --

17 MS. ANDERSON: I'm just wondering -- I
18 mean, part of it is how is the council going to be able to
19 issue findings of fact and conclusions of law on findings
20 in Section 406 that have not yet been made.

21 MR. KUHLMANN: I believe there may be a
22 disagreement between the attorneys. But findings of 406
23 are not outside of the A and B in the technically adequate
24 determinations. They're not what needs to be determined
25 prior to going to public comment and this proceeding here.

1 Cumulative -- a Cumulative Hydrologic Impact Assessment is
2 a finding, I believe, under Section 35-11-406(n), and those
3 findings do not have to be made prior to permit going for
4 public comment or to be technically adequate. They would
5 have to be made prior to issuing the permit, but that is
6 not the stage we're at here.

7 MS. ANDERSON: So I guess the stage we're
8 going to be on eventually is you're going to issue a
9 decision, 15 days later DEQ has to grant or deny a permit.

10 CHAIRMAN BAGLEY: Right. And then after a
11 permit -- my understanding is after a permit is, let's say,
12 granted in whatever form, then there's another public
13 comment period, is there? Or am I misunderstanding this?

14 MR. KUHLMANN: Dr. Bagley, I believe that
15 could be a final action by the director that could be
16 appealed.

17 MS. ANDERSON: But there will not be
18 another public comment opportunity.

19 CHAIRMAN BAGLEY: Not another public
20 comment, okay. But it could be appealed and we could end
21 up in another contested case hearing on that, if someone --

22 MS. ANDERSON: Supposedly. Or -- I mean,
23 we haven't evaluated that. Again, this hasn't happened in
24 Wyoming in decades.

25 CHAIRMAN BAGLEY: So I guess my question

1 for you is if it we're asking a witness what she heard at
2 the -- at the hearing two weeks ago, I'm not sure how that
3 is moving us forward.

4 MS. ANDERSON: Yeah.

5 CHAIRMAN BAGLEY: Because we can all look
6 that up. I think it's online in the video.

7 MS. ANDERSON: I think my questions are
8 really going to be about asking the manager in DEQ what she
9 sees the process as going forward. If you don't think
10 that's relevant, that's okay, but that's -- I thought it
11 would be helpful for everyone in the room to get DEQ's
12 opinions and perspective on that.

13 CHAIRMAN BAGLEY: So after we issue our --
14 whatever finding -- whatever -- whatever we come up with,
15 the council comes up with, you want to know what the next
16 steps are from DEQ's standpoint, like following DEQ's
17 procedures.

18 MS. ANDERSON: Right. And how they're
19 going to do this body of work in 15 days.

20 MR. KUHLMANN: Dr. Bagley, I think a couple
21 of points. One, that would be entirely speculative at this
22 point in the process because we don't know what the
23 council's decision will be. We don't know the time frame
24 of what may be required or not required. Also, I don't
25 know that what is going to happen in the future has

1 anything to do with what is in the permit application today
2 and whether or not that meets the technical adequacy
3 requirements in the statutes and regulations.

4 CHAIRMAN BAGLEY: Yeah. And I guess the --
5 I am interested in what happens after council does whatever
6 it's going to do. We don't know what that's going to be.
7 That's why we're still in a hearing.

8 I'm not interested in speculation about how DEQ
9 might do or not do something. I mean, they're
10 professionals in what they do, and they will follow the law
11 as well. So that I'm not interested in speculation. If
12 we're looking at, you know, what are the next steps that
13 DEQ follows after this, I mean, I would be interested to
14 hear that just because it's something I continually like to
15 learn. But I'm not interested in speculation, whether we
16 think DEQ could do this or do that. They don't know what
17 they're going to do. We haven't even ruled yet.

18 So if we can keep -- so I'll allow some questions
19 along that line, but not speculative questions.

20 MR. KUHLMANN: Dr. Bagley, I apologize for
21 speaking again. I don't know that there's -- if we're
22 entirely talking about if the questions are going to what
23 happens next with this permit, that is entirely in the
24 future and all of those questions would be speculative. So
25 I don't know that there's a way to divide that.

1 CHAIRMAN BAGLEY: I disagree. There's a
2 process that will be followed, right? We make a decision,
3 and there's two choices -- or there's a couple options. We
4 say everybody goes back to the drawing board, and then
5 there's one set of process. And we say, oh, well, these
6 things might need fixed, and then there's where we say
7 everything's good. So there's like three different
8 alternatives. And I imagine that somewhere it says, next
9 step, let's say the council says everything's great, what
10 happens next? You know, it's already spelled out. You
11 got -- you got in terms of, well, the director does this
12 and then there's a possible for appeal or something.
13 That's what I'm getting at. Not -- not the details of,
14 well, we're going to go -- you don't know what you'd change
15 if there was anything -- because we haven't said anything.
16 But in terms of actions, there appears to be, as I see it,
17 like three pathways that lead to three different step --
18 processes that could follow.

19 MR. KUHLMANN: I guess I would only respond
20 that I believe that the process is governed by laws, and
21 that the statutes and regulations would be what governs,
22 not necessarily what Dr. Bilbrough would say today. And
23 that should speak for itself and would be something that
24 we, as the parties, could provide, I guess, as part of our
25 closing statements, which I believe are going to be written

1 to the council following this hearing.

2 CHAIRMAN BAGLEY: So we can see then what
3 the -- the steps are. Like I said, they're laid out in the
4 law for these different options.

5 Yeah, I mean, I have an interest in knowing that
6 too, because I don't spend all my time reading the law in
7 detail, and I don't imagine a lot of folks do. I'm still
8 going to allow questions related to what Dr. Bilbrough
9 feels the process would be from the standpoint of step
10 one and step two, but not the details. And with the
11 understanding -- and I imagine she'll also help clarify
12 that it's her understanding based on the law, and we'll get
13 details later, but I still -- I would like to hear that.
14 So I'm going to go ahead and allow those -- that line of
15 questions to be asked.

16 MR. KUHLMANN: Okay.

17 MS. ANDERSON: Okay. Thank you. And that
18 sounds great.

19 Q. (BY MS. ANDERSON) So there's three doors,
20 basically, we can go down, it sounds like. So the first
21 one is the council determine -- makes their decision on
22 the permit application and that basically saying, yes, the
23 permit is technically adequate and complete. What would
24 DEQ do then?

25 MR. KUHLMANN: I'm going to object. That

1 was very speculative, and I don't know if she was -- if
2 Ms. Anderson was reading a law to Ms. Bilbrough, asking if
3 she would agree that that's the law or exactly where she's
4 going with that.

5 MS. ANDERSON: So the exact phrase in the
6 statute is the council makes a decision on the permit
7 application. That's all it says. I'm trying to get what
8 does this mean for us here? What does it mean for you as
9 the council? Where do the parties go? What do we even put
10 in our post-hearing briefs on the subject without this
11 clarification?

12 MR. KUHLMANN: I -- I would just respond,
13 again, that is governed by the law, and the parties are, I
14 believe, perfectly capable of interpreting the law and
15 providing the council with recommendations of what they
16 think the next steps would be under the law.

17 CHAIRMAN BAGLEY: So I'm going to jump
18 ahead here, since it sounds like this is a -- question
19 coming up. I want to go ahead and tell you -- I was going
20 to tell you at the end of the hearing, which may be soon --
21 what we will be looking for. And I'll give you times and
22 stuff later, but the proposed -- what we're looking for,
23 from all the parties in part of their closing statement
24 will be proposed findings of fact and conclusions of law
25 focused on the laws that is applicable to this case, which

1 includes citations to the specific legal requirements,
2 statutes and rules the council is required to consider to
3 decide this matter, proposed findings of fact, conclusions
4 of law must also include the necessary facts cited to in
5 the transcript to support your legal conclusions. I'll
6 talk about the transcript later.

7 Because there was also testimony about possible
8 permit conditions or changes, the proposed findings of fact
9 and conclusions of law shall also identify suggested
10 changes or conditions that a party request the council to
11 consider and the legal grounds for such a condition to be
12 part of the permit.

13 So that's what I'm going to be asking for in your
14 closing statements. And then we will do what we need to do
15 after that, but -- so I'll probably say this again at the
16 end, just so nobody forgets.

17 Okay. Got it.

18 So counsel was reminding me that there is a
19 relevancy clause that we need to stick to, and the
20 relevance is the permit -- it's permit application. I am
21 interested in the permit itself as well, even though
22 maybe -- I may be pushing that a little further.

23 So what -- I guess the question to be asked is
24 following on from what Mr. Kuhlmann said, but council makes
25 a decision. I'd be interested to hear the speculation of

1 this witness, who works for the DEQ, as to what would
2 happen after that, and then we will probably push on from
3 there.

4 MS. ANDERSON: Okay. That sounds fine.

5 Q. (BY MS. ANDERSON) Is that something you feel
6 comfortable answering?

7 A. My answer's going to be we'll do what the
8 statute tells us to do. So we'll follow the directive of
9 the EQC, and then we'll do what the statutes tell us to
10 do.

11 MS. ANDERSON: That's fine. I actually
12 wanted to give DEQ an opportunity to talk to you, but it
13 seems like they don't want to. So I think I'm done with
14 this witness.

15 MR. KUHLMANN: I'm going to object to that
16 statement, but...

17 CHAIRMAN BAGLEY: All right. Thank you
18 for --

19 MR. KUHLMANN: I think that's argumentive.

20 CHAIRMAN BAGLEY: -- administering the
21 objection.

22 MS. ANDERSON: I don't know if there's
23 cross-examination by Mr. Gilbertz.

24 CHAIRMAN BAGLEY: Well, we'll follow my
25 little -- for cross-examination.

1 Mr. Gilbertz.

2 MR. GILBERTZ: Nothing from me.

3 CHAIRMAN BAGLEY: Ms. Boomgaarden?

4 MS. BOOMGAARDEN: No questions.

5 CHAIRMAN BAGLEY: Mr. Kuhlmann?

6 MR. KUHLMANN: No questions.

7 MR. POPE: No questions.

8 CHAIRMAN BAGLEY: All right. Thank you.

9 Actually, I do -- do you have any questions? I have --

10 COUNCIL MEMBER AGOPIAN: I don't have any
11 questions.

12 CHAIRMAN BAGLEY: I have a question.

13 EXAMINATION

14 Q. (BY CHAIRMAN BAGLEY) I don't know if you can
15 answer this or not, but you mentioned, you know, when you
16 hear what the council has come up with, of course, that's
17 when you'll know what DEQ needs to do.

18 One of the concerns that we've heard is the
19 opportunity for public input. And we've had public input
20 now as part of the contested case hearing, which is not
21 the friendliest, partly because you get interrupted by
22 objections all the time. But how -- how -- I don't know
23 if you can really answer this or not. But if the council
24 felt that there was a need for more public input and wrote
25 something like that into -- into our findings, not that we

1 would, but if we felt that, how would DEQ go about dealing
2 with that?

3 MR. KUHLMANN: I'm going to just object on
4 speculation. And that's, I guess, a future hypothetical.
5 I understand it was your question, Dr. Bagley.

6 CHAIRMAN BAGLEY: Yeah. Yeah. I know it
7 was a future hypothetical. Yeah, I'm going to go ahead and
8 let her answer my question. Your objection is noted.
9 Thank you.

10 MR. KUHLMANN: Thank you.

11 A. To my knowledge, we haven't encountered a
12 circumstance like that. And it would really be up to
13 Assistant Director Edwards and Director Parfitt as to how
14 we would deal with that kind of circumstance.

15 Q. (BY CHAIRMAN BAGLEY) Okay. That's actually --

16 A. I wish I could give you a more definitive answer
17 than that, but I can't.

18 Q. That was actually what I was wondering,
19 basically, is that something like that happened before.
20 And the answer is I'm hearing not to your knowledge.

21 A. Not to my knowledge.

22 CHAIRMAN BAGLEY: Yeah. Okay. So that was
23 the only question I had.

24 Any redirect, Ms. Anderson?

25 MS. ANDERSON: No. I think I'm fine.

1 Thank you.

2 CHAIRMAN BAGLEY: All right. Thank you,
3 Dr. Bilbrough.

4 Is your witness available?

5 MS. ANDERSON: Yes, she should be. Let's
6 just make sure.

7 Sue, are you on the line?

8 MS. SPENCER: Yes, I am. Yes. Sorry I
9 missed you before.

10 MS. ANDERSON: That's okay. We're just
11 going to make sure everyone can hear you okay.

12 MR. GIRARDIN: She can hear you.

13 MS. ANDERSON: So at this time I would call
14 Sue Spencer to testify:

15 THE REPORTER: Should I swear her in?

16 CHAIRMAN BAGLEY: Yeah. Go ahead and swear
17 her in, please.

18 (Witness sworn.)

19 SUE SPENCER,
20 called for examination by PRBRC, being first duly sworn,
21 testified as follows:

22 MS. ANDERSON: Sue?

23 THE WITNESS: I can't hear very well.

24 MS. ANDERSON: Okay.

25 CHAIRMAN BAGLEY: Can you hear me,

1 Ms. Spencer?

2 THE WITNESS: Yeah, I can hear you.

3 CHAIRMAN BAGLEY: Okay. Ms. or Dr.?

4 Dr. Spencer or Ms. Spencer? Just to be sure.

5 THE WITNESS: Ms.

6 CHAIRMAN BAGLEY: Okay. So the court
7 reporter was asking -- was swearing you in. I'll let her
8 speak again and we'll try again. Try that mic there.
9 Maybe lean towards it.

10 (Witness sworn.)

11 SUE SPENCER,
12 called for examination by PRBRC, being first duly sworn,
13 testified as follows:

14 THE WITNESS: I can't hear what she's
15 saying. It's breaking up very bad.

16 MR. GIRARDIN: Jim's mic is not -- hasn't
17 been used, so I haven't been adjusting for it. Just push
18 yours towards her.

19 CHAIRMAN BAGLEY: Okay. Here. Try that
20 that one.

21 THE REPORTER: Can you hear me?

22 THE WITNESS: Yeah, I can.

23 (Witness sworn.)

24

25

1 SUE SPENCER,

2 called for examination by PRBRC, being first duly sworn,

3 testified as follows:

4 MS. ANDERSON: Okay. Ms. Spencer, you can

5 hear me okay? Sue, are you still there?

6 MR. GIRARDIN: She's not hearing that.

7 CHAIRMAN BAGLEY: Ms. Spencer, this is

8 David Bagley. Can you hear Ms. Anderson when --

9 THE WITNESS: No.

10 CHAIRMAN BAGLEY: -- when she speaks?

11 THE WITNESS: If she just spoke, I didn't

12 hear her.

13 CHAIRMAN BAGLEY: Okay.

14 MR. GIRARDIN: Try it again.

15 MS. ANDERSON: Sue, can you hear me now?

16 CHAIRMAN BAGLEY: We're working to get the

17 microphones calibrated so you're able to hear us,

18 Ms. Spencer.

19 THE WITNESS: Okay. Okay. Thank you.

20 CHAIRMAN BAGLEY: I'm glad to say we can

21 here you fine, which is great.

22 THE WITNESS: Good.

23 (Off-the-record discussion.)

24 CHAIRMAN BAGLEY: What I'd like to do here

25 is take a five-minute recess and let the technical folks

1 get it sorted out.

2 If you can please stay on the line,

3 Ms. Spencer --

4 THE WITNESS: Okay.

5 CHAIRMAN BAGLEY: -- they'll be trying

6 different mics to make sure you can hear.

7 THE WITNESS: Okay. I will. Thank you.

8 CHAIRMAN BAGLEY: Okay. Thank you.

9 (Hearing proceedings recessed

10 1:38 p.m. to 1:52 p.m.)

11 MR. RUBY: Shannon, I give you what we got.

12 And I am sorry for it.

13 DIRECT EXAMINATION

14 Q. (BY MS. ANDERSON) We're back on the record.

15 Sue, can you hear me? Sue, are you there?

16 A. I'm here.

17 Q. You're a little shaky.

18 A. I can hear you fine.

19 MS. ANDERSON: Is that not working?

20 Q. (BY MS. ANDERSON) Okay. We need you to be a
21 little bit clearer for the court reporter. Can you talk
22 slowly?

23 A. Is it clear now?

24 Q. No. It's still really, really fuzzy.

25 A. How about now? Can you hear me?

1 MR. RUBY: It's her phone breaking up.

2 MS. ANDERSON: Yeah.

3 Q. (BY MS. ANDERSON) Sue, you're really hard to
4 hear right now.

5 A. Okay. Well, I -- I can hear you fine, so now
6 we're opposite.

7 MS. ANDERSON: Can we try? No?

8 The court report looking at me like this isn't
9 going to work.

10 Q. (BY MS. ANDERSON) Let's try again. Can you say
11 your name?

12 A. My name is Sue Ann Spencer.

13 Q. Okay. I think we're going to -- we're going to
14 give it a go. Just speak slowly and clearly. And as a
15 reminder, if you can stay on the line during Mr. Wireman's
16 testimony, because we're going to need to ask you some
17 questions at the end too.

18 Okay. Sue, can you state and spell your name
19 for the record?

20 A. Sue Ann Spencer.

21 Q. You broke up again.

22 A. What?

23 Q. Okay. So state your name.

24 A. Sue Ann Spencer.

25 Q. Okay. What is your current title or position?

1 A. Hydrogeologist with Weston Engineering.

2 Q. I think --

3 A. In Laramie.

4 Q. Okay. I think I heard senior hydrogeologist at
5 Western Engineering in Laramie, Wyoming?

6 MR. WIREMAN: Weston.

7 Q. (BY MS. ANDERSON) Weston Engineering.

8 A. Correct.

9 Q. Yeah, the court reporter's not going to be able
10 to get your testimony if this is broken up. But you can
11 hear me okay?

12 A. Yes. I --

13 MS. ANDERSON: Yeah, I mean, Joe, honestly
14 your bars keep going up and down. I mean, it's really -- I
15 think the service here is not very great either.

16 MR. GIRARDIN: It is not. You want to try
17 your phone.

18 MS. ANDERSON: Yeah. You barely have two
19 bars on this phone.

20 Sue, how far are you from a landline?

21 THE WITNESS: Not very far. I'm like about
22 three minutes away.

23 MS. ANDERSON: Can you get to a landline?
24 That's going to be the easier way.

25 THE WITNESS: Yeah, I can.

1 MS. ANDERSON: Okay.

2 THE WITNESS: I'll do that. And I'll call
3 back this number?

4 MS. MORRISON: No, don't call -- call into
5 the --

6 (Off-the-record discussion.)

7 MR. ANDERSON: I was going to say, I think
8 we can hear you now.

9 THE WITNESS: Really?

10 MS. ANDERSON: Yeah. We're going to try
11 again, and we're going to see how far we get. And if not,
12 we're three minutes away from landline.

13 Q. (BY MS. ANDERSON) Okay. Ms. Spencer, could you
14 state your name for the record?

15 A. My name is Sue -- Spencer.

16 Q. Oh, man.

17 CHAIRMAN BAGLEY: We need to go to a
18 landline.

19 MS. ANDERSON: Okay. So Sue, can you go to
20 a landline. And then call in --

21 MR. RUBY: 402 --

22 MS. ANDERSON: How about you just call her?

23 MR. RUBY: Yeah.

24 MS. ANDERSON: We'll call you back in
25 about --

1

2 MR. RUBY: Five.

3 MS. ANDERSON: -- five minutes.

4 MR. RUBY: No hurry.

5 THE WITNESS: Okay.

6 MS. ANDERSON: Okay. Thanks, Sue.

7 Actually we don't know the number of landline.

8 THE WITNESS: I'll just text it to Jill.

9 MS. ANDERSON: Okay. That works. Thank
10 you.

11 (Off-the-record discussion.)

12 CHAIRMAN BAGLEY: So we'll recess for
13 another five minutes so that court reporter can take a
14 break, and we will try again. We'll try one more time.

15 (Hearing proceedings recessed

16 1:59 p.m. to 2:11 p.m.)

17 CHAIRMAN BAGLEY: We are back in session.

18 MR. RUBY: Just don't try and do anything
19 funny while you're here.

20 MS. ANDERSON: You get the comfortable
21 chairs.

22 MR. RUBY: We do.

23 I'm going to go stand off over here.

24 Q. (BY MS. ANDERSON) All right. Ms. Spencer, can
25 you hear me?

1 A. Yes, I can.

2 Q. So this is Shannon Anderson with Powder River
3 Basin Resource Council.

4 Ms. Spencer, just to remind you, you're still
5 under oath.

6 A. Okay.

7 Q. Could you state your name for the record.

8 A. My name is Sue Ann Spencer.

9 Q. Okay. And can you tell us what your current
10 title or position is?

11 A. I'm a senior hydrogeologist with Weston
12 Engineering in Laramie, Wyoming.

13 Q. Okay. Can you tell us a little bit about what
14 you do in that position?

15 A. Yes. I do investigations for water well siting
16 studies. I do hydrogeological studies for -- mainly what
17 we do right now is Water Development Commission projects
18 where we identify locations. The drill wells -- we drill
19 wells and then test them and write reports that describe
20 the optimum conditions and the conditions of the well.

21 Q. Okay. Great. Can you tell the council a little
22 bit about your educational background?

23 A. I have a bachelor's degree in geology from the
24 University of Wyoming, 1980. And I have a master's degree
25 from the University in hydrogeology that I got in 1986.

1 Q. Okay. And, Ms. Spencer, are you a Registered
2 Professional Geologist in Wyoming?

3 A. Yes, I am.

4 Q. Okay. And it's fair to say you specialize in
5 hydrogeology?

6 A. Yes.

7 Q. Okay. And have you had a chance to review
8 Mr. Wireman's expert report for these proceedings?

9 A. Yes, I have.

10 Q. And would you agree that Mr. Wireman's report
11 meets the standards of a Wyoming Professional Geologist?

12 A. Yes, I do.

13 Q. And do you have any concerns about lending your
14 certification, so to speak, to Mr. Wireman's work for
15 these proceedings?

16 A. No. None whatsoever.

17 MS. ANDERSON: Okay. That's all I have for
18 you. There may be some additional questions from the other
19 parties.

20 THE WITNESS: Okay.

21 MS. ANDERSON: Just a reminder to stay on
22 the line through Mr. Wireman's testimony, if you can.

23 THE WITNESS: Okay.

24 MS. ANDERSON: Okay. Thank you.

25 THE WITNESS: Uh-huh.

1 CHAIRMAN BAGLEY: Oh, cross. Thank you.

2 Cross-examination. Mr. Gilbertz, any questions?

3 MR. GILBERTZ: Nothing from me.

4 CHAIRMAN BAGLEY: Ms. Boomgaarden?

5 MS. BOOMGAARDEN: No questions. Thank you.

6 CHAIRMAN BAGLEY: Mr. Kuhlmann.

7 MR. KUHLMANN: No questions. Thank you.

8 CHAIRMAN BAGLEY: Mr. Pope.

9 MR. POPE: I'll come join the hot seat.

10 CHAIRMAN BAGLEY: All right.

11 MS. ANDERSON: And Ms. Spencer can still
12 hear me if I need to object or something, right, from here?
13 Is that okay?

14 MR. RUBY: We'll make it work.

15 MS. ANDERSON: Okay.

16 CROSS-EXAMINATION

17 Q. (BY MR. POPE) Good afternoon, Ms. Spencer.

18 This is Jeff Pope on behalf of Brook Mine. Can you hear
19 me okay?

20 A. Yeah, I can.

21 Q. I just have a couple of questions about your
22 review of Mr. Wireman's report. Did you review any
23 statutes as part of reviewing Mr. Wireman's report?

24 A. No, I did not.

25 Q. Did you review any regulations in your review of

1 Mr. Wireman's report?

2 A. No.

3 Q. Did you yourself look at the Brook Mine permit
4 application when you reviewed Mr. Wireman's report?

5 A. No, I didn't.

6 Q. As I understand it -- and please correct me if
7 I'm wrong -- but when you reviewed Mr. Wireman's report,
8 you had never met him before?

9 A. No I haven't.

10 Q. You haven't -- in reviewing his report,
11 you didn't have any opportunities to speak with him
12 on the phone or via email about that report; isn't that
13 true?

14 A. Yes.

15 MR. POPE: Thank you, Ms. Spencer. That's
16 all the questions I have.

17 THE WITNESS: Okay.

18 CHAIRMAN BAGLEY: Thank you, Mr. Pope.

19 Any questions from council.

20 COUNCIL MEMBER AGOPIAN: No.

21 CHAIRMAN BAGLEY: And none from me as well.

22 Any redirect?

23 MS. ANDERSON: I just have one question.

24 CHAIRMAN BAGLEY: Just a minute.

25 Ms. Anderson's coming back. Everyone is getting their

1 exercise today.

2 REDIRECT EXAMINATION

3 Q. (BY MS. ANDERSON) Hi, again, Ms. Spencer. I
4 just have one question for you to follow up on some of the
5 questions you were just asked. How do you know of
6 Mr. Wireman?

7 A. I know him through some other work that I've
8 done up in the -- in the Pavillion area. I reviewed and
9 read some of his reports that he's done. And I've also
10 came to know him through the Powder River Basin Resource
11 Council.

12 Q. Okay. And so you're generally familiar with his
13 expertise and work --

14 A. Yeah. Yeah.

15 Q. -- through --

16 A. As I said, I'm pretty familiar with the
17 Pavillion investigations, and I read, you know, the work
18 he's done for that. So it was just this I have reviewed
19 and looked at.

20 MS. ANDERSON: Okay. Great. So that's all
21 I have for you at this time. And, again, if you could just
22 hang on through Mr. Wireman, that would be great.

23 THE WITNESS: Okay.

24 MS. ANDERSON: Okay. Thanks.

25 CHAIRMAN BAGLEY: All right. Thank you.

1 Ms. Anderson, call your next witness.

2 MS. ANDERSON: I call Mike Wireman.

3 (Witness sworn.)

4 MICKEL WIREMAN,

5 called for examination by PRBRC, being first duly sworn,

6 testified as follows:

7 DIRECT EXAMINATION

8 Q. (BY MS. ANDERSON) Good afternoon, Mr. Wireman.

9 A. Good afternoon.

10 Q. Could you state and spell your name for the
11 record.

12 A. Yeah. My name is Mickel Wireman. It's
13 M-I-C-K-E-L W-I-R-E-M-A-N.

14 Q. Okay. And, Mr. Wireman, can you tell us a
15 little bit about your current title or position?

16 A. Well, I'm recently retired from the U.S. EPA,
17 where I served for 28 years as a national groundwater
18 expert the last 10 or 15 years. And in that capacity, I
19 was national groundwater expert, worked across the
20 country, worked in the western U.S., worked in Europe,
21 worked in Asia. All things related to groundwater, but
22 primarily related to mining hydrology. That was bulk of
23 my work the last 10 or 15 years.

24 And upon retirement a couple years ago, I formed
25 a small LLC called Granite Ridge Groundwater. I'm

1 president and sole employee of that small LLC.

2 Q. And what do you do in your capacity as president
3 of Granite Ridge Groundwater?

4 A. I consult on -- strictly on hydrology and
5 hydrogeology issues. The scientific aspect of those. I
6 know -- well, just leave it at that. My primary focus is
7 on the science of hydrogeology and hydrology. And I
8 consult primarily with NGOs. I work because I like to
9 work and because I have worked for a long time. So it's
10 not a business that I try to get rich at.

11 Q. All right. Mr. Wireman, I'm pulling up POW
12 Exhibit 18, page 17. And could you identify this
13 document?

14 A. Yes, that is my curriculum vitae.

15 Q. Okay. Did you prepare this document?

16 A. Yes. As of December 2001 -- 2016.

17 Q. Okay. And is it current and accurate?

18 A. It is current and accurate.

19 Q. Could you briefly summarize your education for
20 the council?

21 A. Yeah. I have an undergraduate degree in earth
22 science. A master of science in hydrogeology, and
23 extensive PhD-level work in hydrogeology as well.

24 Q. Okay. Where did you get your degrees?

25 A. I went to Western Michigan University in

1 Kalamazoo, Michigan for both my undergrad and master's,
2 and PhD-level classes at the Colorado School of Mines in
3 Golden, Colorado.

4 Q. Okay. So Dr. Marino testified a little bit
5 earlier about a distinguished alumni award. I think you
6 also wanted to get on the record about a distinguished
7 alumni award that you received?

8 A. Yeah. Two years ago I received a distinguished
9 alumni award from my alma mater, from the geology
10 department at Western Michigan University, which, in my
11 view, is an honor. And they give out once a year. As I
12 was saying earlier, that commits me now to being on their
13 advisory council for two years.

14 Q. (BY MS. ANDERSON) Okay. Great.

15 MS. ANDERSON: Should I just ignore the
16 beep -- the beeping?

17 MR. RUBY: Yeah.

18 MS. ANDERSON: Yeah. Okay.

19 Q. (BY MS. ANDERSON) Mr. Wireman, could you
20 summarize your experience and type of work for the
21 council.

22 A. Yes. I spent my whole career as a
23 hydrogeologist. Right out of college, I spent five years
24 doing water rights engineering work in Denver and in
25 Colorado, helping support clients with the consulting

1 firm, supporting clients' attempts, and hopefully
2 successful, to obtain water and water rights.

3 And then with EPA, I was a scientist at the
4 agency, not a regulator. And my job was to oversee
5 scientific efforts related to sites and issues that EPA
6 Region 8 was involved in. That included extensive --
7 many, many times where I designed and managed site
8 characterization, hydrologic characterization of large
9 watersheds, large aquifers, of mine sites, of contaminated
10 sites, solvent sites, agricultural sites. All kinds of
11 sites trying to put together the hydrogeologic conceptual
12 models and hydrology so that information can go up the
13 chain at EPA, through the decision-making process, and
14 eventually a decision could be made by the decision
15 makers, which was not me. And the model there was all
16 decisions based on sound science. So that's what I tried
17 to bring in my job to the managers and decision makers.

18 Q. Okay. You touched on this a little bit, but do
19 you have experience in mining specifically?

20 A. I have a lot of experience in mining, both hard
21 rock -- mainly hard rock, but also coal. I worked on a
22 number of major Superfund sites up and down the Rocky
23 Mountains, which were, for the most part, legacy sites
24 that had been abandoned. And EPA and/or the states were
25 managing these sites under their authorities under CERCLA.

1 And my job always was to go in first and try and assess
2 and characterize the hydrogeology and all the relationship
3 between groundwater, surface water, mine water, seeps,
4 springs, wetlands. And that was always put together first
5 so that you could then make decisions about remedies,
6 about mitigation, about future land use, about liability.
7 That's one answer.

8 I also spent seven or eight years working as a
9 consultant to The World Bank and to the State Department,
10 though still an EPA employee. Most of that happened in
11 Eastern Europe in the '90s, after collapse of the Soviet
12 Union and our State Department had a real vested interest
13 in helping those countries move forward in terms of
14 establishing democracies in the free market, and part of
15 that was dealing with the environmental issues.

16 And if you know much about the Soviet Union,
17 they have awful legacy when it comes to mining. And those
18 countries were doing two things. They were trying to deal
19 with the legacy sites, fix them, but at the same time they
20 had to re -- revise and restart the mining sector in those
21 countries because it was dead. It was entirely run by the
22 Soviet system. No free enterprise, no anything.

23 So trying to help those countries stand up a
24 mining sector again, stand up all the necessary statutes
25 and regulations and policies and all that that would guide

1 them down the road. And in that capacity, there were a
2 number of coal mines, particularly in the country of
3 Romania, which has a very significant amount of coal
4 deposits. So I kind of came at it from all sides.

5 Q. Okay. I think you touched on this a little bit,
6 but -- so you worked for Region 8 of EPA?

7 A. Region 8.

8 Q. And could you tell us a little bit about the
9 geographic scope of --

10 A. Region 8 --

11 Q. -- Region 8?

12 A. -- includes six states --

13 THE REPORTER: All right. Hold on. You
14 guys are overlapping here.

15 THE WITNESS: I'm sorry. That's my fault.
16 I will do better.

17 A. Region 8 includes six states: Colorado, Utah,
18 Wyoming, Montana and South Dakota and North Dakota. So
19 those states are included in EPA's Region 8. And I worked
20 extensively in all of those states, including state of
21 Wyoming.

22 Q. (BY MS. ANDERSON) Could you tell us a little
23 bit about that work in Wyoming?

24 A. Wyoming. There were a number of things over the
25 years. Early on I worked a lot with DEQ as they were

1 standing up and implementing their groundwater program
2 under the Water Quality Control Division at EPA -- or at
3 DEQ.

4 And we did a number of things. There was --
5 there was responsibilities that DEQ had as a primacy state
6 for federal environmental laws. One example I'll give
7 you. You may have -- some of you may have seen. There
8 are groundwater vulnerability maps for all 23 counties in
9 the state of Wyoming. And they're used quite extensively
10 for land use decisions. Well, I put that together, myself
11 and a professor at University of Wyoming, Peter Huntoon.
12 And then helped the state develop those into official maps
13 and distribute them and all of that. And that was done
14 through a grant from EPA.

15 I was involved in a lot of agricultural issues
16 in Torrington. Nitrate issues in Torrington. Not much
17 mining in Wyoming, because relative to Montana and Utah
18 and Colorado, there's not much mining in Wyoming. Coal
19 mining. But not much hard rock mining. So it was a lot
20 of variety of things with Wyoming.

21 Q. Okay. And over the years have you interacted
22 with DEQ staff?

23 A. Very much. Been -- interacted with DEQ staff,
24 with director, even with former governors here. So, yes,
25 I know them fairly well.

1 Q. Okay. Have you ever been qualified by a court
2 as an expert witness in the areas of hydrogeology or
3 geology?

4 A. Yes. I have testified in federal court. I have
5 testified in state court. I've testified before an
6 administrative law judge, testified before water quality
7 control commission in New Mexico and in civil court.
8 all -- every one of them exclusively on hydrogeology
9 issues.

10 Q. Okay. Have you ever published any research or
11 journal articles?

12 A. Yes, and they're listed on my CV, but I can't
13 remember. 30, roughly. 30, 35 professional peer-reviewed
14 papers.

15 Q. Okay. Great. And in doing that work, was that
16 background helpful in conducting a peer review of this
17 permit application?

18 A. Oh, absolutely helpful, yes.

19 Q. Would you like to elaborate anything -- any more
20 on peer review and that process?

21 A. Yeah, my job in EPA often involved review of
22 very large many-page documents. Occasionally a mine
23 permit. Not too often there because EPA is not in the
24 business of permitting mines. But a lot of -- of NEPA,
25 National Environment Policy Act assessments that are

1 required for new mines, Forest Service or BLM permit. A
2 lot of major reports on contaminated mine sites. Reports
3 in Europe about, as I said before, about strategies for
4 dealing with standing up the mining sectors. So many,
5 many report review was a very significant part of my job.

6 Q. Okay. Is there anything else you'd like to
7 highlight for the council regarding your background or
8 experience?

9 A. Just that I'm very familiar with Wyoming
10 geology. I've worked up here a lot. I know these basins
11 fairly well. I know the stratigraphy of the basins. I've
12 worked on UIC issues, underground injection control issues
13 here. I worked on uranium mines here, and now coal mine.

14 Q. Okay. How did you become involved in this
15 proceeding?

16 A. Powder River Basin, you, called me up and asked
17 if I would be willing to review this permit application.

18 Q. Okay. And what did I ask you to do?

19 A. Review permit application and submit a set of
20 comments.

21 Q. Okay. Did I ask you to draw any particular
22 conclusions?

23 A. No. I wouldn't have taken the job had you asked
24 that.

25 Q. Okay. Are you being compensated for your time

1 today?

2 A. Yes.

3 Q. And do you feel that compensation in any way
4 influenced any of your opinions you have drawn for these
5 proceedings?

6 A. No.

7 Q. Okay. We're going to pull up our Exhibit 17.
8 And, Mr. Wireman, is this the expert report you prepared
9 for these proceedings?

10 A. Yes.

11 Q. Could you tell us a little bit about the scope
12 of your review and what you reviewed in preparing your
13 conclusions?

14 A. I reviewed those portions of the permit
15 application which focused on hydrologic issues. And I
16 have listed them here. Appendices D6, D11, D5. I've
17 reviewed the revised mine plan I believe it was the 2015
18 date. I looked through all the objections to the permit
19 from the various parties that objected. I have reviewed
20 Wyoming administrative rules, particularly 3 -- that I
21 think are pertinent to my review. And then DEQ's review
22 comments. I did look some of the back and forth between
23 DEQ and Brook Mine, though clearly not all of them.

24 Q. Okay. Did you also look at some USGS --

25 A. I looked at --

1 Q. -- information?

2 A. USGS, over the decades, has done a fair amount
3 of work in Wyoming. Most of their reports, while they're
4 absolutely excellent, they're typically sort of more broad
5 or regional than that. They're not typically focused on a
6 site this small. But, yeah, I mean, that's kind of
7 standard of practice because you need a background for
8 these large sedimentary basins up here. You need to kind
9 of understand the big picture before you can zero in on
10 site-specific issues.

11 Q. Okay. Mr. Wireman, were you present at these
12 proceedings for the testimony of Mr. Gerlach?

13 A. Yes.

14 Q. And did you hear Mr. Gerlach testify some of the
15 baseline water assessment requirements and the Wyoming DEQ
16 rules and statute for coal mine permit applications?

17 A. Yes. I believe, if I remember correctly, he
18 focused on Wyoming administrative rules for Land Quality
19 coal Section 2, which are required studies for mine
20 permits. And then I do believe he also referenced
21 Statutes 35-11-406, parts of that statute.

22 Q. Okay. And would you agree with Mr. Gerlach's
23 professional understanding of those requirements?

24 MR. POPE: Objection, Dr. Bagley. This is
25 similar for any of these opinions are not in his expert

1 report. It defeats the purpose of his expert report.

2 CHAIRMAN BAGLEY: I'll let him answer it.

3 A. Yes. I -- I understand it this way. He was
4 pointing out what he believed the statutes required in
5 terms of information in this permit application. I've
6 looked at the same statutes. I interpreted more or less
7 the same way he does.

8 Q. (BY MS. ANDERSON) All right. Are there any
9 other rules or statutory provisions you would like to
10 highlight for the council that you relied on to draw
11 conclusions for your report or your testimony?

12 A. Again, I'll -- I'll mention there's two in
13 particular. Wyoming Statute 35-11-406 (b)(xviii) and
14 Wyoming Statute 35-11-406 (n)(iii). Those two in
15 particular I relied on to assess -- to develop my opinion
16 on the adequacy of the characterization -- hydrologic
17 characterization in the permit application.

18 Q. Okay. And did you also review the rules and
19 regulations and the statute related to alluvial valley
20 floors?

21 A. I did.

22 Q. Okay. All right. Let's turn to your findings
23 regarding the permit application, and let's start with
24 some basics. Could you tell us, based on your experience
25 and understanding, what is a hydrologic system and why is

1 that important?

2 A. Can you put up the --

3 Q. Yes. On --

4 A. I'd like to --

5 Q. So, Mr. Wireman, let's start with Mr. Wireman,
6 did you prepare a PowerPoint for demonstrative purposes
7 today?

8 A. I did.

9 Q. Okay. So I'm pulling that up and on -- this is
10 the last slide in that. And, again, the question is,
11 based on your experience and understanding, what is a
12 hydrologic system and why is that important?

13 A. I'd like to focus on the hydrology of a
14 watershed. If you'll --

15 MR. POPE: I apologize, Dr. Bagley, for
16 cutting him off. We've never seen this exhibit before.
17 This was not produced to us. Is this being introduced?

18 MS. ANDERSON: It's a demonstrative
19 exhibit.

20 MR. POPE: This is not going into evidence?

21 MS. ANDERSON: It's not going into
22 evidence.

23 MR. POPE: Thank you.

24 A. This is from a standard groundwater hydrology
25 textbook used in many universities in the country, so it's

1 not something I generated. Okay?

2 What I'd like to talk to you about, council
3 members, is hopefully provide some further understanding
4 about a watershed scale hydrology. What happens within a
5 watershed like the Tongue River watershed, with Goose
6 Creek as a tributary, with Slater Creek as a tributary.

7 And this is highly generalized, but it does
8 apply. And what I want to focus on for just a second is
9 how the water, where it gets in, where it goes. Where it
10 goes is an important question here. So if we look up here
11 and if we consider this to be the Tongue River right here,
12 and this sort of goes up on either side, and the Tongue
13 River's got a little more flat floodplain than this
14 diagram shows, but there's sort of two sources of water
15 that come into the Tongue River and come into the alluvium
16 of the Tongue River. And we'll get into a little later
17 why that's important.

18 And one is this -- and this has been mentioned
19 in the permit application. This sort of recharge of the
20 alluvial aquifer here by a high level of the Tongue River.
21 And the Tongue River is really screaming like it has been
22 the last two or three weeks, it actually -- water moves
23 from the river out into the alluvium for a certain
24 distance. That distance is tens of feet, maybe a hundred
25 feet. Typically not much more. So it provides some

1 amount of water into that alluvium and helps keep that
2 saturated thickness of the alluvium. However, that is a
3 transient thing. It happens in the spring and summer. As
4 you all know, by August or September the Tongue River is
5 much lower than it is now because all of the snowmelt in
6 the Big Horn Mountains has run through the system.

7 So what's left? What's left is this. And this
8 is very typical of major rivers and streams throughout the
9 West. In the fall and winter, the main source of water to
10 these rivers is what we call base flow, which is discharge
11 of groundwater from adjacent geologic formations into the
12 alluvium and sometimes directly into the river. Okay?

13 There's a fairly thick alluvial package along
14 the Tongue River; 50, 60, 70 feet of sand and gravel
15 deposited by that river. And so the important thing
16 here -- the take-home message is we have geology over
17 here.

18 In the case of our site, it's the Tongue
19 River -- or it's the Fort Union formation. And we know
20 this formation well. It occurs here in the Powder River
21 Basin. It occurs over in the Wind River Basin. It's home
22 to coal, uranium, water and oil and gas.

23 But the Fort Union, you know, the coals are in
24 the Fort Union. We have seen the cross-sections this
25 morning. And above the coal is the other part of the

1 Fort Union formation, which is essentially a very
2 heterogeneous mixture of sand, clay, gravel. It is very
3 heterogeneous. It is very complex.

4 And that formation contributes water to the
5 alluvium and to the river, mostly through the alluvium.
6 But if you look at the cross-sections, you will see that
7 in a couple places that coal, as depicted on the
8 cross-sections, subcrops almost directly into the river.
9 Okay?

10 So the other thing to remember here is if -- if
11 your coals are down here, let's say they're 50, a hundred
12 feet down, and Fort Union above the coal is fine grained
13 in places and results in the water in the coal and the
14 water in the lower portion of the Fort Union to be what we
15 call confined. That just means it's in there under
16 pressure. That's what that means.

17 So if the pressure head or the potentiometric
18 surface or the water level in a well put in that coal, if
19 that water level is above the river, then the water wants
20 to move through the Fort Union into the river. That's
21 pressure. You know, water don't flow uphill. Water flows
22 from high pressure to low pressure. The lowest pressure
23 in the entire system is the Tongue River. That's the
24 absolute -- that's atmospheric pressure. All the
25 groundwater is under pressure higher than that.

1 So if that pressure head is above the river, you
2 have this phenomenon where the groundwater moves up. And
3 sometimes it moves dead vertically up. So this happens in
4 rivers like the Tongue River, and it happens all the time.
5 And one of the things you really have to look at and
6 understand is the water budget there, where does that
7 water come from, and if you interrupt that or perturb that
8 or stop that, then you have an effect on the water level
9 in the alluvium critically, and a smaller effect on the
10 water in the Tongue River.

11 So that's the main point I want to make here.
12 The Fort Union is very thick. It has coal seams. It has
13 permeable zones. It has low permeability zones. It's
14 highly complex. But one thing's for sure, water will move
15 through it. It may take time. It might not be a whole
16 bunch, but water will move through it. And there's really
17 no such thing as an impermeable geologic unit. There's
18 some that are close, but all of them have some degree of
19 permeabilities. So that's the point I want to make in
20 terms of how far the water interacts. You have
21 interaction between the river, the Fort Union formation
22 and the alluvium both along Slater Creek and along the
23 Tongue River.

24 Q. (BY MS. ANDERSON) And is there anything you
25 want to add about the domestic and stock water wells in

1 the system?

2 A. Yeah. One thing that is indicated in the permit
3 application -- and it's a bit, I don't know if puzzling is
4 right word, but there should have been more information.
5 The coals -- as it turns out, coals are oftentimes a
6 pretty good aquifer. They will hold water, and they can
7 get water out of them pretty good. And, you know, it's
8 not intuitive, but the water quality's not bad all the
9 time. So people do use coal for water supply.

10 However, the permit indicates that the
11 majority -- I can't remember the exact word -- but the
12 majority of the 357 domestic stock wells that occur within
13 or -- within 3 miles of the permit boundary, the majority
14 of those take their water not from coals, but from some
15 other part of the Fort Union formation. And one of the
16 real problems I have here is that's simply not addressed.
17 That is simply not discussed or addressed in terms of what
18 happens to the water in these wells if you dewater the
19 coal, because they just haven't dealt with it. And so
20 that's an issue.

21 Q. Okay. And we'll get to that I think a little
22 bit later on too.

23 Mr. Wireman, do you have any experience in
24 designing and conducting baseline hydrologic assessments?

25 A. Yes. Lots of experience. I've designed and

1 overseen many of them.

2 Q. So based on that experience, how would you go
3 about assessing this hydrologic system?

4 A. There's two or three really important things
5 that one has to take into consideration when you design a
6 baseline characterization program. One, you have to
7 recognize that there's seasonal differences. Things are
8 not the same in the winter as they are in the summer. So
9 the first thing is you have to collect data from whatever
10 locations you've determined that you're going to get
11 hydrologic data from. You have to collect data, as we
12 called it, over a full hydrograph. Okay? It's very, very
13 important, because in many hydrogeologic settings, you can
14 have differences of tens of feet in water levels between
15 January and May. So that's one thing.

16 Secondly, you have to have the appropriate
17 spatial coverage. You have to get data from monitoring
18 stations throughout this permit area. It's a fairly large
19 permit area. The coals extend throughout the permit area.
20 They're different between east and west, but they're
21 there. The Fort Union occurs throughout the entire permit
22 area. So you have to have spatial coverage. You have to
23 sample Slater Creek. You have to sample Hidden Water
24 Creek. You have to sample the Tongue River. You have to
25 sample the alluvium of the Tongue River. You have to

1 sample the alluvium of Slater Creek, and the coals. And
2 you have to do this with an appropriate number of
3 locations over a full year at minimum.

4 And then the next part of this is what you
5 sample for. You know, it's not just willy-nilly. You can
6 divide this up into categories. And we do this all the
7 time. You want just what we refer to as standard ions.
8 You know, cations, calcium, sodium, potassium. The other
9 side of that are anions, chloride, nitrogen or nitrate,
10 those things. That's a standard group. On top of that
11 you would add metals. You always want some understanding
12 of metals. Hard, you know, chrome, all zinc, cadmium, all
13 those things. All these things occur in the rocks, so
14 they're there.

15 Next you would do what we call field parameters.
16 Temperature, pH, conductivity. Fairly easily done. Done
17 right at the well site or the stream site.

18 And then finally I always insist on stable water
19 isotope data. And I won't go into exactly what that is,
20 but it's just simply isotope -- give you just one example.
21 Oxygen can occur two different ways. It can occur with
22 18 electrons on the outer or 16. It occurs both.
23 99 and nine-tenths percent of it is O-16, but that very
24 small percentage of O-18, if you can measure that -- and
25 you can, very, very, very precisely -- what it tells you

1 is how much mixing's going on, and it gives you a rough
2 idea of how old it is.

3 The mixing is very important. If you -- for
4 instance, if you took a sample out of sandstone in the
5 Fort Union, then you took sample out of the coal. If the
6 O-18 values were the same, you can say, ah, there's mixing
7 going on here. These waters are mixing. If they're
8 drastically different, then you can say they're probably
9 not mixing. And it's very clear. It's not nebulous.

10 So we usually recommend those types of isotopes,
11 which include O-18 and deuterium. But then we also
12 recommend tritium, which is a radioactive isotope, which
13 really pins down the age of the water. How long -- it's
14 not age. That's -- that's a misnomer. What it tells you
15 is how long has the water been in the ground. Okay? How
16 long -- when did that water get recharged into the
17 aquifer? How long before you just took it out?

18 And that really tells you a lot about pathways,
19 about where the water flows. And that's a critical
20 understanding. So there's a whole approach that goes into
21 that in terms of the analytes. And, of course, the other
22 side is the procedures that goes along with collection
23 analysis, transport. And EPA wrote the Bible on that --

24 THE REPORTER: I'm sorry? Wrote the Bible
25 on that --

1 THE WITNESS: They wrote the Bible on
2 methods for analyzing water samples. And -- and the
3 standard operating procedure for collecting those samples,
4 transporting those samples, all of that. And it's used --
5 and it's referenced in Wyoming regulations or statutes.
6 Probably regulations. It's referenced. So it's used all
7 over the country.

8 So that's sort of the other side of this. And I
9 always had field technicians that I trusted to do all that,
10 but...

11 Q. (BY MS. ANDERSON) And then at some point you
12 get to draw conclusions and recommendations based on all
13 that data?

14 A. Once all this data comes in, then my job always
15 was to take all this data, put it into databases and do
16 all different types of analysis. All different -- there's
17 a whole wide variety of ways you can analyze chemistry
18 data, flow data, geologic data. And it doesn't always
19 require a model. You can use models. We use models. We
20 hardly ever use models to predict, but we do use models to
21 help us figure out what was going on. And there's a very
22 distinct difference there.

23 So, yes, that was the part -- and then once that
24 was done, and I sort of -- I can go to my decision makers
25 and say, okay, here's what's going on out there. Here's

1 how it works. So from that they then can go through the
2 rest of the process, make whatever decision EPA was, you
3 know, charged with making.

4 Q. Okay. And you spoke a little bit to the
5 complexity of the hydrology in this area. Is there
6 anything you'd like to add about why data's important,
7 given where we are right now with this process?

8 A. It's an age-old battle. And there's a paradigm
9 that says the more complex it is, the more data you need.
10 That's generally true. The opposite of that is the harder
11 it is to get that data. What we have done over the last
12 20 years is develop ways to collect data that do not
13 involve drilling 500 wells. You know, historically, that
14 was our tool. You drill all these wells. You get a core.
15 You collect a sample, kind of figure it out.

16 It's expensive to drill wells. And so now we --
17 we've devised a new set of tools that can be done from the
18 surface, surface geophysics, all the isotope data I talked
19 about. All of that goes together to help you understand
20 the complexity.

21 Now, in this site, the Fort Union is a very,
22 very complex formation. It's not complex in terms of how
23 it was deposited. It's very straightforward. Come off
24 the mountains, as the Bighorns went up and they shed off
25 the mountains out into this big Powder River Basin. But

1 it is complex in terms of what makes up the formation. It
2 is very common to have sandstone here and a siltstone
3 there and a claystone there, stacked on top of one
4 another. And the reason for that is really fairly simple.
5 As the mountain went up -- and geologically they went up
6 fast -- these streams came down carrying sand and gravel,
7 eroding all the rocks in the Bighorns. The steeper the
8 stream, the more material it moved. And then when it hit
9 the flatland, it all just slows right down, deposits the
10 large material. As it keeps going, deposits finer and
11 finer material.

12 So you can see how this laterally changes from
13 sandstone to siltstone to claystone laterally. Over time
14 it does the same thing. As you come up vertically, now
15 what used to be the place where gravel got deposited is
16 now a place where sand gets deposited or clay. So then
17 you stack it up that way. So the result is very
18 heterogeneous lithology. And all lithology refers to it as
19 a sand? Is it a gravel? Is it a clay?

20 But from a groundwater perspective, it's very
21 complicated, because groundwater moves through sandstone
22 very different than it moves through claystone. Very
23 differently. And moves through hard rock even
24 differently. And so we get in the hole business of what
25 we refer to in my business is Darcy flow, where you've got

1 groundwater flow through all of the pore spaces headed
2 down-gradient. That's nice. And you occasionally get
3 that, if you got well-sorted glacial sand.

4 What is more common and what occurs here is a
5 great portion of the water moves through preferable
6 pathways, whether that be fractures, whether that be
7 faults, whether that be an old stream channel that might
8 be buried that is full of sand, and next to it is clay,
9 all the water wants to be in the sand. So that -- that is
10 the complexity of it. And trying to understand that
11 enough to say, okay, I know where this water's going to go
12 from the Fort Union into the alluvium. I know where it's
13 going to go into the Tongue River. I have to know this
14 because if I don't know this, I can't assess risk and I
15 can't assess changes to the -- to the hydrologic system if
16 I don't know those things.

17 So it takes really quite -- in my view, the
18 upfront portion of all this, from a data collection and
19 baseline characterization, you're looking at two to three
20 years minimum. That's just kind of the way it goes. So
21 that just tells you kind of how far the rigor that's
22 required.

23 Q. Okay. So we talked quite a bit about
24 assessments of hydrologic systems. Is this particularly
25 important here, given the statutory and regulatory

1 requirements we visited about?

2 A. I think it's critically important if you look at
3 what's required under these statutes and these rules that
4 I referred to earlier.

5 Q. Okay. Mr. Wireman, were you present for
6 Dr. Kuchanur's testimony?

7 A. Yes.

8 Q. Okay. Did you hear him say that the amount of
9 data needed for a scientist and a regulator are different?

10 A. You know, as a scientist, I've kind of heard
11 that a lot over years. You know, scientists always hear
12 that, particularly from regulators. I don't -- you don't
13 want to misstate data. I just don't look at it that way.

14 If you want an honest, thorough, rigorous
15 assessment of what's going on, and if the decisions that
16 need to be made are based on that, then you need an
17 adequate amount of data. You simply do. Sometimes that's
18 a lot more than other times. Depends on the system. This
19 is a fairly large area. It's fairly complex. That says
20 to me you need more data. You need to pay attention to
21 the things I talked about earlier in term of spatial
22 distribution, temporal distribution of the data. That is
23 critical. You can't really come to an understanding
24 conceptually what's going on without it.

25 Q. So a fair summary, sound science equals sound

1 decision as a regulator?

2 A. Sound science is necessary for sound decisions.
3 Doesn't necessarily equal sound decisions, but it
4 certainly is necessary.

5 Q. All right. We're going to go back to your
6 PowerPoint here. And this is the first slide of that. If
7 you could just provide some summary about your main
8 findings related to this permit application.

9 A. Yes. I've put these statutes up here. And I
10 read those, you know. And I -- I understand what they're
11 asking for in terms of the assessments that need to be
12 done. They're focused, as they should be, understanding
13 risk and understanding activities that might change --
14 make major changes to hydrologic system, which then affect
15 people's use of that water or the environment's use of
16 that water. That's what I get out of this.

17 So then going through the permit application in
18 great detail and the appendices I looked at, including
19 MP.3, which is the addendum for the modeling, my view,
20 my -- my opinion is that these five bullets really
21 characterize what's missing, what's not here, and what
22 needs to be.

23 And I'll just go through them briefly.
24 there's very sparse hydrologic data. And the permit
25 application -- and this is a quote -- they understand it's

1 a complex groundwater system. And so the only site-
2 specific hydraulic data that I can see in this permit
3 application, to run a groundwater model, groundwater model
4 simply tells you about flow of the groundwater. How much,
5 kind of where it goes, where it discharges.

6 You need some fairly standard hydraulic data,
7 hydraulic conductivity, storage coefficient, velocity.
8 Most often that is obtained by doing what some people
9 refer to as a pump test. It's more accurately an aquifer
10 test. You pump an aquifer for an extended period of time
11 and you measure water levels in that well and in adjacent
12 wells. And that drawdown over time, plotted with standard
13 methods that we use, will tell you how much water you can
14 get out of that well. And it will tell you how fast it
15 can move. So -- but you have to have the data.

16 So in this permit application, a pump test was
17 only down at one location. That was the far eastern part
18 of the permit application area. There was no aquifer
19 testing done in the rest of the area. And they obtained
20 two site-specific hydraulic conductivity values, one for
21 each of the coals. One for the Carney and one for the
22 underlying Masters. Then they obtained storage values.
23 And that's it. That's it. They had those two things.

24 And then they -- a single storage coefficient --
25 specifically, these are essentially the same thing. A

1 slight difference. But in the porosity value, they used a
2 single value for the whole area. That in no way can
3 capture the complexity in the heterogeneity. The
4 potentiometric surface maps that are generated -- and I
5 have the reference here, but it's in -- it's figures in
6 D6 -- here, D6.2-2. They were based on average values.
7 And that's really kind of an odd way, in my opinion, to do
8 that. You have water level measurements over the course
9 of time. You add them up, take an average, and then
10 that's your water level. Well, the reality is you
11 probably never read that average water level out in the
12 well.

13 And it also prevents -- or doesn't allow for
14 seasonal changes. That's the important point, really.
15 Because a potentiometric surface drawn for January water
16 levels could be quite different than the one drawn with
17 May water levels. Very different. And what that means is
18 the direction of groundwater flow can change. That's
19 number one. The velocity can change. That's number two.
20 And number three, the quantity of water that goes to any
21 certain place can change. So it's really important to try
22 and capture the seasonal changes.

23 Q. I'm going to interrupt you really quick. Can
24 you explain what a po --

25 A. Potentiometric --

1 Q. You know what --

2 A. -- surface.

3 Q. -- I'm getting at. Yeah.

4 A. Let me just take one second. I wish I had a
5 board, but if --

6 MS. MORRISON: There's a piece of paper.

7 THE WITNESS: Is it okay if I draw
8 something real quickly for you?

9 CHAIRMAN BAGLEY: Yeah. Let Jim bring it
10 over.

11 THE WITNESS: Be a lot easier to explain.
12 Take a lot less time.

13 MS. ANDERSON: Potentiometric.

14 THE WITNESS: This one isn't dark enough.

15 Ah. Thank you, Jay.

16 MR. GILBERTZ: You need the --

17 THE WITNESS: The blue one. Give me a
18 couple darks.

19 MR. GILBERTZ: You want darks?

20 THE WITNESS: Yeah. Thank you.

21 MR. GILBERTZ: Here's purple and black if
22 you need them.

23 MS. ANDERSON: Thanks, Jay.

24 A. Land surface --

25 THE REPORTER: You're going to have to turn

1 towards the microphone.

2 THE WITNESS: Okay. Oh, sorry.

3 MR. RUBY: Hang on a second. I don't want
4 to touch it.

5 MS. ANDERSON: Don't move it, yeah.

6 THE WITNESS: I got in trouble for that
7 before.

8 MR. RUBY: Which one you want to use, Joe?

9 MR. GIRARDIN: I'm using four.

10 MR. RUBY: Can you get it? Is it okay,
11 even if he turns away?

12 MR. GIRARDIN: We'll find out in a second.

13 THE WITNESS: Okay. This good?

14 A. This is a well, this is the land surface. And
15 let's say this is the Fort Union. Okay. We got a coal
16 seam down here. They're dipping, not flat like this. So
17 we screen our well here. Okay? Then you measure the
18 water level. Water level can be up here. Okay? The
19 water level in this well is above the top of the aquifer
20 that it's screened in. What that says is you have
21 pressure head.

22 This water level elevation here is comprised of
23 two big components. One is called elevation head.
24 Everything is relative to sea level. Everything. And
25 it's -- it's just relative to sea level. So this water

1 level is sea level. And this is called the pressure
2 gadget.

3 Now, the important point here -- and this is
4 different than an unconfined aquifer. Let's say that over
5 here you have alluvium, and on top of the bedrock. And
6 you move through the well here and you screen it, the
7 water level will never come above the top of that aquifer,
8 ever. Because the pressure here is the same as the
9 pressure here at the surface. So this is called an
10 unconfined aquifer. This is a confined aquifer.

11 Now let's go to the storage. That's the key
12 thing here, because it's a key hydraulic parameter. What
13 storage means, storage coefficient, simply says if you
14 lower this water level -- let's say it's right there -- if
15 you lower that one foot, how much water do you get out of
16 that valve? How many gallons? Okay? That's what that
17 means.

18 In an unconfined aquifer, you get a lot more
19 water out of that well by drawing that down 1 foot than
20 you do here, because here, when you lower this one foot,
21 you're not taking any water out of the aquifer. You're
22 simply reducing the pressure.

23 Now, the importance of that is any pumping down
24 here is going to, relatively speaking, very quickly lower
25 this water level, because you're lowering the pressure

1 head, not the water. So storage coefficients for confined
2 aquifers are order of magnitude or more lower than storage
3 coefficient for an unconfined aquifer.

4 That's important for these domestic wells,
5 because in domestic well -- let's say this is a hundred
6 feet. You first drill that, the water level comes way up
7 here. You have a hundred feet of water in your well.
8 Well, it doesn't take a whole bunch of pumping to lower
9 that down there. You don't have to take a whole bunch of
10 water out before that happens. You have to take a whole
11 lot more water out of this one.

12 So it's important to recognize these are
13 confined aquifers, and these wells have potentiometric
14 surface. This is called a potentiometric surface. This
15 is called a water table. It's just terminology we use.
16 Okay?

17 So this is what's going on. The Fort Union not
18 only has the coals, they're on this Fort Union, which is
19 hundreds of feet thick, big sandstone thing there. If
20 you can find it -- drillers get pretty good at this over
21 time -- that's good water source.

22 The rest of it could be siltstone, claystone,
23 low permeability, has a lot of water in it. You just
24 can't get it out very good. That's the porosity equation.
25 Porosity simply is how much void space in this rock.

1 That's all it is. It's a percentage. Typical ranges are
2 10 to 30 percent.

3 So a claystone or a siltstone can have an awful
4 high porosity and have a lot of water, but it is very low
5 permeability. And all permeability, which is the
6 hydraulic conductivity -- and then I'll stop at this sort
7 of science lesson. What that is is how much water, if you
8 had a one-square-foot cross-section, how much water would
9 flow through that cross-section in one day or any time
10 period you want. How much would flow through there?

11 That's what hydraulic conductivity measures, is that.

12 And it is simply a measurement of the degree of
13 interconnected porosity. You can have all kinds of pore
14 spaces in these rocks, but if they're not connected water
15 won't move from one to the other. It just stays there.
16 So that's the reason that's an important parameter in
17 porosity and the storage. So all those things are very,
18 very important. If you want to assess impacts from
19 pumping somewhere in this formation to coals, the impacts
20 of that pumping on the rest of that formation and on the
21 domestic wells, that's the importance of that.

22 Q. (BY MS. ANDERSON) Okay. So let's go back to
23 this slide. Is there anything else you want to highlight
24 on the --

25 A. What I've done here is just try -- because

1 there's a fair amount of stuff here, I just tried to,
2 under these five headings, just give some examples of what
3 I'm talking about. I indicate there's sparse hydrologic
4 data for this complex system.

5 And then I -- you know, the data collection was
6 focused almost entirely on the coal seams. They're a coal
7 mining company. That what they need. But there is not
8 nearly enough data on the overburden, underburden, the
9 Tongue River alluvium, Slate Creek alluvium -- Slater
10 Creek.

11 As I indicated, a single storage coefficient,
12 specific deal, porosity value, at least the way I read it
13 in the application, was used. The limitations associated
14 with nonseasonal or average values here for potentiometric
15 surface. There's only four surface water locations that
16 were established for background and three noncoal wells.
17 That was it for the whole area.

18 And there's no data for the surface water
19 locations from October to March. So half the year there,
20 there's no data. So essentially you had a half year of
21 data. And I can tell you from reading some of the Big
22 Horn Coal's reports in the past, they indicated that, for
23 instance, in Hidden Water Creek, there was typically water
24 in that creek in the winter, not in the summer. Hidden
25 Water is mostly an ephemeral stream, compared to Slater

1 Creek, which is an intermittent stream. And what that
2 tells me, and it fits with what I hear and understand
3 about these coals, the Monarch coal is burned.

4 You know, we've all been around and seen major
5 coal fires the last few decades sometimes. That creates
6 what's called scoria, which is just highly burned coal.
7 But that has a complex storage of water because the sort
8 of geometry of that scoria is -- is very, very complex.
9 Water comes in there in recharge -- snow, rain -- and then
10 it is stored there for a time. And then it slowly
11 infiltrates down and move downgradient in the coal. Okay?
12 There's a lag time.

13 And it's not uncommon. We see many
14 hydrogeologic settings where the recharge happens in
15 May -- April, May, June, into the ground, but you won't
16 see, for instance, that discharge into a stream or spring
17 for six months or eight months. It just takes that long
18 to move through the system. Not uncommon. So that's
19 the sort of danger of not getting the winter data. You
20 just -- you miss that.

21 The data for the precipitation, which relates
22 directly to the recharge, they have no post-1973 data.
23 Well, we all know things have changed since 1973. We get
24 a lot more high-intensity storms. So I just don't think
25 that data's any good.

1 There's no data for recharge. And I -- I don't
2 want to pick on folks there. That's hard to get. I
3 readily admit that. It's hard to get recharge data to
4 figure out how much of the rain actually goes into the
5 subsurface. There are methods. Most of them are
6 estimates. But here, it just -- I have no idea where the
7 data came from. It indicates that regional values are
8 used. I have no idea what that means or where that came
9 from.

10 So that's -- that's just some examples here of
11 the dearth, as Jerry called it, of hydrologic data.

12 Q. Okay. Great. So we'll move on to your second
13 kind of finding here.

14 A. This finding really relates to what I think was
15 unmet task here, and that is to get some data for the
16 overburden, underburden, Tongue River alluvium, Slater
17 Creek alluvium. There are some wells in Slater Creek.
18 They've been sampled. There's some water levels.
19 However, I will say this. They were not used.

20 When the aquifer tests were done in the eastern
21 part of this permit area to determine hydraulic
22 conductivity values, no Slater Creek monitoring wells were
23 monitored. I just couldn't get over that. Why they
24 weren't monitored during that test is beyond me, because
25 one thing you would want to know is if you pump the coal

1 and dewater it, will you have an effect on the alluvial
2 water among Slater Creek? And that's determined if you
3 just monitor those during an aquifer test.

4 The potential impact of the alluvial aquifers on
5 the Tongue River and Slater Creek. There -- as I read
6 through -- and somebody can point it out to me -- but I
7 didn't see any monitoring wells in the Tongue River
8 alluvium. I didn't see any data about depth of water,
9 saturated thickness, water quality.

10 There was a statement made in the permit
11 application that it's a losing reach of stream across the
12 entire permit area. I have no idea where that comes from.
13 And I -- there was no basis for that whatsoever. And I
14 just don't believe it's the case. I think we have a more
15 temporal situation like I showed earlier.

16 And one of the reasons this is really important
17 is the potential to degrade the alluvial valley floors.
18 You have to remember, alluvial valley floor is simply the
19 Tongue River alluvium. That's what it is. It's 60,
20 70 feet of mostly saturated sand and gravel on that river
21 with a flat floodplain.

22 The water level, historically, has stayed high
23 enough there to allow alfalfa and other crops to be grown
24 because roots can get down to it. The risk you run, and
25 it's a very serious risk, there isn't a lot of freeboard

1 left here. You know, alfalfa roots don't go that deep.
2 So if you lower that water level below the depth of those
3 roots, you've got no more alfalfa. Okay?

4 That's the risk to the AVFs. And that's the
5 assessment that has to be done, is will this mining result
6 in less water going to those, and will that less water
7 cause the water level to go down below the root zones?
8 That is the critical, critical question with respect to
9 protecting AVFs.

10 And then finally here, as I've already mentioned
11 but these 357 wells, I just -- I just didn't see anything,
12 you know, to -- about those that I thought was adequate.

13 Q. Okay. So let's go to your next set of findings
14 here.

15 A. Okay. I talked about sort of the methodology
16 for designing and conducting background or baseline
17 characterization studies. The first thing you always do
18 is start to develop conceptual model. Those -- people in
19 my business, you know, we work in the subsurface. And so
20 it's as I've been told by some, it gives me ability to
21 wave my arms more than most people because you can't see
22 down there.

23 But, however, we have a fairly good
24 understanding of groundwater flow systems, how the
25 recharge happens, how the flow happens, how the discharge

1 happens, how the water quality -- why it exists the way it
2 does. So all of that goes into your thinking as you're
3 collecting and analyzing the data, running the models,
4 whatever you're doing to improve and evolve your
5 conceptual model, as time goes on. And that's the reason
6 you run numerical models, is to help you develop a better
7 conceptual model.

8 So that's what this is about. There's not
9 enough characterization of Slater Creek. I saw references
10 to intermittent. I didn't see much discussion of base
11 flow, though I did see in some DEQ documents where clearly
12 riparian zones have been identified out along Slater
13 Creek. There were cottonwoods growing out there. There's
14 some things that indicate clearly groundwater coming into
15 that creek.

16 As I said, no discussion of recharge or
17 discharge to and from the Tongue River alluvium. No
18 discussion of its interactions with the river. What's the
19 hydrologic -- the hydraulic relationship? It's what I
20 just said, between the river and alluvium.

21 I didn't see any water quality or flow data for
22 the Tongue River that I thought was appropriate. There is
23 one gauge on the Tongue River within the permit boundary,
24 but you've really got to have one upstream and downstream.
25 If you don't, you can't compare it.

1 No explanation of some things I found to be
2 interesting. The water chemistry within the coal
3 themselves was highly variable, and that just puzzles me.
4 That's not what I would expect to see. And I don't know
5 why that is, and somebody needs to address that.

6 The same is true for transmissivity, though
7 that's a little easier to understand conceptually because
8 of the scoria issue.

9 No discussion of which vertical intervals or
10 lithologies are being used by the domestic wells. Where
11 is the water coming from? You know, if you don't know
12 where they're getting their water, you really can't assess
13 impacts.

14 Inadequate understandings and data for
15 groundwater recharge and discharge. And one of the
16 critical questions here is water that was down-gradient in
17 these coals from the northwest to the southeast. And
18 those coals extend under the Tongue River. They go
19 further, I assume. I haven't seen any discussion of where
20 they go, but I can't imagine they just stop on the south
21 end of the Tongue River. So where does that go? And
22 where -- you know, if you mine part of this coal, then
23 you've disrupted the pathway. The water can't get down
24 there anymore. Now, maybe that's not an issue. I don't
25 know.

1 So those are some of the -- the issues here.

2 And then I think I've just got one more slide. I'm just
3 trying to demonstrate sort of some of the ways I would
4 approach this and some of the sort of missing things.

5 The modeling has large uncertainties, though
6 that's not uncommon. And I think most modelers would
7 agree that there's significant uncertainties all the time.
8 It's very difficult. I didn't see any discussion, really,
9 of error bars on this. So if you have a prediction or
10 drawdown X feet away from a pumping well, the prediction's
11 whatever, 10, it's really helpful to say
12 10 plus or minus, because you can't really hang your hat
13 on 10. It just doesn't work that way.

14 So -- and as I've indicated, there's only
15 empirical data for one of the four parameter site-specific
16 empirical data. As I understand reading the model, the --
17 all of the overburden was -- the model was totally
18 homogenous. Just one layer, all the same
19 characterization. No attempt to -- that had discrete
20 zones there.

21 And I recognize it's hard. You know, I'm not
22 knocking this model, but I think sometimes people put a
23 little too much faith in the -- in what comes out of it.
24 I didn't see really good water budget in terms of how much
25 the recharge is, how much flows through, how much goes

1 here and goes there. And then, as I indicated before, I
2 have a hard time thinking the Tongue River is a losing
3 river year-round through this whole stretch.

4 Q. Okay.

5 A. And this is the last one. This gets to the
6 cumulative hydrologic impacts. And this, I think, is
7 something that really needs to be looked at a little
8 closer. There have been some very significant impacts out
9 here. Significant -- impacts to groundwater. There's no
10 question that's occurred. There's absolutely no question
11 the mining has perturbed the groundwater system. Whether
12 that has resulted in material damage is a separate
13 question.

14 But some things we do know. Coal-bed methane
15 resulted in huge drawdowns out here. Tens of feet.
16 Eighty, hundred feet I've read. They had to dewater the
17 coal to get the methane out. So that's still there.
18 There's still a residual. Those water levels have not
19 come back.

20 I read in one of the Big Horn Coal mining
21 reports, and I stand corrected if somebody wants to, but
22 that when they were mining down in north -- in the T-1
23 area, there was, either inadvertently or not, some
24 excavation into the alluvium along Goose Creek/Tongue
25 Creek [sic]. And that caused a lot of the drainage out of

1 alluvium and water to leave. And as I recall, they fixed
2 it somehow. I don't really recall the details. But the
3 point I'm making here is that's another impact.

4 The model indicates that long-term recovery of
5 water levels at 20 years out, you're still going to have a
6 10-foot decline in head. Let's just say, for instance,
7 that's 20 feet, because the model's not correct. If
8 you're one of these guys with confined aquifer in domestic
9 well, you might not have 10 feet to lose. You just might
10 not. And that hasn't been checked. I mean, how do you
11 know?

12 The other thing is when they mine -- and Jerry
13 talked a lot about highwall mining this morning. And from
14 a hydrologic perspective, you excavate these large -- in
15 these panels, on these benches, you excavate large amounts
16 of void space in the Fort Union formation, and it's there.
17 Now, two things can happen. That can fill with water.
18 It's a giant void space. It's a giant porosity.

19 The other thing that can happen, which is more
20 problematic, is a collapse and material in-fills into
21 those void spaces. When that happens, the groundwater
22 flow path is changed dramatically because what's in-
23 filling is, in all likelihood, much lower permeability
24 than what was there before.

25 So now groundwater's coming down, hits those

1 previously void spaces, now filled with in-full, and it
2 can't get through. So it's going to go around. It's
3 going to go somewhere else. So the places where the
4 groundwater used to come into the alluvium, the timing of
5 when that used to come into the alluvium, is going to
6 change. And that could have -- I don't know if it will,
7 but it could have an effect on these alluvial valley
8 floors. So that's the importance of that.

9 And then, finally, I'll say -- and this is based
10 on very real world experience. You can't fix some of
11 these problems. Once you perturb a hydrologic system
12 that's in some sort of equilibrium with respect to
13 recharge and discharge, and where the flow paths are and
14 the velocities, you simply can't put it back. It couldn't
15 be done.

16 Now, that might not be a real problem in some
17 places. Other places it might. Just depends. I just
18 want to make the point here that you can't rely on "don't
19 worry I'll fix it." You just can't do that. And in
20 reading the statutes, that's why I see the word "prevent"
21 a lot. Prevent means you don't get in that spot to begin
22 with, so...

23 Q. Okay. Thank you.

24 A. I think that's the last of that.

25 Q. Okay. So you just talked a little bit about

1 some of the questions we were going to get to about -- you
2 know, so there's a lot of data here. Could we more
3 accurately predict potential environmental and reclamation
4 hazards and challenges and better plan for them with more
5 data?

6 A. With more data, significantly more data, and
7 monitoring. That's the other thing we haven't talked
8 about. You need not just -- the monitoring stations for
9 the baseline, in my opinion, were way, way too few. But
10 during operation of the mine, you need to monitor. During
11 post-closure, that's probably the most critical time to
12 monitor. Because in post-closure, you really get to learn
13 whether some of your assumptions were right or wrong.

14 And if there -- if impacts occur, you now have
15 some data, and you can deal with it. So if you had
16 significant amount more data and an adequate monitoring
17 plan -- what I read in the permit application was that,
18 essentially, they're going to use the same monitoring in
19 post-closure as they did for baseline, and I think that's
20 wholly inadequate.

21 Q. Okay. And without knowing these risks or having
22 this data, do you have an opinion on whether the company
23 is able to find that material damage to the hydrologic
24 system has been prevented?

25 A. I don't think there's enough data and enough

1 assessment to make any decision along those lines.

2 Q. Okay. In the absence of the studies and data
3 you told us are necessary to understand the hydrologic
4 balance and hydrologic systems, do you have an opinion on
5 whether DEQ should approve the permit application?

6 A. Based on the wholly inadequate assessment of the
7 hydrology, based only on that, I would say no.

8 Q. Okay.

9 A. But I can't really speak to the other aspects of
10 the permit application.

11 Q. So you were present for some of the testimony
12 previously about some additional monitoring that may be
13 required on the Tongue River and Goose Creek?

14 A. I heard, if I recall correctly, that there was a
15 commitment to put two or three wells in the Tongue River
16 alluvium. But I heard nothing about where they're going
17 to go and what their purpose is.

18 Q. And they're not currently in the permit
19 application or anything?

20 A. As I read the permit application -- and I'm
21 happy to be corrected on this -- I just didn't find any
22 existing Tongue River alluvium monitoring wells.

23 Q. Okay. If that additional monitoring would be
24 done, does that alleviate all your concerns?

25 A. I can't say until -- until the monitoring's

1 done, I get the data.

2 Q. Okay. But is it fair to say you have concerns
3 other than just that particular area?

4 A. I have concerns that the -- if you look at this
5 entire baseline characterization, and you say on a scale
6 of 1 to 10 how good is this one, this is a 2, in my view.
7 I mean, it's just not something that I would consider
8 adequate for me to go to a decision maker and say this is
9 what's going on. You can go ahead with your decision. I
10 would not do that based on this.

11 Q. Okay. Let's turn to the alluvial valley floors.
12 Could you tell us, based on your experience and
13 understanding, what is an alluvial valley floor and why is
14 it important?

15 A. Alluvial valley floor here -- and it's really
16 kind of an interesting thing. It's a western thing more
17 than anything else. We all know living in the West that,
18 you know, we're not the prime agricultural place in the
19 country. We're not Iowa or Illinois. So growing things
20 is not as easy.

21 One of the places that people figured out pretty
22 early on, that you can grow at least alfalfa for stock are
23 on those floodplains of major western rivers. They
24 figured that out. You can grow alfalfa there. And it's
25 been grown a lot. And the reason you can grow alfalfa in

1 a mostly arid place like we are is because of this
2 recharge I was talking about, where you get enough water
3 in through the spring recharge in the river, and then the
4 fall-winter recharge from the aquifer to keep the water
5 level in those alluvial aquifers within reach of the
6 roots. That's the -- that's why that exists. And if you
7 ride through this, what you'll find is in years of above-
8 average precip, there's a lot more alfalfa grown than in
9 years of below average. And that's because that maintains
10 that water level.

11 And in reading through the permit application,
12 through some of the other documents about AVFs, I kind of
13 deciphered that, first of all. Secondly, that there's a
14 fair amount less crop growing on these AVFs than there has
15 been in the past. And I think, in my opinion, that is
16 probably related to the fact that the water level is down,
17 compared to what it used to be, as a result of this
18 cumulative impacts. That's -- that's -- that would be my
19 professional guess at that.

20 Q. Okay. In your opinion, why is it important to
21 fully delineate these alluvial valley floors that might be
22 impacted by mining prior to mining occurring?

23 A. Well, if you don't know where they are, how can
24 you design a mine plan to protect them?

25 Q. Okay. Thank you.

1 I'm going to pull up DEQ Exhibit 16.

2 Mr. Wireman, are you familiar with this?

3 A. Yes. I've read this. Uh-huh.

4 Q. Okay. Do you have any concerns about the
5 alluvial valley floor mapping for this permit application
6 based on this document?

7 A. I have some concerns about the word "potential."
8 I mean, I don't know if this is the -- has a designation
9 process been completed and has a decision been made by DEQ
10 as to whether or not those are AVFs or not. So I don't
11 know the answer to that.

12 I will go on to say that they are located in --
13 along the river there, exactly where you would expect an
14 AVF to be. So I'm not surprised at the area they
15 designated. I'm a little surprised that they haven't made
16 a determination by this point.

17 Q. And does the lack of that determination cause
18 you any concern?

19 A. Well, it causes me, again, concern that a mine
20 plan can't be designed to protect that if they don't know
21 that they're there. I mean, I'm not a mining engineer,
22 but it -- you know, you need to know if you need -- some
23 places are highly sensitive and vulnerable and you need to
24 work around them or you don't. I mean, you just need to
25 know.

1 Q. Okay. I'm going to pull up DEQ 12, which is the
2 mine plan. And page 90 of that. Come on. All right. I
3 guess this is what I'm going to have to do. Sorry.

4 And, Mr. Wireman, I'd like you to read the two
5 sentences that start at the beginning of the last
6 paragraph, starting with "as discussed."

7 A. "As discussed in Appendix D11, no direct mining
8 is planned on the AVFs located in the Tongue River and
9 Goose Creek Valleys. Therefore, the essential hydrologic
10 functions within Tongue River and Goose Creek AVFs shall
11 be maintained."

12 Q. Okay. Is it really that simple?

13 A. Not at all. I mean, that's -- that's a little
14 apples and oranges to me. It says perturb the hydrologic
15 system. I mean, you can perturb that system without
16 digging up the alluvium, clearly. As we -- you cut off
17 the recharge, you've perturbed it. It's not receiving
18 that water in the places and time that it needs to be, and
19 that can be done without direct mining on the alluvial
20 deposits.

21 Q. Okay. How so?

22 A. Well, as I indicated before, if you -- and I --
23 again, I've looked at the mine plan, but I focused on
24 the hydrology. But I recall -- and I hope I'm right on
25 this -- that some of the panels, for instance along the

1 north side of the Slater Creek, those panels that benches
2 are going to be constructed and highwall augering was
3 going to occur, those were roughly parallel to Slater
4 Creek.

5 Now, if the water -- the base flow, groundwater,
6 is coming from northwest to southeast and some of that
7 enters Slater Creek, you've now cut a bench and stopped
8 that water from coming into Slater Creek alluvium and
9 you've stopped it from coming into the AVF and that lowers
10 water level and reduces abilities to grow crops.

11 Q. Okay. And do you have any opinions on whether
12 the permit application addresses or doesn't address those
13 kinds of impacts?

14 A. I think that the permit doesn't -- I need to
15 word this carefully. I think they should have taken it
16 quite a bit more seriously in terms of getting the data --
17 the quantitative data that's needed to make the
18 conclusions they've made. I mean, a conclusion like that
19 is really so, so general that -- I mean, what's it mean?

20 Q. Okay. I'm going to pull up DEQ 15 and go to
21 page, let's see, 10 of this document. Got to make it
22 smaller now. Where's my -- it's not Adobe, so I'm a
23 little bit perplexed. Okay. Just get us what we need.

24 Okay. Could you tell us a little bit about this
25 map?

1 A. This well appears to be one of the wells on
2 Slater Creek, and this appears to be the AVF that has been
3 delineated along Slater Creek.

4 Q. Do you have any opinions about the Slater Creek
5 alluvial valley floor that you'd like to share with the
6 council?

7 A. I, a couple, three weeks ago, I drove Slater
8 Creek. I went up there and drove from -- not the
9 headwaters, but fairly far up the creek and all the way
10 down to its confluence. And one of the things I noticed
11 that struck me was --

12 MR. KUHLMANN: Dr. Bagley --

13 A. -- there was a fair amount of vegetation.

14 MR. KUHLMANN: -- I'm going to object.
15 This was not in his report and this was not part of any of
16 his expert analysis that occurred prior to this hearing
17 that we would have had an opportunity to question him on,
18 such as at his deposition.

19 MS. ANDERSON: And, Dr. Bagley, similar to
20 previous responses I've had is the very purpose of this
21 hearing is for you to get evidence that will help you make
22 a decision, and that's exactly what Mr. Wireman's providing
23 to you today.

24 CHAIRMAN BAGLEY: You can answer the
25 question. I imagine you'll be crossed on it.

1 A. Again, I drove -- I had an opportunity to drive
2 down Slater Creek. And it's the spring of the year, so
3 it's sort of a high water time. But I did notice
4 indications of base flow coming into that. There was
5 vegetation. There was springs. There were little ponds
6 down through the valley of that. And what I took from all
7 that in my experience is there's base flow coming in here
8 to support some of that vegetation, because without
9 groundwater coming in, those vegetation couldn't make it
10 year-round. They just wouldn't have enough water supply.

11 So the first thing I picked up on is this is
12 intermittent stream, not an ephemeral stream. It's
13 intermittent in the sense that in times of the year when
14 there's a lot of groundwater coming in, there's flow in
15 the creek. And other times of the year, when there's not
16 much, there isn't. Slater Creek is different than the
17 Tongue River, because the Tongue River gets all that
18 snowmelt from the Bighorns. Slater Creek really doesn't,
19 and so it relies more on the base flow.

20 But that's why the AVF is there. I mean, that's
21 why they determined -- it wouldn't be there if there
22 wasn't significant amount of water in the alluvial
23 deposits to support an AVF, and that's groundwater.

24 Q. (BY MS. ANDERSON) Okay. Anything else you'd
25 like to add on the alluvial valley floors?

1 A. Just that they're highly sensitive. You know, I
2 applaud Wyoming, actually, for having such a thing as an
3 AVF. You don't see that. I haven't seen that hardly
4 anywhere else. It's a recognition that you can have some
5 agriculture in the right places in these arid
6 environments, and I think that's a good thing. However,
7 they're very sensitive to changes in that water level.
8 And you might not think that the total amount of water
9 that comes from that coal into the alluvium, if you just
10 put it out there in gallons or acre-feet, it's probably
11 not -- sound like very much. But if enough water to lower
12 the water level below the root zone, then it's a critical
13 amount of water, even though it's not a large amount of
14 water. And that's the concern I have. And I think we
15 need to recognize if you want to save these AVFs, they
16 have to be considered to be quite sensitive and quite
17 vulnerable to changes in the water level and changes in
18 the recharge. And that's -- that's, you know, really
19 critical for these. And it's pretty much spelled out.
20 You know, they recognize that in the regulation.

21 Q. Okay. So switching over a little bit to water
22 wells. I think your diagram speaks to this somewhat, but
23 do you have any opinion on whether water wells will be
24 impacted by mining operations?

25 A. I can't say. You know, that -- that's a real

1 frustration. And the modeling -- the modeling's very
2 careful. They -- they run the model, and then they say we
3 looked to see what the drawdowns are in locations where
4 there are existing wells. That's different from saying
5 there will be a drawdown in that well. It's a little bit
6 different.

7 Given the fact that they don't have any real
8 data for the portion of the Fort Union that supplies water
9 to many of these wells, and the water level data from the
10 wells, as I understand in reading the model -- MP --
11 Addendum MP-3 -- I'll be corrected if someone wants to --
12 but way I understand that was they had water levels from
13 about 15 coal wells that they used to help calibrate this
14 model. They then went to the State Engineer's Office and
15 obtained information on some number of these 357 wells. I
16 don't know how many. And they got water level data from
17 the SEO records. They then put that water level in the
18 model. And they couldn't get the model to calibrate at
19 all. So they essentially took that out and said, well, we
20 won't use it. We'll only generate these contours -- these
21 water level contours from the coal wells.

22 So what that gives you is simply the
23 potentiometric surface of the coal. It doesn't tell you
24 anything about potentiometric surfaces in the water in the
25 noncoal part of the Fort Union, which is where most of

1 these wells get their water. So that's the concern here.

2 Q. Okay. And based on your knowledge and
3 experience, there's some differences, again, between the
4 confined aquifers and the unconfined in terms of
5 vulnerability to these water wells?

6 A. Well, in terms of drawdown vulnerability, you
7 know, the unconfined aquifers around the country are
8 generally more vulnerable because they're at the surface,
9 so you can contaminate them with surface activities. In
10 terms of just drawdown, it is much, much easier to draw
11 down a water level in a confined water than in an
12 unconfined aquifer.

13 Q. Okay.

14 A. So you can't just look at so-called column of
15 water in the well. You know, where's the pump? Number
16 one, you can't get water below the pump. You can't just
17 say the depth of the well's a hundred feet. It's 10 feet
18 to water; therefore, I got 90 feet of water. What if the
19 pump's 50 feet, you don't have 90 feet of water. You got
20 40 feet of water. So that kind of information wasn't
21 really in here, so there was no way to really assess the
22 potential impact of these domestic wells due to declines
23 in water levels. So I really can't say. I mean, there
24 just was not enough information and data there.

25 Q. Okay. You've heard a little bit from the

1 company that they've replaced water wells if they're lost,
2 right?

3 A. Yes.

4 Q. Is it that simple?

5 A. Two concerns I have there. One I think has been
6 fixed. Originally I read that they would only replace
7 adjudicated wells, and I now understand the company has
8 agreed to replace nonadjudicated wells. And the reason
9 for that is -- and this is true all across the West in
10 prior appropriation systems -- people don't typically
11 adjudicate a domestic or stock well. They adjudicate
12 commercial wells, irrigation wells, municipal wells. So I
13 thought that was unfair. So that's been fixed.

14 The other concern is it states in the permit
15 application that water will be replaced until such time as
16 the essential function of the water has been replaced.
17 Don't hold me to that language. And my question was who
18 makes that determination? Who decides when at some point
19 post-mining the essential function of your well has been
20 returned, therefore, we're done. I don't know who decides
21 that or how you decide it.

22 And then thirdly, finally, as we've heard, it's
23 not that simple to just go out and put in a new well. In
24 this formation there are places where you can get plenty
25 of water. There's lots of places where you can't. So

1 knowing where that is, it's a crapshoot sometimes. And
2 we've heard that experience from a lot of the farmers out
3 there, the ranchers.

4 So, you know, you can spend money and figure
5 that out. You can drill pilot holes and do geophysical
6 logs and you would nail it. But most people can't afford
7 that.

8 Q. So going back to that complexity that we talked
9 about, does that raise any concerns for what you were just
10 talking about?

11 A. It raises the concerns that we don't know enough
12 here in this hydrologic system to make any judgments about
13 risk or about impacts. That's the concern it raises. I
14 can't say there will be major impacts. I just don't know.
15 There's just no way to come to that decision based on
16 what's in there.

17 MS. ANDERSON: Okay. Thank you. That is
18 all the questions I have for you at this time.

19 CHAIRMAN BAGLEY: Let us take a 10-minute
20 break. Be back here right around -- depends on what watch
21 I look at. Let's say 3:48.

22 (Hearing proceedings recessed

23 3:35 p.m. to 3:46 p.m.)

24 CHAIRMAN BAGLEY: Okay. Ready for
25 cross-examination.

1 Mr. Gilbertz.

2 MR. GILBERTZ: Thank you.

3 CROSS-EXAMINATION

4 Q. (BY MR. GILBERTZ) Good afternoon, Mr. Wireman.

5 A. Good afternoon.

6 Q. I have a few questions for you.

7 We have DEQ --

8 MR. GILBERTZ: That is 16, isn't it?

9 MS. ANDERSON: Yes.

10 Q. (BY MR. GILBERTZ) -- DEQ 16 up with the map
11 demonstrating areas marked as already designated AVFs and
12 then the potential AVF acreage. Do you see that?

13 A. Yes.

14 Q. Can you also see on there the lines that
15 delineate sections?

16 A. Yes.

17 Q. Okay. Assuming that these sections meet
18 standard protocol and they're a mile by a mile, can you
19 tell me how wide that AVF is, just roughly, in some
20 places?

21 A. Looks like a third to a half mile.

22 Q. Okay. Now earlier in your testimony, you
23 mentioned that when the river recharges or puts water into
24 the alluvium, it goes out tens or hundreds of feet.

25 A. Yes.

1 Q. From a hydrology perspective, then how can we
2 explain the place where the AVF, which would be an area
3 with this high groundwater table, right?

4 A. Uh-huh.

5 Q. How do we explain it extends much further than
6 that, beyond -- more than just hundreds of feet away from
7 the river itself?

8 A. Other sources of recharge.

9 Q. And what would those other sources of recharge
10 be?

11 A. I indicated groundwater is the primary other
12 source of recharge here. You also get direct
13 precipitation onto the floodplain itself, snow and rain,
14 which is different than the river.

15 Q. Very good.

16 A. Yeah.

17 Q. Now, while we're talking about that other source
18 of recharge -- I'm not going to put these up, but I
19 promise to come back to them for the council two weeks
20 ago, I guess. And in the reclamation plan, there was a
21 statement made by Brook that the -- there are regions
22 where the Carney seam subcrops into Slater Creek or Tongue
23 River alluvial material. And also states that there is
24 infiltration from overlying strata and communication with
25 the river alluvium. Are those statements important, from

1 a hydrological perspective, to you?

2 A. Yes.

3 Q. Why?

4 A. The cross-sections that are included in the
5 permit application, some of those show clearly the coal's
6 dipping beneath the river. And in some locations along
7 this permit area, those coals are very close to the bottom
8 of the river, and as you move east, they tend to be
9 deeper.

10 In any event, where they're close, per the
11 cross-sections, they probably subcrop in -- the alluvium's
12 in contact with the coals or alluvium's in contact perhaps
13 with the sandstone that's on top of the coal, but it
14 results in hydraulic communication between groundwater and
15 the Fort Union formation and the groundwater in the
16 alluvial deposits.

17 Q. Okay. And you say that that connection becomes
18 more pronounced as we move westward?

19 A. My remembrance of the cross-sections is as you
20 go west, the coals dip under the river, but they're
21 closer. They're higher up then as you go to the east.

22 Q. Okay. And you say with that becoming closer to
23 the surface, then there's more of a potential for
24 communication with the AVF?

25 A. That's true. Because the pathways that would

1 allow water to move from the Fort Union, whether it be
2 coals or other portion of the Fort Union up into the
3 alluvium, those pathways are shorter. It's just that
4 simple.

5 Q. And so to close that loop, if that's happening
6 more so on the west, then we're talking about this area on
7 our map that has been designated "potential AVF acreage"?

8 A. And this goes, as you can see, this AVF is
9 essentially the floodplain of the Tongue River, and it
10 goes all the way to the west end of the permit boundary,
11 yeah.

12 Q. Good. Now, I had a question about the drawing
13 you did for us to talk a little bit about potentiometric
14 pressures. And we were looking at this water well that
15 you drew for us. Part of your testimony was a discussion
16 of how the water well analysis did not discuss the impacts
17 of -- to water wells that may not be drilled within this
18 coal seam itself.

19 A. Yes. As I read in the permit application, it
20 states that it was either most majority -- I can't
21 remember the exact word, but many, many of these wells
22 take water from noncoal parts of the Fort Union formation.

23 Q. Why should we even be concerned about that,
24 then, if they're not taking water out of the coal that's
25 going to be dewatered?

1 A. You know, the -- the degree to which groundwater
2 in the Fort Union is connected to groundwater in the
3 alluvium varies across this -- this whole area. The
4 relationship between the coal and the AVFs, if you've got
5 an upper grade, as I indicated on the thing, water's
6 trying to move up. If the water level, potentiometric
7 surface, of the coal is above the river, or even if it's
8 high up in the Fort Union, water wants to move up there.
9 It's an upper gradient.

10 Let's say you have a water level in the
11 alluvium, and the potentiometric surface of the coal is
12 above that water level in the alluvium, that means the
13 direction of flow, to the extent that it occurs, is from
14 the coal into the alluvium. And if you lower the
15 potentiometric surface in the coal to where it is below
16 the water table in the alluvium, goes the other way. Then
17 the potential for flow is down from the alluvium into the
18 coal.

19 And it's been noted in the permit application
20 and in the modeling effort, that there is some places
21 where you -- the coal essentially drains water out of
22 alluvium. And if you mine it and expose it, it will do
23 that. If I recall correctly the model actually did both.
24 It had cells where it took water from the river and some
25 cells gave water to the river.

1 Q. Now, I think you've been clear about this, but I
2 want to be clear and close the loop. Why does any of that
3 matter to us if the coal mining isn't going to happen in
4 the alluvium itself? If we're way up on the hill a
5 hundred yards, 300 yards up and cutting through the coal
6 up there, why does it matter what's going on with the coal
7 as it interacts with the alluvium?

8 A. At any given AVF location, the groundwater that
9 comes into the alluvium, where the AVF occurs, that
10 groundwater, as I've indicated, is -- some of that is --
11 results from river recharge, some of that results from
12 recharge from the groundwater. If you take away the
13 groundwater recharge component of that, you run the risk
14 of lowering that water level in those alluvial deposits
15 below root zone. That's the risk you run.

16 Now, I can't say that will happen, but what I
17 can say is there's absolutely no discussion of it. It is
18 a hydrologic reality that water flows from high pressure
19 to low pressure. It is a reality that there are sandstone
20 units in this Fort Union that transmit water. In all
21 likelihood, there's fractures. It's a semi-consolidated
22 formation. You know, that's a geologic term. It's not
23 like granite. It's not that hard. But it's not just sand
24 either. It's kind of in between. What that means is
25 there's fractures in it and there are pathways in there

1 that water can move. So that delivers those pathways,
2 allow water from that Fort Union to move up into the
3 alluvium and help maintain that water level. So if you
4 cut that off, depending how much that is, you run that
5 risk.

6 Q. But now, again, to kind of further our
7 discussion of how these other aquifers could be impacted,
8 I wonder if you could do me a favor on your drawings for
9 us, if you could. I understood that you, as you've
10 ascribed -- I think all my pens are up there. So would
11 you use a different color so that it will be helpful, like
12 a green, please.

13 First of all, before you start drawing, I
14 understood you to tell us about why these various
15 claystones and sandstones and gravels have become
16 intermixed in your description how the river flowed
17 through historically. And I got this picture of
18 checkerboards of materials sometimes stacked on top of
19 each other and things of that nature.

20 If there was a -- a sandstone aquifer sitting
21 just above the -- the coal seam -- first of all, let me
22 ask you geologically, could that happen?

23 A. Well, sure.

24 Q. Okay. And then we had a person with a domestic
25 well drilled into the sandstone.

1 A. All right.

2 Q. If the water to the coal seam is interrupted --
3 we've kind of heard this discussion I think a couple weeks
4 ago about, well, this is a bathtub. It's fully confined.
5 Whatever happens to the water in it happens to the water
6 in it. So here's my question to you. From a hydrology
7 perspective, if the water in the coal seam is dewatered,
8 what, if any, impact does it have on the aquifer of
9 sandstone that is being used?

10 A. Okay. This is -- let's just look -- let's say
11 you have coal here and it's saturated, there's water in
12 it. And if you were to put a well into this coal -- let's
13 say it's confined by all this overlying Fort Union
14 formation and the alluvium of the Tongue River. So
15 there's a lot of material on top of that coal that results
16 in confining this well. If this water well potentiometric
17 surface is above that sandstone and then you have a sand
18 here that would have potentiometric surface associated
19 with the sand, and if that's -- you know, right now let's
20 say that's here, and now the water wants to move from the
21 coal up into the sand. Okay? Now, if you take all the
22 water out of the coal and this water level goes down here,
23 so then the flow direction's going to go the other way.
24 Then the -- the water in the sand, if it can get there,
25 will want to flow down because it's going from high

1 pressure to low pressure.

2 So a sand directly on top of the coal, in my
3 look at this, would be kind of a continuous water-bearing
4 zone. I wouldn't separate them out. They're both
5 permeable enough so that water will act as a single water-
6 bearing zone. You can call it an aquifer, and then go
7 back to the definition of aquifer. And if it pumps enough
8 water for somebody to use, it's aquifer, pretty much.

9 So that's the risk you run here. And not
10 knowing which portions of this Fort Union that have
11 significant sands that -- and, secondly, if these domestic
12 wells are developed in these sands -- because drillers,
13 you know, I've worked with drillers a long time. They get
14 pretty darn good. They drill a hundred wells out here.
15 They say I know there's a sand here. I know how deep it
16 is and where it is because I've hit it 10 times before.
17 So they look for that.

18 And that wasn't discussed, because the low
19 permeability portions of the Fort Union, where you have
20 claystone and siltstone, you're not going to want to put a
21 well there. It's just not going to get enough water.
22 So...

23 Q. And so the notion that if the domestic water
24 well is drilled into an aquifer other than the coal
25 itself, that, therefore, that aquifer is safe. It is not

1 a --

2 A. No, that's -- that's just not a correct
3 assumption.

4 Q. Okay. Very good.

5 Now, when you were working here with me just
6 now, you used a green marker to draw the sand and items
7 for us, right?

8 A. Right.

9 Q. And, previously, you had used what appears to me
10 to be a bluish marker?

11 A. Yeah. This can be sand and this can be sand.

12 MR. GILBERTZ: Okay. Just so our record
13 becomes clear, I'm not offering this for admission into
14 evidence, but I think it would be good for it to be offered
15 as a demonstrative exhibit to be part of the record so that
16 when someone reads this, they can understand what was being
17 discussed.

18 CHAIRMAN BAGLEY: Any objections? No?
19 We'll accept it as demonstrative.

20 (Fisher Exhibit No. 27D
21 received in evidence.)

22 MR. GILBERTZ: Okay. I think what I will
23 do, then -- we're at 27, correct? So we'll do it as
24 Fisher D27, the D for purposes of designating it as
25 Demonstrative. And I actually just labeled that Fish 27-D

1 instead of D27. Okay.

2 Q. (BY MR. GILBERTZ) Now, I wanted to visit about
3 another item that came up. And as it may relate to this
4 AVF, when I say as it came up, it came up a couple weeks
5 ago.

6 There was a discussion about how much water was
7 going to be removed from the coal. And a figure got
8 thrown out that it was going to be something like .2 CFS
9 was going to be pulled out of the coal. And how that
10 really is meaningless to the flow in the Tongue River.
11 Okay?

12 A. Uh-huh. Yes.

13 Q. My question to you is if you pull .2 CFS out of
14 the coal seam, is it meaningless to the AVF?

15 A. Perhaps not. You know, comparing the amount of
16 dewatering volume that will be taken out of the coals to
17 the flow in the Tongue River is not relevant to the issues
18 here. What is relevant is how will taking that water out
19 of the coals affect the water level in the alluvium?
20 That's really what's relevant here, because, as I've
21 indicated, that water level is very sensitive or crop
22 growth is very sensitive to that water level. So that's
23 where the focus has to be. Tongue River has a lot of
24 water in it. A lot more than these coals do, I'm sure.

25 Q. And I'm sorry to go back to you, but I want to

1 go back to Fisher 27D for just a second and just talk
2 about the well you originally showed us with
3 potentiometric -- yes, the one in blue. And you showed us
4 that water level would go high.

5 A. Depending on how confined this zone is, the more
6 it's confined --

7 Q. Yes.

8 A. -- the more pressure put on it, the higher that
9 goes.

10 Q. Okay. And then to be clear, you said it doesn't
11 take much to pull that water that has been pushed above
12 the coal seam and up the wellbore to draw it down?

13 A. That's right. Because of the low storage
14 coefficients to get, let's say, 15 gallons a minute, which
15 is typical sort of yield for domestic well, 10, 15 gallons
16 a minute. To get that 15 gallons a minute out of this
17 well, you have to lower the water well significantly more
18 than you would in this well.

19 Q. Okay. And so to sort of close that loop a
20 little bit, if -- when the well is first drilled and the
21 water rises to that level that you have shown us on your
22 drawing, and then it begins to be used for domestic
23 purposes, would it be fair, from a hydrological
24 perspective, to say that entire water column remains
25 available for use?

1 A. No. What happens -- it depends on your pump.
2 If your pump has a capacity of 15 gallons a minute and
3 that's what you pump it at, then eventually what's going
4 to happen is this water level is going to lower to a point
5 where the column of water that's here can sustain
6 15 GPM. And I didn't -- it's hard to say where that would
7 be, except for things going to be lower than here.

8 Q. Okay.

9 A. No question about it.

10 And it's fairly typical also for when wells are
11 first drilled and completed in confined aquifers, it takes
12 a while for this to stabilize, even without any pumping.
13 So you don't take this -- well, you can take it when you
14 first drill a well, but really ought to come back a couple
15 weeks and take it again, because that's likely to be what
16 we call static level. The static water level is simply
17 the water level in the well without any pumping. And so
18 it has to equilibrate. So it might not drop much, you're
19 right, but over time it will reach some point where that
20 amount of water can sustain what that pump pumps.

21 Q. Okay.

22 A. That varies all over the place, really.

23 Q. I have this question for you. From a
24 hydrologist 's perspective, based on the work that has
25 been done on the Brook Mine, can you say -- would it be

1 fair to say, from a hydrological perspective at this
2 point, that it has been demonstrated that this proposed
3 operation has been designed to prevent material damage to
4 the hydrologic balance outside the permit area?

5 A. Based on what I've read, it is premature to come
6 to a decision -- or conclusion like that. There simply
7 isn't enough assessment and enough understanding of this
8 system to draw that conclusion.

9 Q. From a hydrologist's perspective, would you say
10 that the proposed operation, based on the information you
11 have now, will not interrupt -- oh, excuse me -- will not
12 materially damage the quantity or quality of water in
13 surface or underground water systems that supply alluvial
14 valley floors in the Tongue River, as you understand it.

15 MR. KUHLMANN: I'm going to object to this,
16 and I should have objected to the last question, but I
17 didn't. This is irrelevant. This is a finding that does
18 not relate to the permit's technical adequacy. It's a
19 finding under 35-11-406(n), which takes place prior to
20 issuance of the permit, and those findings have not been
21 made by DEQ.

22 MS. ANDERSON: And, Dr. Bagley, there's
23 also a requirement to have a Probable Hydrologic
24 Consequences section inside the permit application, which I
25 think is what this testimony goes to.

1 MR. KUHLMANN: That -- I would disagree
2 with that. That was not what the question was. The
3 question was could he make the conclusion under 406(n).

4 CHAIRMAN BAGLEY: Yeah.

5 MS. ANDERSON: And you might have --

6 CHAIRMAN BAGLEY: Thanks for the objection.
7 Go ahead and -- the question seemed clearly worded to me.
8 And we're asking for his expert opinion. Answer that --
9 ask the question.

10 A. Can you repeat it, please?

11 Q. (BY MR. GILBERTZ) I will. From a hydrologist's
12 perspective at this point in time, is there sufficient
13 data and information to conclude, as a hydrologist, that
14 the proposed mining operation would not materially damage
15 the quantity or quality of water in surface or underground
16 water systems that supply the alluvial valley floors as
17 you understand them in the Tongue River?

18 A. I'll give you a two-part answer. It is my
19 opinion that it will reduce the amount of groundwater
20 discharge into the alluvium. Clearly, that's my opinion.

21 Whether or not that does material damage is a
22 bit more of a subjective thing. Material damage, you
23 know, I don't know exactly what the definition of that is,
24 and if there is a definition of statute or regulation, and
25 it's somewhat subjective. But clearly you're going to

1 lower the water level result in that. And if that water
2 level goes down below the root zone, then yes, you get
3 material damage. If I was the farmer growing the alfalfa,
4 I would certainly consider that.

5 MR. GILBERTZ: Very good. I think that's
6 all the questions I have.

7 CHAIRMAN BAGLEY: Thank you, Mr. Gilbertz.
8 Ms. Boomgaarden.

9 MS. BOOMGAARDEN: No questions. Thank you.

10 CHAIRMAN BAGLEY: Thank you.
11 Mr. Kuhlmann.

12 MR. KUHLMANN: Thank you, Dr. Bagley. I
13 just have a couple of questions.

14 CROSS-EXAMINATION

15 Q. (BY MR. KUHLMANN) I just wanted to clarify for
16 the record, you said that you were not aware of whether
17 there is a definition under regulation for material
18 damage; is that correct?

19 A. I'm not aware.

20 Q. The other thing I just wanted to ask about
21 related to your -- your testimony earlier about Hidden
22 Water Creek.

23 A. Yes.

24 Q. I believe you mentioned that you had looked at
25 some Big Horn reports?

1 A. Yes.

2 Q. Could you identify what those reports are that
3 you looked at?

4 A. Actually, thank you for asking that. That was a
5 bit of a misstatement. That was actually mentioned in the
6 permit application, and that referenced Big Horn Coal. So
7 I did not read a specific Big Horn Coal report. That --
8 that statement that there is water in Hidden Water Creek
9 in the winter was actually mentioned in the permit
10 application on one of the appendices or addendums
11 somewhere. And I can't recall if it's cited -- Big Horn
12 was cited, but I don't recall if it specifically --

13 THE REPORTER: If it specifically?

14 THE WITNESS: A specific report was cited.

15 MR. KUHLMANN: I believe that's all my
16 questions. Thank you.

17 CHAIRMAN BAGLEY: Thank you, Mr. Kuhlman.

18 Mr. Pope.

19 MR. POPE: Thank you, Dr. Bagley.

20 CROSS-EXAMINATION

21 Q. (BY MR. POPE) Good afternoon, Mr. Wireman.

22 A. Good afternoon, Mr. Pope.

23 Q. I'd like to bring the discussion back to really
24 why we're here, and that's the standards for issuing
25 permit under Wyoming law. You would agree that at least

1 at the time you prepared your expert report in this case
2 you discussed with Ms. Anderson, you did not know a whole
3 lot about the Environmental Quality Act?

4 A. Depends how you defined a whole lot. But, yeah,
5 I don't know -- you know, I haven't had an occasion to
6 read it. So from that perspective, you're right.

7 Q. And in preparing your expert report, you didn't,
8 as you just said, read all the Environmental Quality Act,
9 right?

10 A. I did not.

11 Q. You didn't review all the regulations
12 promulgated under the Wyoming Environmental Quality Act?

13 A. Not all, but I read three of them that I think
14 are applicable to my review.

15 Q. You also didn't -- we've heard discussion about
16 what could happen in the future, impacts to water wells,
17 on the board up there. But you didn't do any specific
18 research in preparing your expert report on DEQ's
19 oversight authority of the Brook Mine, right?

20 A. I recall reading some information about their
21 inspections, about their authority to do inspections at
22 any coal mine in Wyoming. And sort of the -- how that
23 worked. But that's all I recall in terms of their
24 oversight.

25 Q. Now, you have no previous Wyoming permitting

1 experience, correct?

2 A. Of any kind of permit?

3 Q. You --

4 A. Or coal mine permits?

5 Q. That's --

6 A. I probably have experience with some kind of a
7 permit at one -- over 30 years. I'd be, you know, hard
8 pressed to recall what it is, but I can tell you exactly.
9 I've been involved with issuance of UIC permits.

10 Q. Let me be more precise, Mr. Wireman. You have
11 never helped anyone prepare a permit application in the
12 state of Wyoming?

13 A. No.

14 Q. In fact, you haven't helped anyone prepare a
15 permit application in any state?

16 A. That is correct. I worked for the federal
17 government, and we don't permit.

18 Q. In your expert report -- and it's actually
19 general finding -- I'm sorry. In your expert report you
20 have some discussion of the adequacy of Brook's bond. Do
21 you remember that being in your expert report?

22 A. Uh-huh. Yes.

23 Q. But you don't know any specifics, under Wyoming
24 law, about how a reclamation bond is calculated, right?

25 A. Not specifics, no.

1 Q. You didn't review DEQ Guideline 12 in asserting
2 that Brook's reclamation bond was inadequate?

3 A. That was not the basis for my conclusion.

4 Q. You also didn't review the statute in Wyoming
5 that governs how to calculate a reclamation bond?

6 A. No.

7 Q. You discussed with Mr. Kuhlmann a moment ago
8 about some information related to Big Horn Coal. I want
9 to follow up on that.

10 You didn't look at Big Horn Coal's permit file
11 or -- to investigate how Big Horn analyzed the
12 hydrogeology in the area it mined, correct?

13 A. I have read some -- some reports, some material
14 that Big Horn Coal put together over the years. I have.
15 And related to TR -- to T-1. And so, yes, I have read
16 some of their material.

17 Q. Let me be more specific. The question was, you
18 did not conduct an investigation of Big Horn Coal's permit
19 file to discover how Big Horn Coal had analyzed the
20 hydrogeology in the region?

21 A. I did not explore their files, no, I did not.

22 Q. I want to talk about something that's sort of
23 lurking under the surface at this whole hearing about
24 Brook's permit commitments. As we discussed at -- at the
25 deposition, you have concerns about whether Brook will be

1 able to carry out its permit commitments. But you would
2 agree you have no proof that Brook Mine will not live up
3 to the commitments it has made as part of the permit
4 application, correct?

5 A. I have concerns, but no proof.

6 Q. I want to shift gears a little bit and talk
7 about how you view the standard for acquiring a permit to
8 mine coal. You and I can agree that a company who wants
9 to mine coal in the state of Wyoming has to look at and
10 rely upon the statutes and regulations that discuss the
11 permitting process, right?

12 A. Yes.

13 Q. But you still think that Brook has to exceed, at
14 least in places, the requirements of Wyoming law to get a
15 permit, in your opinion?

16 A. No. I don't believe that at all.

17 Q. Your testimony here today -- and I want to be
18 clear, I'm not trying to trick you or anything here,
19 Mr. Wireman, I just want to make sure I understand your
20 testimony -- is that you do not believe Brook has to
21 exceed the requirements of Wyoming law to get a permit?

22 A. I don't believe they need to exceed the
23 requirements. The question is what are the requirements.
24 And my statements in my report are based in part on the
25 fact that many requirements require some interpretation by

1 the regulatory agency, DEQ or the coal company. It's not
2 checklist black and white. So there's some times when
3 people have to interpret what is meant by a particular
4 section of the statute or a particular requirement. And
5 sometimes those -- it's open to interpretation, slightly
6 differently, by different people.

7 Q. In forming that opinion about what Brook has to
8 do to get a permit application, you relied on standard
9 hydrogeologic concepts and practices rather than a
10 particular statute or regulation, right?

11 A. Relied upon both.

12 Q. As a result of relying on standard hydrogeologic
13 concepts and practices, you can't say whether some of your
14 opinions are based on a hydrogeology standard or on what
15 Wyoming law requires; isn't that right?

16 A. No, that's not right.

17 Q. Well, I've tried to avoid this to the best of my
18 abilities, Mr. Wireman, but --

19 MR. POPE: Permission to approach the
20 witness, Dr. Bagley?

21 CHAIRMAN BAGLEY: Granted.

22 Q. (BY MR. POPE) Mr. Wireman, I've handed you a
23 copy of your deposition transcript. You remember I guess
24 about a month ago at this point you came to the Denver
25 offices of Holland & Hart for a deposition, right?

1 A. Correct.

2 Q. And you and I had the chance to sit down in a
3 conference room and discuss the opinions in your report,
4 right?

5 A. We sat down and you asked me a whole bunch of
6 questions.

7 Q. Fair enough. And there was a court reporter
8 present who administered an oath to you to tell the truth,
9 right?

10 A. Yes.

11 Q. And you told the truth?

12 A. Yes.

13 Q. If you would turn to page 99 in that transcript.
14 It is a condensed version, so that page 99 appears at the
15 25th page of the transcript.

16 A. I'm there.

17 Q. I'd like to direct your attention to line 7.
18 Question here starts, "Let's be specific about that term.
19 You have lodged a criticism about the hydrogeologic
20 characterization within Brook Mine's permits application.

21 A. Yes.

22 Q. That criticism, the standard used for that
23 criticism is not the standard set out in Wyoming statutes
24 and regulations, rather it is the standard you described
25 as the commonly accepted method of hydrogeologists?

1 A. I can't answer that because I don't know
2 specifically what's in the Wyoming statute, so I can't --
3 so I can't really answer that. Their statute may require
4 a more rigorous characterization. I don't know. You
5 would have to show me the statute."

6 Did I reads that correctly?

7 A. You did.

8 Q. And in part, because you were relying upon your
9 professional experience as a hydrogeologist, you cannot
10 reconcile the data requirements that you spoke about on
11 direct with the data requirements under Wyoming law
12 because you haven't read those statutes?

13 A. I now have read the statutes.

14 Q. So let's be clear. At least at the time of
15 preparing your expert report, which you discussed with
16 Ms. Anderson on direct, you could not reconcile the data
17 requirements you discussed with the data requirements
18 under Wyoming law because you had not read Wyoming law?

19 A. No. I would not say that's true. I can
20 reconcile it. And if you'd like, I can explain.

21 Q. Well, actually, I'd like you to turn back to the
22 deposition transcript. Actually, if you're still on page
23 25, if you look at page 97. I'd like to direct your
24 attention to line 10. Do you see line 10?

25 A. I do.

1 Q. There the question is, "How do you reconcile the
2 standard you set for hydrologic detail with the standard
3 that the Wyoming legislature has set for hydrologic
4 detail?

5 A. I don't know what their standards are, so I
6 can't reconcile that." Did I read that correctly?

7 A. You did.

8 Q. In developing your opinions in this case, you
9 were not trying to develop a model for what's required as
10 part of the Wyoming permitting process, correct?

11 A. I don't know the answer to that because I don't
12 see them as distinct as you do. The statutes require a
13 characterization, and they required it for specific
14 reasons. And I know how to do, based on hydrologic
15 characterizations. And I know what's adequate. I know
16 what is good and what is bad. I now have read the
17 statutes, and based on what the statutes you're asking
18 for, I stand by my decision that it's not adequate.

19 Q. Now that you've read the statutes. Is that what
20 you said?

21 A. Yeah. Yeah.

22 Q. Okay. Let's talk for a moment about what you
23 think of the Department of Environmental Quality. You
24 believe that state agencies don't always pay enough to
25 acquire the best and the brightest people; is that right?

1 A. State agencies, federal agencies, private
2 consultants. It's across the board. Uh-huh.

3 Q. Fair enough, Mr. Wireman. But I asked a pretty
4 specific question, so I need an up or down answer. And
5 I'll re-ask it so there's no confusion.

6 A. Okay.

7 Q. You would agree that states, state agencies, do
8 not always pay enough to get the best and the brightest
9 people to work for them?

10 A. Some state agencies don't often pay enough. I
11 would not say that about every state agency in the country
12 at all. Because some pay plenty.

13 Q. You think that state agencies are typically
14 understaffed, right?

15 A. I wouldn't say typically. I'd say some state
16 agencies are often understaffed, yes.

17 Q. You also think that state agencies are
18 underfunded, right?

19 A. Well, that's, you know, subjective opinion.
20 But, yes, in some cases I do think that.

21 Q. All right. And, in fact, you told me at your
22 deposition that you don't think, based upon the permit
23 application that Brook Mine submitted to DEQ, that DEQ has
24 hired the best and the brightest, right?

25 A. I don't recall saying that to you. You know, I

1 pointed out the issues of state agencies often not being
2 funded enough, which is absolutely true. And that
3 sometimes results in the brightest and the best going
4 somewhere else. Private sector pays more money. We all
5 know that.

6 Q. I just want to be clear. If you turn to page 53
7 of your deposition transcript, and let me know when you're
8 there.

9 A. 52?

10 Q. 53.

11 A. 53.

12 Q. Should be in the top left.

13 A. I'm there.

14 Q. I'd like to direct your attention to line 13.
15 If you'd follow along with me, please. The question here,
16 "Have you come to an opinion on whether Wyoming DEQ has
17 hired, as you say, the best and brightest?

18 A. Well, I have an opinion based on this. If their
19 folks think this plan satisfies these two pieces of law,
20 then, yeah, I have some real suspect -- I have some real
21 concerns about that." Did I read that correctly?

22 A. You did.

23 Q. And, in fact, at your deposition you went on to
24 say that you don't trust DEQ in some regards, right?

25 A. If it's in the transcript, I said it.

1 Q. And the reason I'm asking this line of
2 questions, Mr. Wireman, is despite having opinions about
3 DEQ, you never spoke to anyone at DEQ about Brook's permit
4 application, right?

5 A. I did not.

6 Q. All right. You didn't know any of the
7 qualifications of the people who were reviewing Brook's
8 permit application?

9 A. No.

10 Q. So, for example, you didn't know that
11 Dr. Kuchanur has a PhD in environmental engineering?

12 A. Yes, I did know that, actually. It was in his
13 resume or CV that I have seen, so I knew that.

14 Q. At the time you prepared your expert report, you
15 knew that?

16 A. Probably not at the time I prepared the report.
17 That was March. I probably didn't know Dr. Kuchanur even
18 worked for DEQ.

19 Q. So let me be precise here. At the time you
20 prepared your expert report, in addition to not knowing
21 that Dr. Kuchanur had a PhD in environmental engineering,
22 you didn't know that his doctoral dissertation was on
23 optimizing groundwater models for environmental
24 protection, right?

25 A. No. I did not know that.

1 Q. At the time you prepared your report, you didn't
2 know that Dr. Kuchanur is a lead instructor for the Office
3 of Surface Mining's national training course on the
4 software that Brook used to build its groundwater model?

5 A. No.

6 Q. At the time you prepared your expert report, you
7 didn't know that Dr. Kuchanur taught coal mine permitting
8 hydrology, quantitative hydrogeology and applied
9 engineering principles for OSM either?

10 A. No, I did not.

11 Q. You also, as a result of not talking to anyone
12 at DEQ when you prepared your expert report, you didn't
13 know that DEQ had found that Brook's groundwater model
14 matched industry standards, right?

15 A. I'm not sure what industry standards you're
16 referring to.

17 Q. You didn't know that when DEQ reviewed Brook's
18 permit application, that they used an aquifer database to
19 cross-check the data in the Brook permit application?

20 A. I'm not sure what you mean by that.

21 Q. I'm just asking -- I'm stating you were not
22 aware that DEQ, in its review of the Brook permit
23 application, used an aquifer database to cross-check the
24 data in Brook's permit application?

25 A. No, I wasn't aware.

1 Q. All right. You also didn't know that in
2 reviewing the groundwater portions of the Brook permit
3 application, that Dr. Kuchanur reviewed the methodology of
4 the permit to ensure that it adhered to general industry
5 standards?

6 A. No. I don't know what that means, so obviously
7 I didn't know.

8 Q. You talked a lot about data. You were not aware
9 that in Dr. Kuchanur's review of the input data, that he
10 was able to determine that it was representative of
11 site-specific conditions, right?

12 A. I read that in the report, that they assumed it
13 was representative. I just disagree.

14 Q. I apologize, Mr. Wireman, if I wasn't clear. My
15 question is not about the Brook permit application. My
16 question is you didn't know that as DEQ reviewed the
17 permit application, that Dr. Kuchanur found that the input
18 data was representative of site-specific conditions.

19 A. Well, I knew that it was done because I read it
20 in the permit. I didn't know who specifically made that
21 conclusion. You're right.

22 Q. You also didn't know that Dr. Kuchanur, in his
23 review, ran Brook's groundwater model and evaluated the
24 results of that model?

25 A. Yes, I did know that. I don't know when I

1 learned it, but I do know that, yes. As I understand it,
2 the model was run both by the consultant for Brook Mine
3 and by DEQ. That's my understanding.

4 Q. And at least at the time you prepared your
5 expert report that you discussed with Ms. Anderson, you
6 didn't know that Dr. Kuchanur had confirmed that the
7 results of Brook's groundwater model were consistent with
8 what was found in the field in the area of the permit?

9 A. I knew that's what the permit application said,
10 but I didn't know who at DEQ made that. That's correct.

11 Q. Mr. Wireman, I think we might be getting our
12 wires crossed here. I'm not -- I'm not talking about
13 statements in the permit application. I'm talking about
14 DEQ's review process.

15 A. I never had a discussion with Dr. Kuchanur about
16 anything.

17 Q. So I need to back up so the record is clear on
18 this. In DEQ's review, because you didn't speak to
19 anyone, you didn't know that Dr. Kuchanur confirmed that
20 the results of Brook's groundwater model were consistent
21 with what was found in the field?

22 A. No.

23 Q. And you -- you yourself did not run Brook's
24 groundwater model, right?

25 A. No.

1 Q. Given that you didn't speak to DEQ, you also
2 didn't know that DEQ used conservative estimates in
3 evaluating Brook's permit application?

4 A. Yes, I knew that. Because, again, that's
5 written in the permit application, that they used
6 conservative estimates. I disagree with it, but that's
7 what it said, yes.

8 Q. Again, Mr. Wireman, if we're getting our wires
9 crossed here, I apologize. My question is not about
10 what's in the permit application --

11 A. You asked me if I knew, and I did know.

12 Q. What I'm asking you is, you did not know that
13 DEQ in reviewing Brook's permit application, used
14 conservative estimates as part of that review?

15 A. Yes, I did know that. That comes through pretty
16 clear. I knew DEQ ran the model, and I knew that the
17 permit application said they used conservative values.

18 Q. Okay. You also -- you may have heard testimony
19 a couple weeks ago that DEQ used other sources of data
20 beyond Brook's permit application in evaluating the
21 application, right? Did you hear that?

22 A. Yes, I did hear that.

23 Q. But you didn't speak to anyone at DEQ about
24 these additional sources of data used in the review
25 process?

1 A. No. I looked at the references. Uh-huh.

2 Q. All right. Let's talk about some of your
3 substantive opinions you talked about on direct. You
4 mentioned that there is a potential for unfixable
5 problems. Do you remember that?

6 A. Yes.

7 Q. You weren't aware, at least at the time you
8 prepared your expert report and at the time we talked at
9 your deposition, of any mines in Wyoming with unfixable
10 hydrogeology problems?

11 A. Not in Wyoming.

12 MS. ANDERSON: Objection. I mean -- never
13 mind. I should have raised it --

14 A. But I do at other mines.

15 Q. (BY MR. POPE) And my question is limited to
16 Wyoming mines, and we've got our answer, so --

17 A. Geology is not that different --

18 THE REPORTER: I'm sorry?

19 THE WITNESS: It's okay. I --

20 THE REPORTER: No, say it again.

21 THE WITNESS: Okay. I said geology in
22 Wyoming is not drastically different than other places.

23 Q. (BY MR. POPE) And at least at the deposition,
24 you told me, Mr. Wireman, that you were not aware if Big
25 Horn Coal, in its operations in and around Brook -- the

1 proposed Brook permit area, had any unfixable hydrology
2 problems.

3 MS. ANDERSON: Objection. Relevance. I'm
4 not sure what some other company's past practices have to
5 do with the permit application before us.

6 MR. POPE: Dr. Bagley, he stated that it's
7 all about data and evaluating the data. He has made an
8 assertion that there's a potential for unfixable hydrology
9 problems. I'm getting to the point there are data sources
10 that speak to that that he hasn't reviewed.

11 CHAIRMAN BAGLEY: He did mention that he
12 felt that could happen. I'll allow the question.

13 A. What was the question?

14 Q. (BY MR. POPE) Certainly, Mr. Wireman.

15 You don't know if Big Horn Coal, as part of its
16 operations in and around the proposed Brook permit area,
17 had any unfixable hydrology problems?

18 A. I did not ask them, huh-uh.

19 Q. Let's talk about alluvial valley floors for a
20 moment. At least at the time you prepared your expert
21 report, and at the time we spoke at your deposition, you
22 had not looked at any DEQ decision documents designating
23 certain places in and around the permit area as alluvial
24 valley floors, right?

25 A. Yes, I had. I knew that there had been a

1 determination of an AVF on Slater Creek, and I knew that
2 there were potential AVFs along the Tongue River. But
3 Tongue River, as I understand, they haven't been formally
4 designated.

5 Q. And let me be precise. I think, again, we may
6 be passing in the night here. You did not go and look at
7 any DEQ decision documents in preparing your expert report
8 that designated any AVFs along the Tongue River?

9 A. I think I did. I think I saw a letter dated
10 March 2016. Don't hold me to that. That was a letter,
11 DEQ letterhead, that said we have designated an AVF on
12 Slater Creek.

13 Q. Would you pick up your deposition transcript
14 again for me, please, and turn to page 135.

15 A. It's possible I hadn't seen it at the time of
16 the deposition.

17 Q. Are you at page 135?

18 A. Yes, I am.

19 Q. I'd like to direct your attention to line 19.
20 Do you see that?

21 A. Yes.

22 Q. Question here, "So did you, as part of figuring
23 out how many AVFs there were -- I'm not going to hold you
24 to a number -- did you go look at DEQ's decision documents
25 designating AVFs on the Tongue River?"

1 A. No. It wasn't available to me, or at least I
2 haven't seen it."

3 A. That was probably true at the time, and since
4 then I have seen it.

5 Q. Just a moment, Mr. Wireman. I did read that
6 passage from your deposition correctly?

7 A. You did.

8 Q. Mr. Wireman, are you aware that Wyoming law
9 permits a mine to disturb certain types of alluvial valley
10 floors?

11 A. I --

12 MS. ANDERSON: And I will raise an
13 objection to the extent that calls for a legal conclusion.

14 MR. POPE: Dr. Bagley, there have been
15 numerous questions both by Ms. Anderson and Mr. Gilbertz
16 about his ultimate conclusions about hydrology under
17 Wyoming's permitting requirements. I'm simply asking a
18 similar type question.

19 MS. ANDERSON: I think if he phrases it as
20 his professional understanding of -- that would --

21 CHAIRMAN BAGLEY: Could I hear the question
22 again, please?

23 MR. POPE: Absolutely. The question is,
24 are you aware, Mr. Wireman, that Wyoming law permits mines
25 to disturb alluvial valley floors?

1 CHAIRMAN BAGLEY: Yeah, that's a -- that's
2 not a -- doesn't require a legal analysis, just whether
3 he's aware of something or not. I'll allow that question.

4 A. I'm aware.

5 Q. (BY MR. POPE) Did you know that the Cordero
6 Rojo Mine was able to successfully replace alluvial valley
7 floors in the Belle Fourche River that it disturbed as
8 part of its mining?

9 A. No.

10 Q. Did you know that three other coal mines in
11 Wyoming accomplished similar feats of restoring disturbed
12 alluvial valley floors?

13 A. No.

14 Q. I want to pull DEQ Exhibit 16 back up and
15 discuss a couple of things with you.

16 You spent time talking with Ms. Anderson and
17 Mr. Gilbertz about the potential AVF acreage at the bottom
18 of the screen. Mr. Wireman, you would agree with me that
19 that likely green-shaded potential AVF acreage has not
20 actually been designated as AVF acreage by DEQ?

21 A. That's my understanding.

22 Q. Mr. Wireman, I think you said you drove out
23 somewhere in this area. Did you happen to notice on the
24 north side of that potential AVF acreage the Tongue River
25 ditch?

1 A. No.

2 Q. Are you aware that the Tongue River ditch that
3 is on the north side of that potential AVF acreage serves
4 as recharge to the Tongue River?

5 A. No.

6 MS. ANDERSON: Objection. I don't know
7 where that is found in the permit application or any
8 information, but there was no foundation laid for that
9 question.

10 CHAIRMAN BAGLEY: Well, he did mention that
11 he'd driven the area, and I had one objection, which I
12 overruled.

13 So I'm going to overrule this one and let you
14 answer that question.

15 A. I'd like to hear your question again, Mr. Pope.
16 That it recharges the river? That a ditch recharges the
17 river.

18 Q. (BY MR. POPE) My question, Mr. Wireman, are you
19 aware that water from the Tongue River ditch, the area
20 along the north side of that potential AVF acreage, serves
21 to recharge the Tongue River?

22 A. I'm not aware. And I'd be very surprised if
23 that's the case.

24 Q. Okay. I want to get into your hydrogeology
25 characterization opinions in a moment. I have a couple of

1 quick questions for you about some of the other opinions
2 you had. General finding number one in your expert report
3 is there are variability in the estimates of coal
4 production. Just for purposes of the record, you would
5 agree that there is a single estimate of coal production
6 in Brook's permit application, right?

7 A. Yes.

8 Q. You also make the statement in your expert
9 report -- and this speaks to the cumulative impacts of the
10 Brook Mine, that there needs to be a discussion of the
11 degradation of riparian and fish ecologies that rely on
12 groundwater discharge. Do you recall that in your report?

13 A. Yes.

14 Q. Mr. Wireman, are you aware there are no fish
15 ecologies that rely on water discharge from any of the
16 areas within the proposed Brook Mine?

17 A. I don't know that, if that's true or not. Is
18 that true?

19 Q. I'm asking if you know.

20 A. Oh, I'm not aware of fish ecologies, but I am
21 aware of riparian ecologies.

22 Q. All right. Let's talk for a moment about water
23 wells. You would agree that the Brook permit application
24 has a groundwater model that predicts potential drawdown
25 of water in the proposed permit area?

1 A. I'm not sure I'd agree with that. I don't know
2 that it predicts at all. It attempts to predict.

3 Q. All right. So it sounds like we have a -- a
4 semantic disagreement on that. And that's fine. Were you
5 aware, in your review of the Brook groundwater model, that
6 it took into account the potential reduction of pressure
7 that you discussed in that demonstrative exhibit?

8 A. Can you explain that? It took into account a
9 reduction in pressure for what?

10 Q. Mr. Wireman, you spent some time discussing, as
11 part of that demonstrative exhibit, that changes in
12 pressure could affect water well drawdown, right?

13 A. No. What I said was changes in recharge could
14 affect water levels in the alluvium. That's what I said.

15 Q. Okay. I -- and I guess the transcript will
16 reflect this. I'm going to ask the question anyway. You
17 spent some time discussing how pressure can impact the
18 water level in wells. My question is, are you aware that
19 the Brook groundwater model, its water drawdown
20 predictions, takes into account potential changes in
21 pressure?

22 A. Not specifically, but I'm not surprised.

23 Q. Okay. You said on direct that there is a lack
24 of understanding of where domestic water users get their
25 water. Are you aware that the state engineer's office has

1 drilling logs that indicate the depth and -- the depth of
2 water wells?

3 A. I'm very aware what the water database is, yes.

4 Q. All right. Let's -- let's get into some of the
5 cumulative impacts that you talk about in your report.

6 One of them is they suggest that there needs to be a
7 better discussion of the effect of coal-bed methane. Do
8 you recall that in your report?

9 A. Yes.

10 Q. You're aware -- I guess I should ask this -- ask
11 it this way. Are you aware that the Brook permit
12 application discusses the impacts of coal-bed methane
13 drawdown in 20 different places?

14 A. It mentions it. It does not discuss it.
15 There's a difference.

16 Q. Let's talk about that for a moment. I'd like to
17 go to DEQ Exhibit 12-059. Pull that up on the screen for
18 you. I'm sorry. DEQ Exhibit 12-058. I'm going to blow
19 up a paragraph for you, Mr. Wireman. And this is going to
20 continue on the next page, but I want to start here.

21 Paragraph says, "As described above, the Brook
22 Mine is expected to have an extremely small effect on
23 surface water quality in the Tongue River and other major
24 streams adjacent to the permit boundary of the Brook Mine.
25 As such, no effect on designated uses present on major

1 streams adjacent to the permit boundary is expected." Did
2 I read that correctly?

3 A. Yes.

4 Q. All right. Now let's go to DEQ Exhibit 12-059.
5 Just the last paragraph. The second sentence there,
6 Mr. Wireman, says that "The Target Coal seams are
7 predominantly dry in the western portion of the permit
8 area and eastern portions have been affected by CBNG
9 development." Did I read that correctly?

10 A. Yes.

11 Q. Mr. Wireman, in your review of the permit
12 application, did you look at Appendix D6, where it
13 explains how Brook analyzed the drawdown effects of
14 coal-bed methane?

15 A. I read all Appendix D6. I'm assuming I did,
16 yes.

17 Q. Sticking with the cumulative impacts and the
18 characterization of the area, you -- you stated on direct
19 that you had reviewed some utilities Geological Survey
20 data, correct?

21 A. Yes.

22 Q. Did you review a study conducted by Mr. Barnum?

23 A. I've seen the reference, but, no, I haven't read
24 the report.

25 Q. Did you review the study that the USGS did by

1 Mr. -- Driscoll and Carter?

2 A. I might have. Can you tell me the name.

3 Q. Those are the authors of the study.

4 A. Yeah, but I'd have to know the name of the
5 report. I can't remember it by author. I read many,
6 many, many USGS reports, so...

7 Q. Mr. Wireman, it's true that you, in analyzing
8 how the Brook permit application characterizes the
9 hydrogeology, you didn't review all the available historic
10 data on the area, correct?

11 A. Probably not all of it, no.

12 Q. You made some comments that you just think
13 it's -- it's unlikely or -- and I apologize. I forget the
14 exact phrase you use. But you think it's unlikely that
15 Brook's assertion that the groundwater in the area is
16 isolated is likely to be true, right?

17 A. I don't believe it's true. I don't believe it's
18 isolated.

19 Q. But you didn't do any independent studies to
20 determine whether or not the groundwater within the Brook
21 permit area is isolated or not, right?

22 A. I've read a number of studies about groundwater
23 in the Fort Union formation, but I have not personally
24 conducted those studies.

25 Q. Now, you express some opinions in your expert

1 report that call into question whether or not the western
2 area of the permit area is dry, right?

3 A. It's termed as predominantly dry, partially dry.
4 I've heard all those terms. And it's really kind of hard
5 to figure out what that means. I think of it as variably
6 saturated. That's the term I would use.

7 Q. Are you aware that Addendum MP-3 Brook cited to
8 data available from the Big Horn Coal permit that says
9 that Big Horn Coal did extensive exploratory drilling and
10 confirmed no aquifers?

11 A. That depends on how you define an aquifer.
12 Yeah, they determined that, but doesn't mean I agree with
13 it.

14 Q. Are you -- are you also aware that the Brook
15 permit application indicates that baseline studies showed
16 the area above the Masters coal seam is not a robust
17 water-bearing interval?

18 A. I have no idea what the term "robust" means, so
19 I can't really answer that question.

20 Q. Mr. Wireman, I'm just asking, are you aware that
21 the permit document states that baseline studies indicate
22 the area above Masters coal seam is not a robust --

23 A. If it's in the permit application, I probably
24 read that, yes.

25 Q. Mr. Wireman, are you aware that in Appendix D6

1 there are logs and resistance data that show the
2 overburden is dry based upon drilling that Brook
3 conducted?

4 A. At the locations of those tests.

5 Q. All right. And you're also aware, I would
6 assume, from reading permit application, that one of the
7 reasons that drilling took place on the eastern side of
8 the permit application was because DEQ and Brook had
9 collaborated to locate those wells based upon available
10 data showing the dryness of the western portion of the
11 permit area?

12 A. I'm aware that they collaborated. I have no
13 idea what their criteria were for locating those wells.

14 Q. Let's go to DEQ Exhibit 6-025. We're going to
15 blow up a paragraph here for you, Mr. Wireman. Can you
16 see that okay?

17 A. Yep. I can.

18 Q. This states that "In a July 15, 2013 meeting
19 between RAMACO and WDEQ/LQD to discuss acquisition of
20 baseline at RAMACO's Brook Mine property, it was the
21 consensus of the group, based on recent and historical
22 drilling, that areas of the RAMACO Brook Mine property
23 contained -- contain limited groundwater resources and
24 could be dry." Did I read that correctly?

25 A. You did.

1 Q. All right.

2 A. I have no idea what it means, but you read it
3 correctly.

4 Q. Sure. You mentioned that you considered the
5 area to be variably saturated is the word -- phrase you
6 used?

7 A. The coal -- the coals that are outcropping and
8 close to the surface. The deeper coals are completely
9 saturated.

10 Q. Let's go to DEQ Exhibit 6-265. Mr. Wireman, I'd
11 like to direct your attention to the middle of the first
12 paragraph. There's a sentence that starts "after." Do
13 you see that?

14 A. Yes, I do.

15 Q. And that sentence states, "After discussion with
16 WDEQ and analysis of historic well data surrounding the
17 permit area, a cluster of wells in the eastern portion of
18 permit was chosen because the coal seam aquifers in the
19 western portion of the permit area were dry, or exhibited
20 very little saturation." Did I read that correctly?

21 A. You did.

22 Q. All right. There was some discussion on direct
23 about the lack of data on rainfall and major storm events,
24 and that's also an opinion you reach in your expert
25 report, right?

1 A. Yes.

2 Q. Are you aware that in the latest estimate done,
3 the State of Wyoming has reduced the predicted number of
4 probable maximum floods in the years to come?

5 A. The State of Wyoming?

6 MS. ANDERSON: Objection. I don't know
7 where this is in evidence. I don't know if Mr. Wireman's
8 ever seen this. I don't know where this is coming from.

9 MR. POPE: Dr. Bagley, this is another
10 question about whether he is aware. His opinions were all
11 based upon Brook having a limited set of data. I'm
12 inquiring into the data that he looked at to reach that
13 conclusion.

14 CHAIRMAN BAGLEY: Could you ask the
15 question --

16 MS. ANDERSON: We can always get --

17 CHAIRMAN BAGLEY: -- again?

18 MS. ANDERSON: -- the source of the data.

19 CHAIRMAN BAGLEY: I just want to hear the
20 question again.

21 MR. POPE: Absolutely. The question is,
22 are you aware that in the State of Wyoming's latest
23 estimate, it has reduced the predicted number of probable
24 maximum floods.

25 MS. ANDERSON: And I'm not clear what the

1 source of this information is. And I don't know if
2 Mr. Wireman can answer the question without a little bit
3 more --

4 A. I can answer that question. I have no idea
5 about Wyoming efforts to predict floods. My comments
6 weren't based on that.

7 MR. POPE: That frankly answered my
8 question, as to whether he is aware of that information or
9 not.

10 CHAIRMAN BAGLEY: Yeah. Let me decide
11 whether you should answer the question or not next time.

12 THE WITNESS: Okay. I'm sorry.

13 CHAIRMAN BAGLEY: Thank you. Go ahead,
14 Mr. Pope.

15 MR. POPE: All right.

16 Q. (BY MR. POPE) Now, in your expert report in
17 describing some opinions about storms and flooding, you
18 didn't rely, at least in drafting the report, on a statute
19 or regulation for including a more detailed discussion of
20 large storm events, right?

21 A. No, I did not.

22 Q. Let's talk about the conceptual model. You have
23 some opinions about the lack of a conceptual model for the
24 Brook Mine plan. You read the mine -- you read the mine
25 plan. So you're aware that Section 2.0 of Addendum MP-3

1 contains the conceptual model that Brook used.

2 A. No. It's entitled Conceptual Model. I disagree
3 that it contains the conceptual model.

4 Q. That clarifies that.

5 There was some discussion on direct about you
6 questioning whether the Tongue River is a losing stream.
7 I'd like to go to DEQ Exhibit 12-201.

8 Mr. Wireman, I'd like to direct your attention,
9 I think it's the third sentence that begins with
10 "Conceptually." Do you see that?

11 A. Yes.

12 Q. And I apologize. I'm going to read some more to
13 you. Just kind of how you have to do it on cross. It
14 says, "Conceptually, evapotranspiration from the
15 vegetation along the Tongue River would indicate that
16 throughout the model domain the Tongue River is a losing
17 stream. Throughout most of the model domain where the
18 Tongue River is present, there are overburden strata with
19 low permeability between the Tongue River alluvium and the
20 coal seams which hydrologically isolate the Tongue River
21 from both the Masters and the Carney coal seams." Did I
22 read that correctly?

23 A. You did.

24 Q. In your expert report -- and I apologize, I'm
25 sort of circling back to something we covered a little bit

1 ago -- you stated that you could not find wells located in
2 specific aquifers or the wells that will be affected by
3 drawdown. My question here is, are you aware that
4 Figure 4.9-1 and Figure 4.9.11 in the mine plan contain
5 that information?

6 A. Contain what information? I did not understand
7 your question. The first part of your question.

8 Q. Let me re-ask it. And if it helps, I'm looking
9 at page 8 of your expert report. At first full paragraph
10 on the page, you pose several questions. Where are the
11 locations of wells completed within specific aquifers,
12 where is the existing domestic well with predicted
13 drawdown of 25.8 feet, where are the additional targets on
14 the -- along the Tongue River alluvium. The data is
15 insufficient to draw appropriate conclusions."

16 My question is, based upon that opinion, are you
17 aware that Figures 4.9-1 and 4.9.11 within the mine plan
18 contain the data you are asking about?

19 A. I have no idea if it contains the data I'm
20 asking for.

21 Q. Okay.

22 A. My sense is it doesn't or I would have known.

23 Q. All right. You -- you discussed on direct that
24 there is inadequate monitoring of the underburden,
25 overburden and interburden in a permit application. I'd

1 like to go to -- actually, in the effort to avoid reading
2 to you, and since we're almost near 5:00, I'll ask the
3 question this way. Are you aware that in D6, within the
4 mine permit application, it discusses that no wells were
5 completed in the overburden or interburden because
6 drilling operations did not show any water in those
7 strata?

8 A. I'm aware of that statement, yes. Doesn't
9 change my opinion.

10 Q. Just a few more questions for you, Mr. Wireman.
11 You stated on direct that you believe that two
12 to three years minimum is required to gather sufficient
13 data. You do not have a specific Wyoming statute or
14 regulation that you contend requires two to three years of
15 data collection?

16 A. I didn't suggest that.

17 MR. POPE: Thank you, Mr. Wireman. I have
18 no more questions.

19 THE WITNESS: Thank you.

20 CHAIRMAN BAGLEY: Does council have any
21 questions?

22 COUNCIL MEMBER AGOPIAN: No.

23 CHAIRMAN BAGLEY: I have no questions
24 either.

25 About how long do you -- would you like for

1 redirect? It's 2 minutes to 5:00, but --

2 MS. ANDERSON: Yeah. More than
3 five minutes, so...

4 CHAIRMAN BAGLEY: More than five minutes?

5 MS. ANDERSON: Yeah. So if we need to be
6 out of here by 5:00...

7 CHAIRMAN BAGLEY: So we'll --

8 MR. RUBY: I've been given permission to
9 stay after 5:00 if you want to stay. The only thing that
10 has to happen is when people leave, you have to go out this
11 side door here. You cannot go out the front door. It has
12 to be this side door right here.

13 THE WITNESS: I understand.

14 CHAIRMAN BAGLEY: About how long, do you
15 think?

16 MS. ANDERSON: I don't know. We'll see.
17 Probably 15, 20 minutes, maybe.

18 CHAIRMAN BAGLEY: All right.

19 MS. ANDERSON: Maybe half an hour. I don't
20 know.

21 CHAIRMAN BAGLEY: Let's go ahead and finish
22 this up. Go ahead and do your redirect, Ms. Anderson.

23 MR. POPE: Dr. Bagley, sorry. I have a
24 question. I know Ms. Anderson indicated that Ms. Spencer
25 was going to testify some more. I don't know if she's

1 still on the line? And also is that still the plan?

2 MS. ANDERSON: She's going to be here at
3 8:30 tomorrow morning.

4 MR. POPE: I don't know if that impacts the
5 plan you talked about.

6 CHAIRMAN BAGLEY: Oh. Yeah. Good
7 question. Let's go ahead and finish redirect on
8 Mr. Wireman.

9 THE REPORTER: Can you remove your
10 computer from that height?

11 MS. ANDERSON: Oh, yeah. Sure. Yes.

12 REDIRECT EXAMINATION

13 Q. (BY MS. ANDERSON) Okay. Mr. Wireman, I'll
14 start with a question you were asked about the definition
15 of material damage. And just in the interest of not
16 having you purger yourself, do you remember some
17 conversations we've had about long-term impairment and
18 significant damage and --

19 A. Yes.

20 Q. -- things like that in the regulations?

21 A. Yes, I do. And that's -- you know, that's -- to
22 some degree it's broad language. And so what constitutes
23 material damage on one part might not on another. So it's
24 a little bit subjective. But long-term damage to a
25 hydrologic system is a different issue because it's

1 permanent, and it does result in an impact that sometimes
2 is significant and sometimes is not --

3 Q. Okay.

4 A. -- in terms of human use.

5 Q. Okay. So you're generally familiar with
6 material damage and how that applies to both the
7 hydrologic system and then separately to the alluvial
8 valley floors?

9 A. I'm very familiar with the concept in the term.
10 It's used in environmental statutes and laws around the
11 country, and it's just -- it's undue damage. It's damage
12 that people don't want and have a difficult time dealing
13 with.

14 Q. Okay. And so based on that, do you believe in
15 your opinion, that there is a lack of data in the permit
16 application to prevent material damage outside of the
17 permit area?

18 A. I don't think there's enough data and assessment
19 in this application to make that determination.

20 Q. Okay. All right. You were asked a lot about
21 the qualifications of Dr. Kuchanur. Now that you've
22 reviewed his CV and you know a little bit more about him,
23 does that change any of your opinions or concerns about
24 the adequacy of this permit application?

25 A. No.

1 Q. Okay. You were asked a couple of questions
2 about whether you had ever worked as a consultant to
3 prepare a permit application for a coal mine in Wyoming.
4 Do you remember those questions?

5 A. Yes. Yes.

6 Q. So for this review that you did for us, were you
7 actually preparing a permit application?

8 A. No.

9 Q. What were you doing?

10 A. I was reviewing a permit application. And I've
11 reviewed permit applications in the past. I've never
12 prepared a permit application. And I've never reviewed a
13 coal mine permit application in Wyoming.

14 Q. Okay. So there's a little distinction between
15 whether you prepared it or reviewed it and --

16 A. As I said, my career at EPA, we did not permit
17 coal mines, but we reviewed a lot of coal mine permits,
18 so -- for adequacy.

19 Q. Okay. You were asked some questions about, you
20 know, this issue kept coming up about regulatory
21 requirements versus industry standards. Do you remember
22 those questions?

23 A. Yes.

24 Q. So based on your experience as a scientist who
25 works for a regulator, do you have anything to say about

1 how industry standards inform regulatory requirements?

2 A. Yes. I appreciate the question. As we went
3 through some of this last material that Mr. Pope was
4 asking about the statements in the permit that I simply
5 flat-out just disagree with, you know, the base there -- a
6 statement that all the western portion of this is dry
7 based on one or two drill holes, I just don't think is
8 adequate. There are -- there's water in old drill holes
9 way to the west. If you work at the potentiometric
10 surface maps, one of the wells they used is way to the
11 west and it comes all the way across. So there's clearly
12 water in those coals across the entire permit area. As to
13 how much water, it's really difficult to say.

14 The other thing you notice, some of their
15 statements were saying in July of this year it was dry.
16 Well, that could be true. But what about April of this
17 year, was it dry? You cannot make an assumption based on
18 one piece of data from one time from one place that that
19 represents this entire permit area. It does not. And
20 that's really, in my view, stretching it, to make those
21 kind of conclusions based on this very limited amount of
22 data.

23 Secondly, you know, if you read these statutes,
24 you know, they're very clear in my mind about what you
25 need to do, the types of data that you have to prevent --

1 or present enough data and assessment to minimize -- to be
2 able to minimize perturbation -- or perturbations to the
3 hydrologic balance. You have to do that. It says that in
4 the statute. You have to have a mine plan designed to
5 prevent material damage. I just didn't see any of that in
6 this permit where they can say we assessed it. We've done
7 this. Here's what's going on. Here's how we prevent
8 material damage. That is not discussed in this permit
9 application.

10 So it's a -- in my opinion, you cannot make
11 conclusions over an area this large based on a couple of
12 pieces of data from one location and assumptions about the
13 rest of the area.

14 Q. Okay. You got a lot of questions about permit
15 application says this, permit application says that, and
16 permit application maybe proved some things. Do you have
17 an opinion whether the permit application gives a lot of
18 proof or does it draw a lot of assumptions?

19 A. You know, my expertise and my testimony is
20 related to what -- from a scientific point of view, what
21 constitutes an adequate characterization and assessment of
22 the hydrologic system in a given watershed, a given
23 aquifer, a given place. That's what I am good at. That's
24 what I have been doing. I've tried to relate that to the
25 statutes in Wyoming, which are fairly broad, but which say

1 you need to generate enough data and understanding to make
2 these decisions. So there's a connection there. And I
3 just don't believe that's been done, that they have enough
4 data and understanding to say they have satisfied
5 35-11-406(b) or 406(n). They just don't have enough data
6 to be able to say this will prevent material damage.
7 Can't say that. And I don't think it is said anywhere in
8 the permit application, in all honesty. If it is, it will
9 have to be pointed out.

10 So that's really what -- there is a connection
11 between these two. And the statute assumes an adequate
12 characterization. But an adequate characterization is not
13 guaranteed by the statute. They're different. And so
14 that's where the professional scientist has to come in and
15 say given what I know, given this situation, here's what
16 adequacy is from a characterization point of view, and
17 then say okay, have we met what the statute says.

18 Q. And then draw conclusions based on that?

19 A. (Witness nods head.)

20 Q. Okay. You were asked a little bit about the
21 Tongue River ditch.

22 A. Yeah.

23 Q. And whether the ditch recharges --

24 A. The river.

25 Q. -- the river?

1 A. I don't know what that means. Is the ditch
2 water -- it's taken out of the Tongue River. You are
3 meaning then it goes right back into the Tongue River and
4 recharges the river? I don't really understand a ditch
5 that takes water out up here and then puts back in the
6 river down here. I would assume the water's used for
7 irrigation.

8 Q. Right. So what's your understanding of what a
9 ditch does?

10 A. Probably what's happening is there's leakage out
11 of the ditch. It happens in almost all ditches throughout
12 the West, where diversion ditches transport water to the
13 head of the field. There's some leakage out of the bottom
14 of those ditches, and that leakage becomes what we refer
15 to as return flow. It gets in the subsurface. It moves
16 typically to a stream or something nearby. I have no
17 doubt the ditch does that.

18 But remember, the ditch doesn't run year-round.
19 You know, ditches out here don't run year-round. They're
20 used for agriculture. So probably most of the months
21 during the year the ditch isn't running. I mean, I don't
22 know that for sure. I don't know the ditch. But if it's
23 an agricultural ditch, it's not going to run year-round.

24 So you have a finite amount of recharge into
25 this alluvium from this ditch. That is not sufficient in

1 and of itself, in my view, to sustain the water levels
2 needed in the alluvium.

3 Q. Okay.

4 A. But it's a contributor.

5 Q. And I think there was some questions about the
6 river specifically, but -- I mean, do you want to draw a
7 distinction between the river and Tongue River alluvium?

8 A. Absolutely you have to draw that distinction,
9 yeah.

10 Q. Okay. You also were asked some questions, and I
11 hope I get this right because I was taking notes, but I
12 might have missed it, about the aquifer above the Masters
13 coal seam, and there was a phrase about robust.

14 A. Yeah, you know, that's -- let me explain that.
15 There's a definition of an aquifer that is absolutely
16 standard and used all across the United States. And it --
17 it's actually quite simple. It just says geologic
18 formation, part of a formation or group of formations,
19 that will yield usable amounts of water to a well. That's
20 it.

21 You know, I live in a place in Colorado where my
22 well makes 7 gallons a minute. And nobody east of the
23 Mississippi would spend a nickel on a well that gets
24 7 gallons a minute. But in my world that's huge. It's
25 absolutely a huge amount of water. So usable just depends

1 on a lot of things. For a domestic well, 15 gallons a
2 minute is pretty good. For irrigation you needs more.

3 So the point is the Fort Union is an aquifer
4 throughout most of its occurrence. It just doesn't yield
5 a lot of water in some places, many places. But in other
6 places it does yield a lot of water. So I don't think
7 that's a fair term. I don't know what's meant by robust.
8 If there's some quantitative measure there. But clearly
9 with 357 wells in this formation, it's an aquifer.

10 Q. So, in your opinion, there's not generally a
11 robust qualifier to definition of aquifer?

12 A. I've never heard the term or seen the term in a
13 textbook. I'm not sure what it means.

14 Q. Okay. Can I get back to using my computer -- or
15 this computer that my stuff is on?

16 CHAIRMAN BAGLEY: Yeah. Looks like
17 we're --

18 MR. RUBY: He's getting it.

19 CHAIRMAN BAGLEY: He's getting the cable.

20 Okay. There you go.

21 MS. ANDERSON: Great. Thank you.

22 If I could change the number in that box, it
23 would be easier, but I tried it earlier and I couldn't,
24 so...

25 Q. (BY MS. ANDERSON) I'm pulling up DEQ Exhibit

1 12, page 201.

2 And, Mr. Wireman, you were asked some questions
3 about -- about these sentences here about
4 evapotranspiration and -- do you remember those questions?

5 A. I do.

6 Q. Do you have anything to say in addition to what
7 you already testified to?

8 A. I'm confused about how evaporation from the
9 vegetation indicates that Tongue River's a losing stream.
10 It indicates that the plants have access to water, but it
11 doesn't automatically indicate that that water comes from
12 the stream. It can come from groundwater. But clearly
13 you know, evaporation's a real thing. You can measure it.
14 But I don't really agree or understand how conceptually
15 the fact that there's evapotranspiration from the
16 vegetation indicates the Tongue River's a losing river. I
17 don't get that connection.

18 Q. Okay. And so it's your opinion that the permit
19 application is -- if this is a conclusion that's drawn,
20 it's lacking in the data, this is a foregone conclusion?

21 A. There is no data in this permit application --
22 it's easy to determine if the stream is losing or gaining.
23 It's not a difficult thing to do. You can measure flow
24 here and measure it here and if you lose flow, it's
25 losing. If you gain flow, it's gaining. That wasn't

1 done, to my knowledge. There's only one flow gauge on the
2 Tongue in this area, and one gauge won't do it.

3 There are other ways to do it, with tracing and
4 other more complicated ways, but you can clearly do it.
5 It's just not that difficult. So it should have been
6 determined, because it's a -- it's an important factor
7 with respect to the alluvial deposits and the AVFs as to
8 what the Tongue River's really doing, its hydraulic
9 connection with the alluvium. And it's just not
10 determined enough to make many conclusions.

11 Q. Okay. To further the reading exercise here,
12 would you agree that this sentence also has the word
13 "conceptually" in it, and based on your experience, what
14 does that generally mean?

15 A. I think -- and, you know, I didn't write this.
16 So let's just state that up front. But if I had to sort
17 of decipher this, I would say that they -- you need to
18 have some basis for modeling the river as a losing river
19 in the model. This is the basis for that. That would be
20 my guess at what this meant, but it's not.

21 Q. And is conceptually --

22 A. There's no data.

23 Q. Yeah. And is conceptually generally a qualifier
24 to mining?

25 A. Yeah. I could say, you know, conceptually the

1 evapotranspiration means there's water the plants are
2 getting to. That's true. But what does it mean? I mean,
3 it doesn't help in terms of furthering our understanding
4 about the AVFs and the alluvial process. Doesn't happen
5 with that.

6 Q. Okay. Mr. Wireman, you were asked some
7 questions about weather data and precipitation
8 specifically. And recognizing you're not a climatologist,
9 do you have any further response to the question asked
10 about --

11 A. Yeah.

12 Q. -- how recent data matters here?

13 A. The reason I brought that up --

14 MR. POPE: Objection. There was no
15 question about recent data. There was a question about
16 predict the estimates of probable maximum floods.

17 MS. ANDERSON: Then that's fine.

18 Q. (BY MS. ANDERSON) Then let's talk about that.

19 A. And the reason that comment is in my report is,
20 first of all, there's no empirical recharge data here.
21 None.

22 Secondly, we know that a significant portion of
23 the recharge comes from precipitation. If you don't have
24 recharge data and you have to put in the model some number
25 for recharge, it's pretty standard to use precip. But

1 there's no precip after 1973. No precip data. Since
2 1973, all across this country, we know that there are more
3 intense storms. They're more frequent. It happens. And
4 so that combined with what I read in the permit
5 application, which says that the water control structures
6 here are designed for 24-hour, 10-year storm, I believe is
7 what it said. And in my opinion, that's just not enough.
8 I think there's high likelihood you'll get bigger storms
9 than that. A very high likelihood. So it should be
10 designed for something bigger. That was the whole reason
11 behind that.

12 And you can't really -- you know, without the
13 data on recharge, without the data on precip, without the
14 data on how many storms of certain magnitudes that have
15 happened in the last 10 years, you don't know. You don't
16 know what to do, you know? So that data's critical and
17 it's not there.

18 Q. Okay. You also have in your report a little bit
19 about subsidence and damage that can be resulting to the
20 hydrologic balance, alluvial valley floors. Could you
21 tell us a little bit more about that?

22 A. Yeah, when you -- when you construct these
23 panels, these box cuts or trench cuts of X feet long, and
24 you cut down through the coal, you mine the coal. There's
25 two things that happen there in terms of the hydrologic

1 balance.

2 As I said, you create these giant voids with
3 automatic miner. And those are there. If they collapse
4 in the future, then the groundwater flow pattern in the
5 coals is altered. The recharge still happens up in the
6 outcrop areas. It flows down these coals now and comes to
7 this jumbled-up mess of low permeability material and it
8 will not reach the alluvium in the same place or the same
9 time it did before. That could have an effect on those
10 AVFs. That's one thing.

11 Other thing is just if they fill with water and
12 become storage, then what? Where does it go? Can't fill
13 up -- can only fill up so much. So my point is that
14 should have been addressed, because mining, particularly
15 when those panels are parallel to the river, will, in
16 fact, cut off recharge. And they can put it back. I've
17 seen this happen a number of times over the years. The
18 water's collected, just put back in down -- downhill or
19 downgradient of the disturbance. We've required many
20 times.

21 But I didn't see any of that kind of discussion
22 here. So that gets partly to what I'm saying can't be
23 fixed. You can't go into those void spaces filled with
24 low material, jumbled-up stuff and take it out and replace
25 it. It can't be done. Perhaps could be done, but

1 certainly won't be done. So those are some of the things
2 that are unfixable.

3 The CBM is another example. Eighty to a hundred
4 feet water level declines. The model modeled that as
5 boundary but because it's over there. But has it
6 recovered? How much has it recovered? It hasn't
7 recovered very much. That could very well be a permanent
8 thing, or a -- such a long-term thing that it becomes not
9 fixable. And it wasn't fixed. I mean, look at what CBM
10 did. Has any of that been fixed? Has any of those water
11 levels come back? No.

12 You have to really be careful with hydrologics.
13 It's not as straightforward as engineering, where you
14 build something, you can fix something. But we didn't
15 build the groundwater flow system, so it's little hard to
16 fix sometimes.

17 Q. Okay. Is there anything else you'd like to tell
18 the council today?

19 A. I would just encourage the council to consider
20 very strongly completing the task of the characterization.
21 Just getting it finished and getting a better hydrologic
22 characterization on the record for the public, for
23 everybody to see, and then that just brings a lot more
24 comfort, in my mind, to -- to assuring everybody that
25 there will be minimal impacts from this, so...

1 MS. ANDERSON: Okay. Thank you, Dr. -- or
2 Mr. Wireman. I just upgraded you. That's all I have for
3 you today. Thank you.

4 CHAIRMAN BAGLEY: Thank you, Mr. Wireman.

5 THE WITNESS: Yep.

6 CHAIRMAN BAGLEY: And we are recessed until
7 8:30 tomorrow morning.

8 (Hearing proceeds beings recessed

9 5:17 p.m., June 7, 2017.)

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C E R T I F I C A T E

I, KATHY J. KENDRICK, a Registered Professional
Reporter, do hereby certify that I reported by machine
shorthand the foregoing proceedings contained herein,
constituting a full, true and correct transcript.

Dated this 30th day of June, 2017.


KATHY J. KENDRICK
Registered Professional Reporter



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BEFORE THE ENVIRONMENTAL QUALITY COUNCIL

STATE OF WYOMING

IN RE BROOK MINE APPLICATION Docket No. 17-4802

TRANSCRIPT OF HEARING PROCEEDINGS

VOLUME VII

PURSUANT TO NOTICE duly given to all parties
in interest, this matter reconvened for hearing on the
8th day of June, 2017, at the approximate hour of
8:30 a.m., at the Wyoming Game & Fish, Elk Room, 5500
Bishop Boulevard, Cheyenne, Wyoming, before the Wyoming
Environmental Quality Council, with Chairman David Bagley,
presiding, and Council Member Nick Agopian in attendance.
Mr. Ryan Schelhaas, Wyoming Attorney General's
Office, Attorney for the Council; Mr. Jim Ruby, Executive
Director to the Council; Mr. Joe Girardin, Business Office
Coordinator, were also in attendance.

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A P P E A R A N C E S

For Brook Mine:	MR. JEFFREY S. POPE MR. THOMAS SANSONETTI Attorneys at Law HOLLAND & HART, LLP 2515 Warren Avenue Suite 450 Cheyenne, Wyoming 82001-3117
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For the DEQ:	MR. ANDREW J. KUHLMANN Senior Assistant Attorney General MR. JAMES M. LAROCK Assistant Wyoming Attorney General WYOMING ATTORNEY GENERAL'S OFFICE 2424 Pioneer Avenue Cheyenne, Wyoming 82002

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1 P R O C E E D I N G S

2 (Hearing proceedings reconvened

3 8:30 a.m., June 8, 2017.)

4 CHAIRMAN BAGLEY: You have choice of
5 hearing entertainment today. We could all be listening to
6 former FBI director getting grilled by the Senate, but I'm
7 glad you're here instead.

8 So good morning. It's 8:30 a.m., June 8, 2017.
9 I am Dr. David Bagley, the hearing officer in Docket
10 17-4802 in regards to Brook Mine, LLC.

11 Present today from the council are Nick Agopian
12 and myself. Council Members Fairservis and Degenfelder
13 have recused themselves.

14 Parties present today are -- and, again, I'll
15 allow you to introduce yourselves. We'll start with Brook
16 Mine, LLC.

17 MR. POPE: Thank you, Dr. Bagley.

18 Jeff Pope, Isaac Sutphin, Tom Sansonetti,
19 and Carri Svec from Holland & Hart.

20 CHAIRMAN BAGLEY: Thank you.

21 DEQ.

22 MR. KUHLMANN: Andrew Kuhlmann and
23 James LaRock, Wyoming Attorney General's Office,
24 representing the Wyoming Department of Environmental
25 Quality, Land Quality Division.

1 CHAIRMAN BAGLEY: Thank you.

2 Powder River Basin Resource Council.

3 MS. ANDERSON: Good morning. Shannon

4 Anderson on behalf of Powder River Basin Resource Council.

5 CHAIRMAN BAGLEY: Thank you.

6 The Fishers.

7 MR. GILBERTZ: Jay Gilbertz from Yonkee &

8 Toner for Mary and David Fisher.

9 CHAIRMAN BAGLEY: Thank you.

10 Big Horn Coal.

11 MS. BOOMGAARDEN: Good morning.

12 Lynn Boomgaarden, Crowley Fleck, on behalf of Big Horn

13 Coal.

14 And with me today again is Mr. Jordan Sweeney.

15 CHAIRMAN BAGLEY: Thank you.

16 Also present for the council, Jim Ruby, Executive

17 Officer; and Joe Girardin, Council Business Coordinator;

18 and Ryan Schelhaas from the Attorney General's Office.

19 This hearing is being held in the Elk Room, Game

20 & Fish Commission, 5400 Bishop Boulevard, Cheyenne,

21 Wyoming. There is a court reporter present.

22 So today we will continue from where we finished

23 last night. I believe, Ms. Anderson, you have a witness to

24 recall.

25 MS. ANDERSON: I do. And, Dr. Bagley,

1 before we do that, I just wanted to note for the record
2 that I have placed over with our exhibits our demonstrative
3 Exhibit 93, which is Dr. Marino's PowerPoint with -- which
4 was our already-filed exhibit with some additional slides
5 he prepared for demonstrative purposes; Exhibit Number 94D,
6 which was document Dr. Marino prepared; and then
7 Exhibit 95D, which is the PowerPoint Mr. Wireman went
8 through in his presentation.

9 CHAIRMAN BAGLEY: All right. Thank you.

10 MS. ANDERSON: And for Ms. Spencer, do I
11 need to go there?

12 MR. GIRARDIN: Yes.

13 MS. ANDERSON: Okay.

14 CHAIRMAN BAGLEY: Ms. Spencer, can you hear
15 me?

16 THE WITNESS: Yes, I can.

17 CHAIRMAN BAGLEY: This is Dave Bagley.

18 Just to remind you, you're still under oath.

19 THE WITNESS: Okay. I'm here.

20 MS. ANDERSON: Okay. Sue, can you hear me?

21 THE WITNESS: Yes.

22 MS. ANDERSON: Okay. Thank you. I just
23 have a couple of additional questions for you.

24

25

1 SUE ANN SPENCER,
2 called as a witness on behalf of the PRBRC, having been
3 previously sworn, testified further as follows:

4 REDIRECT EXAMINATION

5 Q. (BY MS. ANDERSON) Ms. Spencer, after hearing
6 Mr. Wireman's testimony yesterday, would you still agree
7 that his opinions and findings meet the standards of a
8 Wyoming Professional Geologist?

9 A. Yes, I do.

10 Q. And do you have any concerns about lending your
11 Wyoming certification to Mr. Wireman's findings and
12 opinions in his report and testimony?

13 A. No, I do not.

14 MS. ANDERSON: Okay. Thank you. That is
15 all I have for you.

16 THE WITNESS: Okay. Thank you.

17 CHAIRMAN BAGLEY: Time for
18 cross-examinations.

19 Mr. Gilbertz.

20 MR. GILBERTZ: Nothing from me. Thank you.

21 CHAIRMAN BAGLEY: Ms. Boomgaarden.

22 MS. BOOMGAARDEN: No questions. Thank you.

23 CHAIRMAN BAGLEY: Mr. Kuhlmann.

24 MR. KUHLMANN: Thank you, Mr. Hearing
25 Officer. I just have one question.

1 MR. GIRARDIN: Come over here.

2 MR. KUHLMANN: Oh, that's right.

3 CROSS-EXAMINATION

4 Q. (BY MR. KUHLMANN) Good morning, Ms. Spencer.

5 A. Good morning.

6 Q. I just have one question for you. Were you able
7 to listen to all of Mr. Wireman's testimony yesterday?

8 A. Yes, I was.

9 Q. Okay.

10 A. I was up at 4:00 this morning watching it on
11 video.

12 Q. Okay. All right. Thank you very much.

13 A. You're welcome.

14 MR. KUHLMANN: That was my question.

15 CHAIRMAN BAGLEY: Thank you, Mr. Kuhlmann.

16 Mr. Pope.

17 MR. POPE: No questions.

18 CHAIRMAN BAGLEY: No questions.

19 Any questions from council?

20 COUNCIL MEMBER AGOPIAN: Nope.

21 CHAIRMAN BAGLEY: I have none either.

22 Any redirect, Ms. Anderson?

23 MS. ANDERSON: No.

24 CHAIRMAN BAGLEY: All right. Well, thank
25 you very much, Ms. Spencer. And I hope you enjoyed your

1 morning video. Wow.

2 THE WITNESS: I did. It was fascinating.

3 CHAIRMAN BAGLEY: So I believe you are free
4 to now go about your business for the rest of the day.

5 THE WITNESS: Okay. Thank you.

6 CHAIRMAN BAGLEY: Thank you.

7 Do you have any additional witnesses?

8 MS. ANDERSON: I do not. Thank you.

9 CHAIRMAN BAGLEY: All right. Thank you.

10 Mr. Pope, do you have any rebuttal evidence you'd
11 like to present?

12 MR. POPE: We do. We'd call Dr. Muthu
13 Kuchanur to the stand.

14 CHAIRMAN BAGLEY: Thank you.

15 THE REPORTER: Should I re-swear him since
16 it's been a while?

17 CHAIRMAN BAGLEY: Let's go ahead and
18 re-swear him, yeah.

19 (Witness sworn.)

20 MUTHU KUCHANUR, PhD,
21 called for examination by Brook Mine, being first duly
22 sworn, testified as follows:

23 DIRECT EXAMINATION

24 Q. (BY MR. POPE) Good morning, Dr. Kuchanur. How
25 are you today?

1 A. Good morning.

2 Q. I have three topics I'd like to discuss with you
3 this morning. The first is the Big Horn Coal groundwater
4 restoration demonstration. Were you present when
5 Mr. Gerlach discussed the groundwater restoration
6 demonstration in Sheridan?

7 A. Yes, I was.

8 Q. Did you use the groundwater restoration
9 demonstration in your review of the Brook permit
10 application?

11 A. Yes.

12 Q. How did you use that demonstration?

13 A. So I'd like to step back a little bit and
14 explain to the council what this document is and how I
15 used this document -- document to reconcile the pieces of
16 information that I used versus the ones I did not think
17 were applicable in this specific instance.

18 So I think Big Horn has done some good
19 groundwater restoration at this site and have
20 demonstrated, through the Big Horn Exhibit Number 15, the
21 groundwater restoration document.

22 So one thing I'd like to highlight to the
23 council is the objective of this document is different
24 than the objectives of the Brook Mine MODFLOW model. So
25 the objective of the Brook Mine -- or the Big Horn Mine

1 groundwater restoration document is to demonstrate to the
2 LQD, the Land Quality Division, that the Big Horn Mine has
3 met all the commitments and restored the groundwater to
4 pre-mining conditions. So that's the primary objective of
5 that document.

6 Brook Mine's objective is -- so in Big Horn's
7 case, they are at the tail end of the whole process, the
8 reclamation and restoration process. They have collected
9 about like -- more than 23 years of information of water
10 levels and water quality of those wells. And they are at
11 the tail end of the process, demonstrating to LQD, as part
12 of the bond release process, that the water levels they
13 collected in the past is demonstrating to LQD that the
14 current conditions meet the statutory requirement that the
15 groundwater at their site is capable of meeting the
16 approved post-mining land use, which is livestock in this
17 instance.

18 So that's -- that's the situation that they are
19 in. And if you look at Brook Mine, the position that they
20 are in is -- they are like looking at the future. They
21 have a good handle on like what is right now at the site,
22 but they're trying to predict future. So they are relying
23 on a model to get to the future. And Big Horn's relying
24 on hard evidence, the data that they have collected over
25 23 years to demonstrate to LQD everything has been

1 restored to -- that the groundwater has been restored to
2 pre-mining conditions.

3 So that's -- that's the primary difference in
4 objectives between these two documents. With that in
5 mind -- so I used -- I looked into this document and I
6 made some analyses and decided to use the results from
7 Big Horn Mine's GRD to mostly cross-check and verify what
8 the MODFLOW model has to say, rather than using the
9 parameters that the GRD has used as a supplement for the
10 hard evidence that they have in water wells.

11 So the requirement that LQD had in terms of bond
12 release is whether the mine -- the Big Horn Mine has met
13 or demonstrated that the water levels have recovered to
14 pre-mining conditions. The water quality, the groundwater
15 qualities suitable to meet the approved post-mining land
16 use.

17 So how did they do that? They had a set of
18 monitoring. They went there every quarter, collected the
19 information over 23 years and they plotted a hydrograph.
20 Hydrograph is nothing but the product water levels over
21 time. So they plotted this thing, the hydrograph, and the
22 hydrograph clearly demonstrated to LQD the groundwater
23 levels are back to -- back to where it was before mining.

24 So, in other words, it's a successful case of
25 groundwater restoration demonstration by a coal mine in

1 this area -- in this area -- in the general area of
2 interest, meeting satisfactorily the LQD requirements.

3 So in that sense -- so I used -- from that
4 perspective, I used the information that Big Horn had in
5 their groundwater restoration document to see, okay, this
6 is independent analysis that was collected by Big Horn in
7 2002. And Brook Mine comes in like 2015, '16 with this
8 MODFLOW model. So there are lines of evidence that
9 indicates -- indicate that these two information, you
10 know, are they contradicting each other, are they lining
11 up with each of theirs. So as a modeler, I think that's
12 more in line of evidence I'd like to look at.

13 So I think I'd like to point the council to
14 Big Horn Coal Exhibit Number 15, page number 10.

15 Q. Let's go ahead and we'll pull that up for you,
16 Dr. Kuchanur, as you discuss that.

17 Is there -- before you jump into your discussion
18 here, is there any particular portion of page 10, Big Horn
19 Exhibit 15, that you'd like to discuss with the council?

20 A. I'd like to point to paragraph number 2.

21 Q. We'll go ahead and blow that up for you.

22 A. The second full paragraph, please.

23 So I'd like to point specifically to statement
24 here that says, "The rates may also be biased somewhat
25 high by the assumption that the total recharge period for

1 Pits 1 and 2 was only 23.2 years prior to October 2001
2 when, in fact, the backfill of both pits was subject to
3 some constant recharge..." So I think this is the
4 statement that I relied on. It tells me that it took
5 23 years, if not more, for the backfill in the Big Horn
6 mine to saturate. It's not one year. It's not two years.
7 It took 23 years.

8 So that the -- that -- the number of years.
9 This is line of evidence to me that indicated that given
10 Brook Mine's proposing to mine for 12 to 13 years, that
11 that puts the 23 years in perspective how long it took for
12 the backfill to re-saturate.

13 Another thing that interested -- and I'd like to
14 look at this as like, okay, it's like 23 years, given that
15 it's right next to the Tongue River. They mined the
16 shallow coal using a different mining methodology. So I'm
17 also interested in like what's the rate that they predict.
18 So we know it took 23 years, so we are also interested in
19 the rates, the recharge rates that came in and filled the
20 backfill over time.

21 So I would like to highlight page number 41 of
22 the same exhibit to the council. That's a table from Big
23 Horn Mine.

24 Q. We'll go there. Is there anyplace on this
25 table, Dr. Kuchanur, that you would like to highlight?

1 A. I'd like to highlight several pieces of this
2 table. One thing is -- the first thing I'd like to
3 highlight is on the left -- on the right column that you
4 have. If you can zoom in that, please.

5 CHAIRMAN BAGLEY: I'm sorry. What page is
6 that, again?

7 MR. POPE: It's page 41.

8 CHAIRMAN BAGLEY: Thank you.

9 MR. POPE: It's Big Horn Coal 15-041.

10 CHAIRMAN BAGLEY: Thank you.

11 A. So here I'm there now. They show when they
12 started collecting the water levels, 1978. And the last
13 data point that they collected was in October of 2001.
14 This is where the 23.2 years is coming from.

15 So if we can get out of the zoom and over to the
16 other portion of the table that shows the calculations.
17 Maybe we'll zoom into the first section of the table.

18 So -- I mean, I want to clarify to the council
19 that this is not a model. It's a pretty straightforward
20 automatic calculation based on the information that they
21 collected over 23 years. So why they did this? They know
22 the area of the backfill already, and they know the depth
23 of the saturated thickness based on the water level
24 information they collected. So they calculated the volume
25 of groundwater that's available in this pit location.

1 Once you know the volume and if you know how long it took
2 to reach there, you can back-calculate the recharge rates.

3 So I think to make it more interesting, the
4 units that we see here is .04 acre-feet per day. So, I
5 mean, during my direct testimony and the mine predictions,
6 we are familiar with the number of CFS. So the mine --
7 these kinds of calculations for like the four distinct
8 areas within their backfill so that we can get an idea
9 of recharge rates on an average over the 23-year period of
10 these distinct areas within the backfill aquifer.

11 So, similarly, the other four years are shown in
12 this specific exhibit. So I did a calculation on the
13 average recharge rates, all four areas that's presented by
14 Big Horn. And I did the unit calculation so Dr. Bagley
15 doesn't need to pull his calculator out. So it turned out
16 to be like .06 CFS.

17 So I'd like to repeat the -- just to refresh our
18 memory from the hearing last week. So the lowest flow
19 that we have seen in the USGS gauging station at Monarch
20 over the past 10 years is 100 CFS. The mine -- the Brook
21 Mine predicted MODFLOW predictions on the maximum
22 intercepted -- detailed maximum intercepted groundwater is
23 .22 CFS.

24 And this independent calculation that was
25 collected by Big Horn in 2002 states it's .06 CFS. So

1 this is like -- this is like a good line of evidence that
2 tells me Big Horn, even with their own field study for
3 like 23 years, shows us a recharge rate that's pretty much
4 in line with -- if not conservative, it's in line with
5 estimates that's provided by Brook Mine.

6 I'd also like to highlight the differences in
7 mining methods and how deep these coal seams are. Brook
8 is planning on getting into a deeper coal seam. They're
9 like proposing minimal -- relatively minimal difference
10 compared to what Big Horn did in their mining. So even
11 though there are like differences in the approaches, this
12 tells me that the estimates, the model is a pretty simple
13 tool for us to rely on for our predictions.

14 So we know that .06 CFS is what came into the
15 Big Horn Mine's backfill over 23 years. So we are also
16 interested in like where does this water come from?
17 What's the source of this water? We know it's relatively
18 minimal, but don't want to discount -- just because it's
19 minimal, we don't want to know the source of this water.
20 So what does Big Horn have to say about the source of the
21 water?

22 So I'd like to point the council to like Exhibit
23 15, page 34.

24 Q. We'll pull that up for you right now.

25 Is there anyplace on Big Horn Exhibit 15-034

1 that you'd like to highlight for the council?

2 A. There is a specific sentence that starts with
3 "Streamflow depletion in Tongue River." I think it's
4 III.A.2 heading, line number 5, I believe.

5 So I'd like to start from the second sentence
6 here, "The coal seams, particularly the Monarch, are
7 projected to the principal source of groundwater recharge
8 to the backfill of Pits 1 through 3. Streamflow depletion
9 in Tongue River associated with the aquifer drawdown
10 described as minute, if any, and project to cease after
11 reclamation is complete and groundwater elevations in the
12 coals and spoils aquifers have recovered."

13 So I'd also like to go back to the cross-section
14 that Big Horn presented in their exhibits, Mr. Pope.

15 Q. Certainly. That's Big Horn Exhibit 14. We'll
16 pull that up for you.

17 A. So this exhibit shows the backfill area. And it
18 shows the Monarch coal seam. That's the line -- that's
19 the seam you are seeing above the yellow-shaded -- the
20 lines that you see here in this exhibit. So the Monarch
21 coal seam connects to the backfill aquifer. And then
22 there is the Tongue River. So there are potentially two
23 sources.

24 Thank you.

25 So that's the Monarch coal seam. And that's the

1 backfill. And that's the Tongue River. So this exhibit
2 shows that there are potentially two sources of recharge
3 to the backfill. The .06 CFS that we are talking about.

4 So what is the primary source and what Big Horn
5 has to say about it, and does that contradict -- does it
6 align with what Brook has to say? So they say in their
7 demonstration that the Monarch coal seam is the primary
8 source and the depletion in the Tongue River is minimal.
9 That's like one more line of evidence for me from one
10 other company that's pretty much lining up with what Brook
11 is saying.

12 And the last one that I'd like to highlight
13 is -- I know that the public and the council's interested
14 in like what's going to happen to the alluvial wells. So
15 right now we are just talking about the water in the
16 Tongue River, not the alluvium.

17 So I'd like to point to page number 31 of Big
18 Horn Coal Exhibit Number 15.

19 Q. We'll pull that up for you. Is there a place on
20 Big Horn Coal Exhibit 15-031 that you would like to
21 highlight?

22 A. I'd like to go to this slide that says, "The
23 southern boundary of Pit 3. So I'd like to highlight
24 the specific sentence for the council. "The southern
25 boundary of Pit 3 intercepted saturated alluvium of Tongue

1 River" --

2 THE REPORTER: You're going to have to slow
3 down.

4 THE WITNESS: Sorry.

5 A. -- "along a length of about 2,000 feet. This
6 caused the water table in the alluvium to decline over a
7 portion of the valley floor between the river and the mine
8 pit. Mining did not cause water table declines in
9 alluvial wells monitored by the mine other than those
10 proximate to the southern boundary of Pit 3."

11 So I think the specific sentence that I relied
12 on is, "Mining did not cause water table declines in
13 alluvial wells monitored by the mine other than those
14 proximate to the southern boundary of Pit 3." That's like
15 one of the line of evidence that shows even in the case
16 that they intercepted the alluvial aquifer.

17 So, I mean, they been there, dug there and
18 disturbed it. And that's not the case we are looking at
19 with Brook Mine. So even in the -- in the worst possible
20 case of a mine mining the alluvial floor, alluvial
21 aquifer, the alluvial sediments, their observation and
22 data indicated to them that aquifer -- that drawdowns in
23 the alluvial aquifer is not extensive.

24 So these are like multiple lines of evidence
25 that tells me that the predictions from Brook Mine, this

1 is lining up with what Big Horn did 15 years ago at their
2 site based on data that they collected at the site. Not
3 any modeling. It's data. So the data that was collected
4 from Big Horn lines up with the model that Brook Mine's
5 proposing, the model that Brook Mine's conducted for the
6 proposed mine at the site.

7 So this -- I mean, I'm -- these lines of
8 evidence tells me that -- increases my confidence in the
9 model --

10 THE REPORTER: Increases your confidence
11 in?

12 THE WITNESS: In the model predictions.

13 A. And so I think -- I mean, this is the piece that
14 I thought this was pretty useful for me to like check
15 against what the groundwater model said. And then there
16 is the second piece that Mr. Gerlach testified to that --
17 the information that we should be potentially -- Brook
18 Mine should have considered into the model. And I'd like
19 to highlight the table. I think it's page 40 of the same
20 exhibit.

21 Q. (BY MR. POPE) Is there a particular place in
22 this table that you'd like to highlight for the council?

23 A. So first maybe we'll highlight the table
24 heading. So this table in the groundwater restoration
25 document by Big Horn summarizes the aquifer hydraulic

1 properties conducted in the Big Horn Coal area. So they
2 did aquifer tests in the spoils area. And what aquifer
3 test is, you pump a specific well in the backfill aquifer.
4 You install monitor wells. Monitor the effects of this
5 pumping on the monitor well. And then you -- then you use
6 mathematical calculations, mostly curve fitting, to
7 estimate the properties of the aquifer, specifically
8 transmissivity of the aquifer.

9 So I'd like to also clarify that this aquifer
10 test, if we can like highlight to the date of the test
11 here. Can you zoom in the whole row that shows the date?

12 So the dates of these tests are 1981, '81, '82,
13 '81, '82, '84, '84. So I'll repeat the dates of these
14 tests are -- the first one was conducted in '75, '81, '81,
15 '82, '81, '81, '82, '84, '84.

16 So the point that I'd like to make is these
17 tests were not conducted as part of the groundwater
18 restoration process that -- so these tests were not
19 conducted in 2002. These tests were conducted in 1984, as
20 part of the permit application and the tests that they
21 were conducting at this site.

22 So we know that the -- the groundwater levels of
23 the backfill approximately zero, are dry in 1978. And
24 2002 is the time period that we know that the aquifer
25 re-saturated to pre-mining conditions. So between dry

1 and -- dry in '78 and completely saturated pre-mining
2 conditions in 2002, they picked the time period of 1981
3 through '84 to conduct these tests. So when they
4 conducted these tests, the aquifer is not fully saturated
5 to the pre-mining conditions.

6 So that's an important point to remember. I
7 mean, these tests are not conducted as part of the
8 groundwater restoration document. And these were earlier
9 tests that were conducted in 1984, and the aquifer was
10 nowhere close to like our pre-mining conditions.

11 And then I'd like to highlight the
12 transmissivity and the hydraulic conductivity rows here
13 for the council.

14 So the aquifer test gives here the hydraul --
15 the transmissivity. So once you get the transmissivity
16 from the calculations, you'll have to know the thickness
17 of the aquifer that you're testing. So take the
18 transmissivity value, divide it by the aquifer thickness,
19 and that gives us the hydraulic conductivity. And that's
20 the value that Brook Mine will be plugging into the model.
21 So the aquifer test gives you hydraulic transmissivity.
22 You divide it by the saturated thickness, and that gives
23 you the hydraulic conductivity.

24 And here in the comments, I mean, right next to
25 all these hydraulic conductivity values there are question

1 marks.

2 THE REPORTER: You're going to have to slow
3 down a little bit.

4 THE WITNESS: Sorry.

5 A. So right next to the hydraulic conductivity
6 values you'll see question marks right next to them. But
7 you don't see question marks right next to the
8 transmissivity because these are the values that they got
9 from the test, from the calculations, the curve fitting
10 procedures.

11 So why did the question marks show up here?
12 Because we can read from the comments here, the saturated
13 thickness is questionable. So as I mentioned before, you
14 take the transmissivity and divide it by the saturated
15 thickness. And if the saturated thickness was
16 questionable, then it puts -- puts a question mark on the
17 hydraulic conductivity, which is the key input parameter
18 for the model. And I think why is there not a question
19 mark and do we need to worry about this value without
20 question mark? No, we don't, because I think if you look
21 at the specific column heading points to this value,
22 that's the place that -- but not -- that's not the pit
23 area that we are interested in. So on the -- on the
24 values that we are interested in for the TR-1 area, they
25 all have a question mark right next to them.

1 And in addition to the saturated thickness being
2 questionable, I'd like to like maybe provide a simple
3 calculation for the council here. The transmissivity
4 value is 58. And the hydraulic conductivity value is 58.
5 So can I calculate the thickness from here? Yes. 58
6 divided by 58, that's one. So the saturated thickness --
7 and they tested this aquifer at this specific well as
8 1 foot. And we know that the current saturated thickness
9 on an average at the site is 60 to 70 feet. So this --
10 these values are not just questionable. They are not even
11 representative of the saturated thickness of interest to
12 us.

13 And the other thing that was like brought up by
14 the council during my direct testimony is how water
15 particularly moves downwards once they begin the trench,
16 from the trench area into the coal seams. So the
17 parameter that gives you that information is vertical
18 hydraulic conductivity. So these tests that were
19 connected by Big Horn, they do not provide the vertical
20 hydraulic conductivity. They us the horizontal hydraulic
21 conductivity. They give us the rates that water moves
22 laterally, not vertically.

23 So these tests are -- to begin with, they are
24 questionable. They are not representative of the
25 saturated thickness we are in. They are incomplete

1 because they do not prorate the vertical hydraulic
2 conductivity information and we can see that they provide
3 three orders of magnitude variability here. So I'm not
4 convinced that this information is reliable enough to get
5 into the predictive model that Brook Mine is using.

6 And the other thing I'd like to point out about
7 vertical hydraulic conductivity, it's typically to an
8 order of magnitude of -- two orders of magnitude lower
9 than the horizontal hydraulic conductivity. Because it's
10 how the laid -- the materials are laid out. And once the
11 mine starts moving, their equipment's on top of the
12 backfill, over time it gets compacted a lot more. So it's
13 a pretty well documented fact in Powder River Basin mines
14 in the backfills, the vertical hydraulic conductivity is a
15 lot lower than the horizontal hydraulic conductivity.

16 So this is the piece of information that's in
17 the GRD, but I did not recommend Brook Mine to use their
18 model.

19 Q. (BY MR. POPE) I have a follow-up question for
20 you, Dr. Kuchanur. You mentioned the distinction between
21 horizontal and vertical hydraulic conductivity. You
22 mentioned the council had some questions about what
23 happens when you come into the TR-1 area and dig. How
24 does the vertical hydraulic conductivity impact the
25 analysis of groundwater flow in the TR-1 area in that

1 respect?

2 A. Just for my own clarification. Are we talking
3 about after it's backfilled or during operations?

4 Q. Both, if you would discuss.

5 A. So during operations -- I mean, as long as the
6 mine has water management plan, and if the water, the
7 groundwater that's going to be intercepted is lining up
8 with the .06 CFS predicted by Big Horn are the range of
9 the values as predicted by Brook, we are looking at
10 relatively minimum amount of waters they can handle
11 because of the lower permeabilities of the materials
12 during operations.

13 So during operations, it's more a mine
14 operational procedure, how do they handle the water, how
15 do they store the water, how do they dispose of the water,
16 how do they manage the water. But when it comes to
17 re-saturation and backfilling the aquifer, that's when the
18 vertical hydraulic conductivities plays a significant
19 role, because once you put in the backfill material, and
20 where the backfill material came from, it's the original
21 clay that was in there, the original siltstone that was in
22 there, they take it out and they put it back.

23 Typically mines follow a pretty sequential
24 procedure in how they lay these materials back into the
25 aquifer for their own operational benefit. So they track

1 where they put these materials when they put dig it out,
2 and then also track how they put it back into the
3 backfill. So once they put these materials back into the
4 backfill, even though they have dug it out and changed the
5 hydraulic properties to a certain extent.

6 Over time and how they place these materials,
7 vertical layers, using truck and shovel operations.
8 Because of the way that they place these materials, they
9 get compacted vertically and not horizontal. So they get
10 compactd more vertically.

11 So, in general -- I mean, I these materials, to
12 begin, with a low permeability, that coal. So when you
13 disturb the horizontal hydraulic conductivities might
14 increase a little bit more, but the vertical hydraulic
15 conductivities will be -- will not be extremely dissimilar
16 to what you had in the background.

17 So the vertical movement of groundwater from the
18 Tongue River, flowing through the alluvium into the
19 backfill, getting into the TR-1 and then migrating
20 vertically downwards, we are talking about an extremely
21 slow process, a relatively minimal amount of water over
22 time.

23 I would not discount that there will not be any
24 water that's seeping from the Tongue River, of the
25 alluvium or coal seams, into the backfill, but it's going

1 to be a slow process, a relatively minimum amount of
2 water.

3 Q. Thank you, Dr. Kuchanur.

4 I want to shift gears here and discuss some of
5 the opinions that Mr. Wireman talked about yesterday.
6 Were you present to hear his discussion?

7 A. Yes, I was.

8 Q. Did anything Mr. Wireman said change your mind
9 about the accuracy and completeness of the Brook permit
10 application?

11 A. Mr. Wireman had pointed out several concerns for
12 the council. When we had two hydrogeologists or
13 hydrologists testify before the council from the
14 objectors' point of view -- one is Mr. Gerlach, the other
15 one is Mr. Wireman -- for me, it was like little easier.
16 I was more readily able to provide information to the
17 benefit of the council for Mr. Gerlach's testimony because
18 he pointed out a specific document that's readily
19 applicable to the site. And he pointed out some specific
20 concerns of why you did not use this information or this
21 information should have been used into the model. So it
22 was -- it's easy for me to wrap my head around and explain
23 to the council why I -- or how I did this review and how I
24 incorporated some pieces of information versus others. So
25 it makes -- it helps me to explain to the council and

1 others how I did my job.

2 But in Wireman -- Mr. Wireman's testimony, there
3 was a lot of scientific principles based on textbook
4 publications that are of a general nature. So, I mean,
5 the scientific principles I agree with, but I think like
6 the hearing has been long and I've been listening really
7 closely to the testimony to see like how I can connect the
8 dots and see like how -- are there any points I need to be
9 concerned about for future purposes.

10 But for the benefit of the council, I'm finding
11 myself in a fix to offer any specific explanations.

12 Q. And I apologize. I may have asked a poor
13 question, Dr. Kuchanur. My question, though, is did you
14 hear anything from Mr. Wireman that changes your opinion
15 on the technical adequacy of Brook's permit application?

16 A. No.

17 Q. I heard -- we discussed, when you were
18 testifying in Sheridan, about the principle of parsimony.
19 Does the principle of parsimony inform any of your
20 opinions about Mr. Wireman's testimony?

21 A. I think I'd like to highlight for the council,
22 Brook Mine collected the baseline data that tells us
23 what's in the ground right now. DEQ reviewed it. And
24 then they synthesized this information into a predictive
25 model to predict future -- future impacts. So definitely

1 there are uncertainties.

2 So, I mean, we -- I mean, I consider the model
3 as a predictive tool that gives us information and
4 knowledge to represent reality, but it's not reality. So
5 that's where I'd like to like go back to the backstop
6 mechanisms DEQ has in place. So, I mean, I don't want to
7 repeat this phrase, but I can't help myself. We should
8 not be losing the -- losing the forest for the trees. We
9 should not be representing a lot of technical details and
10 heterogeneity to the model and make it so complex that we
11 don't understand how the model behaves and make meaningful
12 interpretations for 20 and 25 years.

13 We are not just interested in the near future of
14 what's happening in the next month or so. We are in
15 charge of regulating the groundwater impacts for the next
16 decade or however long it takes. In Big Horn's case, it
17 took 23 years. So I think that's what I'd like to
18 highlight, that it's a model. It has its limitations,
19 uncertainties. We should not be making it any more
20 complex than what is dictated by what you see at the site.

21 Q. Just have one other topic I want to discuss with
22 you, and that's the probable hydrologic consequences piece
23 of the permit application. From the data provided in the
24 Brook permit application, the publicly available data and
25 DEQ's data, were you able to determine the probable

1 hydrologic consequences of the proposed Brook Mine?

2 A. Yes.

3 Q. And I know you discussed some of this with the
4 council back in Sheridan, but it's been a while. Can you
5 refresh the -- refresh everyone's mind about what areas of
6 the permit application allow you to assess the probable
7 hydrologic consequences?

8 A. So the -- there are three pieces of information
9 that I can think of. First one is the Appendix D6 that
10 baseline hydrology. That's where they collected the water
11 levels, the hydraulic properties, the hydrogeology
12 properties. So that's base information on hydrology and
13 hydrogeology.

14 And then the mine plan, it has a specific
15 section within the mine plan that's titled as Probable
16 Hydrologic Impacts. So that's one of the key pieces of
17 information that they predict the probable hydrologic
18 impacts.

19 And the last piece of information is in the
20 reclamation plan. So the mine plan gives what's -- or
21 predicts or estimates what are the impacts during mining,
22 during operations. And the reclamation plan, there is a
23 specific section in there that discusses what's the
24 impacts? How the water levels would be recovering
25 post-mining.

1 So these are the three pieces of information
2 that I reviewed to help me understand probable hydrologic
3 consequences of the proposed mine.

4 MR. POPE: Thank you, Dr. Kuchanur. I have
5 no further questions.

6 CHAIRMAN BAGLEY: Thank you, Mr. Pope.

7 So I've changed the order of cross, just to keep
8 everybody on their toes.

9 Mr. Kuhlmann.

10 MR. KUHLMANN: Thank you, Mr. Hearing
11 Officer. I apologize. I had written some questions.

12 I don't believe I have any additional questions
13 to what Mr. Pope asked.

14 CHAIRMAN BAGLEY: Thank you.

15 Mr. Gilbertz.

16 MR. GILBERTZ: Thank you.

17 CROSS-EXAMINATION

18 Q. (BY MR. GILBERTZ) Good morning, Doctor.

19 A. Good morning.

20 Q. A couple of follow-up questions. You had a nice
21 discussion with the council about interaction, recharge
22 rates and things down in TR-1 area, correct?

23 A. Yes.

24 Q. And the TR-1 area is different from the
25 remainder of the mine -- proposed mine area in two

1 important ways. One, it's the only mine area laying south
2 of the Tongue River, correct?

3 A. That's correct.

4 Q. And it is also the only mine area which had been
5 previously mined?

6 A. Previously mined by Big Horn?

7 Q. Yes.

8 A. Yes.

9 Q. And so in that instance we're analyzing the data
10 that comes from there is an area which has been previously
11 strip mined and is south of the Tongue River?

12 A. That's correct, yes.

13 Q. And the remainder of the mine area is different
14 than that, correct? In the -- in those two ways?

15 A. Yes.

16 Q. Okay. Now, I won't bother putting the map up
17 again for fear that Dr. Bagley would dream of it. But we
18 have seen the map of the AVFs and potential AVFs in the
19 Tongue River Valley represented in DEQ Exhibit Number 16.
20 You're familiar with that map, correct?

21 A. Yes.

22 Q. Okay. To be clear, there was no monitoring
23 wells ever placed within the potential AVF area; is that
24 right?

25 A. That's correct.

1 Q. And there is no plan to put any monitoring wells
2 within the potential AVF area, correct?

3 A. So the mine permit -- the mine application
4 currently commits to three monitor wells in the Tongue
5 River alluvium. So there is a commitment from the mine,
6 as it take us right now, to put three additional monitor
7 wells in the Tongue River alluvium.

8 Q. Okay. And that commitment could be construed as
9 a commitment to put the three monitoring wells in the
10 currently designated AVFs, correct?

11 A. Not exactly sure of those locations.

12 Q. As a scientist and an engineer, would you agree
13 that it would be sensible and appropriate to put
14 monitoring wells in the potential AVF?

15 A. Of the Tongue River alluvium?

16 Q. Yes.

17 A. Depending on the location, they can provide
18 useful information.

19 Q. As it stands right now today, we have no
20 baseline information about the water levels in the Tongue
21 River potential AVF.

22 MR. KUHLMANN: Is that -- is that a
23 question? Is that a question?

24 MR. GILBERTZ: It is.

25 A. So the information that we have is -- there is a

1 perennial river that is flowing that is alluvial right
2 next to it. The alluvium water levels, on average, would
3 be replicative of the stage elevations in the Tongue
4 River. So once you have stage elevations in the Tongue
5 River, you have a good understanding of the water levels
6 in the alluvium.

7 Q. Do you have a clear understanding of the actuals
8 as they exist in the field? You would agree with me, as a
9 scientist and an engineer, it would be prudent to put in
10 monitoring wells to get that baseline from the potential
11 AVF in the Tongue River?

12 A. It's not a regulatory --

13 THE REPORTER: Not a regulatory?

14 THE WITNESS: Requirement. Requirement.

15 Q. (BY MR. GILBERTZ) I understand that. But my
16 question to you is, as a scientist and engineer, wouldn't
17 you agree it's prudent to get the direct data?

18 A. From my role, I have to look at both regulations
19 and science together.

20 Q. Okay. As an engineer and scientist, would you
21 not agree with me that it is prudent to have monitoring
22 wells in the Tongue River potential AVF to know precisely
23 what the baseline is?

24 MR. KUHLMANN: I'll object. Asked and
25 answered.

1 MR. GILBERTZ: It hasn't been answered.

2 MR. KUHLMANN: He just said he has to look
3 at both regulations and his experience.

4 CHAIRMAN BAGLEY: It's being asked as a
5 yes-or-no question, and I'm not sure can be answered as a
6 yes-or-no question. I'll give Dr. Kuchanur one more crack
7 at answering that, then we'll move on.

8 A. It's not in my job role's responsibility to ask
9 more than what the regulations require us to do.

10 Q. (BY MR. GILBERTZ) Isn't it part of your job to
11 ensure that there will not be material damage to the
12 hydrologic balance inside and outside the permit area?

13 A. Yes.

14 Q. Okay. And how will we know if there's a
15 material damage if we do not have good baseline data to
16 begin with?

17 A. We have the information that we need for
18 baseline to make reasonable interpretations on the impacts
19 to these resources.

20 Q. Without that data, the operator will be free to
21 argue that they are not the cause of the change or that
22 that -- that the baseline was something different than
23 what your interpretation is?

24 MR. POPE: Objection. Speculation. Calls
25 for him to opine about what the operator will do.

1 MR. GILBERTZ: I didn't ask what the
2 operator would do. I said the operator would be free to.

3 MR. POPE: Same objection. It's asking him
4 to speculate about what the operator can and can't do.

5 CHAIRMAN BAGLEY: Yeah, that's a question
6 Dr. Kuchanur would not be able to answer. Doesn't know
7 what the operator would be free to do.

8 Q. (BY MR. GILBERTZ) Without the actual baseline
9 data, there will be plenty of room for disagreement
10 amongst the experts, correct?

11 MR. POPE: Objection. Calls for him to
12 speculate about what the experts are going to do.

13 MR. GILBERTZ: I don't think it does. He's
14 dealt himself out as an expert in this area. I'm asking
15 him without the data, experts can disagree, can't they?

16 CHAIRMAN BAGLEY: I'll allow that question.

17 A. Even with data, experts tend to disagree.

18 Q. (BY MR. GILBERTZ) And as it -- as it stands
19 today, there is no commitment to put in monitoring wells
20 in the future which would act once mining begins, correct?
21 In -- in the Tongue River potential AVF.

22 MR. POPE: Objection. Asked and answered.
23 He already asked him about the location of potential
24 monitoring wells and potential AVF.

25 CHAIRMAN BAGLEY: Yeah. I think the answer

1 I heard was there's no plan to put them in at this point.

2 MR. GILBERTZ: Okay.

3 CHAIRMAN BAGLEY: So yeah.

4 MR. KUHLMANN: Mr. Hearing Officer, I think
5 his testimony was that he didn't know where the location
6 would be.

7 CHAIRMAN BAGLEY: Okay. Well, good point.
8 I'm going to go ahead -- ask the question one more time and
9 let him answer one more time.

10 MR. GILBERTZ: We are --

11 CHAIRMAN BAGLEY: Since there's a
12 disagreement by my understanding, I guess I need a
13 clarification. Ask the question and let him answer it.

14 MR. GILBERTZ: We're clearly in a very
15 sensitive area.

16 I think you have answered the question, Doctor.
17 Thank you.

18 I have no further questions. Thank you.

19 CHAIRMAN BAGLEY: Thank you, Mr. Gilbertz.

20 Ms. Boomgaarden.

21 MS. BOOMGAARDEN: Thank you, Dr. Bagley.

22 CROSS-EXAMINATION

23 Q. (BY MS. BOOMGAARDEN) Good morning,
24 Dr. Kuchanur. I have just two simple yes-or-no questions
25 for you.

1 Did you rely on a definition in the
2 Environmental Quality Act to determine the meaning of the
3 phrase "technically adequate"?

4 A. I cannot specifically recall the definition.

5 Q. Second question, did you rely on definition in
6 the Land Quality Division Rules and Regulations to
7 determine the meaning of the phrase "technically
8 adequate"?

9 A. I cannot recall a specific recollection.

10 MS. BOOMGAARDEN: Thank you.

11 No further questions.

12 CHAIRMAN BAGLEY: Thank you,

13 Ms. Boomgaarden.

14 Ms. Anderson.

15 MS. ANDERSON: Thank you, Dr. Bagley.

16 CROSS-EXAMINATION

17 Q. (BY MS. ANDERSON) Good morning, Dr. Kuchanur.

18 A. Good morning.

19 Q. I have -- my first question for you is did you
20 work with Mr. Pope to prepare your testimony today?

21 MR. POPE: Objection. Relevance.

22 MS. ANDERSON: I mean, part of what I'm
23 getting at here is that DEQ has put themselves out as being
24 somewhat unbiased in these proceedings and willing to work
25 with -- you know, listen to the public and receive our

1 information. And if they're working directly with the
2 company to provide rebuttal evidence, that impeaches that.

3 MR. POPE: Dr. Bagley, I think that
4 mischaracterizes what's happened. I don't think there's
5 been any statement that DEQ has held themselves apart from
6 the company as part of this process. In fact, the
7 testimony has been that they've collaborated with Brook
8 Mine in preparing the permit application to comply with the
9 rules and regulations. It's totally irrelevant whether
10 Dr. Kuchanur talked to the company about any issues.

11 CHAIRMAN BAGLEY: In this case, this
12 actually does appear to be a yes-or-no question. I'll
13 allow this question. We'll see if any others come up.

14 MS. ANDERSON: Okay. Thank you.

15 Q. (BY MS. ANDERSON) So to remind you of the
16 question. Did you work at all with Mr. Pope to prepare
17 your testimony today?

18 A. I worked with Mr. Kuhlmann, DEQ AG. In the
19 presence of Mr. Kuhlmann, Mr. Pope had some questions that
20 he asked me.

21 Q. Okay. So he was present when you were doing
22 your preparation for today?

23 A. Not on my preparation, but there was a
24 conference call, but Mr. Pope was there and the AG's
25 office, of course.

1 Q. Okay. Thank you.

2 All right. We'll get to the science now. So we
3 can talk about that. You gave some testimony about the
4 23 years that it took to recharge that backfill aquifer.
5 Is that -- is that the right understanding of that? 23
6 years?

7 A. That's correct.

8 Q. Okay. What is Brook's estimate of recharge in
9 this area in the Brook years?

10 A. Depending on the coal seam areas, between 10 to
11 20 years.

12 Q. 10 to 20 years. Okay.

13 Would you consider that long term?

14 A. In a general sense, yes.

15 Q. Okay. So -- and we talked a little bit just now
16 about the recharge and how to estimate the number of years
17 for that recharge. Is there any uncertainty in those
18 calculations and estimates?

19 A. So that's noted in Big Horn's GRD, the
20 groundwater restoration document. They acknowledge one of
21 the --

22 THE REPORTER: I'm sorry.

23 THE WITNESS: They acknowledge that one of
24 the uncertainties is when the re-saturation began. So
25 that's one uncertainty I can think of.

1 Q. (BY MS. ANDERSON) Okay. How about in Brook's
2 information, are there any error bars related to the
3 recharge estimates?

4 A. Yes.

5 Q. What are those error bars?

6 A. That's the 10 to 20 years.

7 Q. Okay. So roughly an error of 10 years?

8 A. So 10 years is for one specific coal seam. The
9 Carney coal seam. And the 20 years is for the Masters
10 coal seam. So that, in general, gives you an estimate on
11 how long it takes to recharge these coal seams.

12 Q. And that's for the entire permit area?

13 A. On an average, yes.

14 Q. Okay. And what data was used to calculate those
15 estimates?

16 A. Those estimates are provided as part of the
17 predictive values that are --

18 THE REPORTER: That are?

19 THE WITNESS: Provided by the MODFLOW
20 model.

21 Q. (BY MS. ANDERSON) Was there any recharge data
22 provided by the company for the Dietz or the Monarch coal
23 seams?

24 A. Yes.

25 Q. Okay. Do you remember offhand what those

1 recharge values were, the number of -- estimated number of
2 years for recharge? It's okay. I know it's a long
3 application. So if you don't remember, that's okay.

4 A. Yeah. I'm not sure, but I think I'm going -- I
5 don't understand what recharge means, but I can't recall.
6 That's the answer.

7 Q. Okay. Great.

8 Would you generally agree, as a scientist, the
9 ability to predict long-term impacts is subject to the
10 same uncertainties as predicting near-term impacts?

11 A. No.

12 Q. And what is the difference?

13 A. Near-term impacts, like, for example, the
14 uncertainties that you have deal with near term are lesser
15 related to that certainties you deal with on on a longer
16 term. So I see progress with time there's more potential
17 for things to be uncertain.

18 Q. Okay. Thank you.

19 Would you agree that the observations by
20 Big Horn Coal in their report regarding the alluvium are
21 qualitative and not necessarily based on empirical
22 quantitative data?

23 A. Can you please restate that question?

24 Q. Yeah. I guess I'm getting to what -- whether
25 you think the data regarding the alluvium that you spoke

1 to today is qualitative or quantitative.

2 A. It's based on the information data they
3 collected at the monitor wells.

4 Q. Okay. All right. So going back to that a
5 little bit. Did Big Horn Coal, in their data, look at
6 alluvium in Slater Creek or the potential AVFs in the
7 Tongue River? Along the Tongue River?

8 A. I did not review the AVFs.

9 Q. Okay. Would you generally agree that there
10 are -- as Mr. Gilbertz just explored with you, there are
11 currently no monitoring wells in that potential alluvial
12 valley floor area along the Tongue River?

13 A. Yes.

14 MR. KUHLMANN: Objection. Asked and
15 answered.

16 MS. ANDERSON: Okay.

17 Q. (BY MS. ANDERSON) My next question is how do
18 you determine a probable hydrologic consequences if you
19 have no monitoring wells?

20 A. So there are like two parts to that response to
21 your question. Number one, it was -- there was this
22 pre-application phase, before even the mine submitted an
23 application, that District 3 Sheridan office staff worked
24 with the Brook Mine to determine where the monitors wells
25 need to be placed. So I cannot speak to those -- where

1 they placed and why they placed those locations. Number
2 one.

3 So number two, from a modeling perspective, the
4 best impressions of the mine are predominantly dry so
5 there is lesser water from the coal seams that will be
6 discharging into the alluvium. So from that significance
7 perspective, I did not think the impacts of these
8 locations are going to be significant enough for modeling
9 purposes.

10 Q. Okay. You just spoke to a meeting with the
11 District 3 Land Quality Division office. So you weren't
12 present at that meeting?

13 A. I was not.

14 Q. Okay. And I think you gave testimony in
15 Sheridan that that kind of predated your review of the
16 permit application, right?

17 A. That's correct.

18 Q. During your review, did you ever try and revisit
19 that decision that was made, or did you feel the need to
20 do that?

21 A. So you asked me instances where I did not
22 understand the rationale. I asked for justification from
23 the mine for locations that the monitor wells were present
24 or not. So I asked for justification for my own
25 understanding.

1 Q. Okay. As a scientist, how can you deny the
2 importance of baseline data for the alluvial valley floor
3 system of the Tongue River?

4 MR. KUHLMANN: Objection. I don't think he
5 said that.

6 CHAIRMAN BAGLEY: I agree.

7 MS. ANDERSON: Okay.

8 CHAIRMAN BAGLEY: Rephrase that question.

9 MS. ANDERSON: It's fine. I think we've
10 covered this quite a bit, so...

11 Q. (BY MR. ANDERSON) What data did you rely on to
12 get aquifer thickness in the area?

13 A. The aquifer thickness provided in Appendix D5 of
14 the mine permit application.

15 Q. Okay. So you spoke a lot to the hydraulic
16 conductivity data and what that means. But would you
17 agree that a large part of that data was not obtained from
18 site-specific baseline monitoring wells?

19 A. Can you please restate the question?

20 Q. Yeah. I guess we talked a little bit in
21 Sheridan about this too, but how many baseline monitoring
22 wells were used to calculate hydraulic conductivity for
23 the Brook Mine permit area?

24 A. There was one aquifer test they relied on.

25 Q. Thank you.

1 All right. You spoke a little bit this morning
2 about the amount of data in response to Mr. Wireman's
3 testimony. I think you said, you know, there's
4 uncertainties, but there's some backstop mechanisms, but
5 you made a statement that I'm interested in. And you said
6 that the model should be dictated by what you see at the
7 site. Would you agree that this is a complex hydrologic
8 system?

9 A. Most hydrologic systems are complex.

10 Q. Sure. Would you agree that the permit
11 application itself calls this area complex in terms of
12 hydrology?

13 A. Cannot recall of a specific section.

14 Q. Do you remember Mr. Wireman's testimony about
15 that yesterday?

16 A. Can't remember the exact testimony.

17 Q. Okay. Well, assuming this area is complex,
18 would you agree with me that the model should be equally
19 complex if that's what you see at the site?

20 A. So the model should not be made any complex than
21 what's at the site. So you should not be introducing
22 heterogeneity and complexity to the model if it's not
23 supported by the model's ability to represent water
24 levels.

25 Q. Okay. Thank you.

1 Okay. Let's get back to the regulatory
2 requirements a little bit. So we've talked a little bit
3 about what data is there and not there and some error bars
4 and some estimates. Given all this, are you still
5 confident that the permit application prevents material
6 damage outside the permit boundary?

7 MR. KUHLMANN: Objection. I don't think
8 he's made that determination. We talked about this
9 yesterday.

10 CHAIRMAN BAGLEY: I was writing something.
11 Could you restate -- re -- tell me the question again so I
12 can hear it. I was writing something.

13 MS. ANDERSON: I was asking Dr. Kuchanur if
14 he's confident still that the permit application prevents
15 impacts to the material -- to material damage of the
16 hydrologic balance outside the permit boundary.

17 MR. KUHLMANN: Mr. Hearing Officer, I just
18 remind you this is something out of 406(n). It's
19 cumulative hydrologic impact. Determination that needs to
20 be made prior to issuance, but not for technical adequacy.

21 CHAIRMAN BAGLEY: Yeah, I -- I feel like
22 this question has been asked and asked and answered and
23 answered. I don't know that everybody's happy with the
24 answers they're hearing, but I've been hearing answers to
25 this. Rephrase that.

1 MS. ANDERSON: Sure. I'll ask it a
2 different way.

3 Q. (BY MS. ANDERSON) So you testified you believe
4 the permit application is technically adequate; is that
5 right?

6 A. That's correct.

7 Q. Does that have anything to do with material
8 damage prevention?

9 A. The material damage assessment is a separate
10 assessment --

11 THE REPORTER: It's a separate?

12 THE WITNESS: It's a separate assessment
13 that relies on the permit application.

14 Q. (BY MS. ANDERSON) It relies on the permit
15 application.

16 A. That's correct.

17 Q. Okay. So what, in your opinion and your review,
18 what does it mean to be technically adequate at this
19 stage? What does that mean in terms of prevention of
20 material damage and what the company has and hasn't
21 demonstrated?

22 A. The determination of technically adequate means
23 it has met all the statutes, rules, regulations and
24 providing all the information that we need to make
25 assessment.

1 Q. Okay. And would you agree that an important
2 part of the statute is to prevent material damage to the
3 hydrologic balance outside the permit area?

4 A. There is the 406(n) that's in the statute.

5 Q. Okay. All right. All right. Now, I have some
6 questions from the other scientist next to me.

7 Are there any permeability tests which were
8 taken in the fault zones? Do you remember that in the
9 permit application?

10 A. The aquifer test that Brook relied on was closer
11 to the fault. The fault lines that was documented.

12 Q. Okay. So one test?

13 A. Yes.

14 Q. Okay. Do you believe that the model accounts
15 for data in these fault zones?

16 A. Yes. The MODFLOW model accounts for faults and
17 they are presented as horizontal flow values within the
18 MODFLOW model.

19 Q. Okay. Did the model consider any subsidence
20 effects at the permit area or potential subsidence
21 effects?

22 A. No.

23 Q. In your opinion, how is the model complete
24 without considering potential subsidence impacts and
25 affects?

1 A. The model relied on the information that's
2 provided in the permit and their determination of
3 subsidence impacts.

4 MS. ANDERSON: Okay. I think that is all I
5 have for you. Thank you.

6 CHAIRMAN BAGLEY: Thank you, Ms. Anderson.
7 Council have any questions? Mr. Agopian?

8 COUNCIL MEMBER AGOPIAN: I don't have any.

9 EXAMINATION

10 Q. (BY CHAIRMAN BAGLEY) So, Dr. Kuchanur, thank
11 you for doing the conversion for me today. Appreciate
12 that.

13 I -- I just want to ask in general about the
14 MODFLOW model and the complexity of groundwater models in
15 general. Does the MOD -- the MODFLOW model deals with
16 changes in time; is that correct?

17 A. Yes.

18 Q. So it's got to solve a four-dimensional partial
19 differential equation; is that correct?

20 A. Yes.

21 Q. So is that a trivial exercise, to solve a
22 four-dimensional partial differential equation?

23 A. It's not.

24 Q. Who in this room do you think would be able to
25 solve that?

1 A. I can say that I can.

2 Q. I think you may be the only one, because I took
3 that class a long time ago. Maybe Dr. Marino can as well.
4 It's not a trivial issue.

5 So the question, then, when you talk about
6 ground flow model complexity, it's a balancing act, is it
7 not?

8 A. That's a great point, yes.

9 Q. So when you try to get a resolution to a very
10 small area, is that an easier situation to solve than if
11 you're trying to a larger area?

12 A. I think you're getting back -- or you're sort of
13 getting into the grid sizes, Dr. Bagley, I assume. Is
14 that --

15 Q. Sure. Yeah.

16 A. So I think it's -- if the number of grid sizes
17 are lesser, it's easier to solve.

18 Q. So I guess I just personally took some offense
19 to people calling a ground flow model not complex. That
20 doesn't mean that you can't always do better at ground
21 flow groundwater modeling. So I just wanted to make that
22 clarification. These are not trivial models that can
23 solve with simple arithmetic. I don't have any other
24 questions.

25 Redirect, Mr. Pope?

1 MR. POPE: Briefly. Thank you.

2 REDIRECT EXAMINATION

3 Q. (BY MR. POPE) Dr. Kuchanur, we're going to pull
4 up on the screen DEQ Exhibit 12-144. We're going to zoom
5 in for everybody.

6 Dr. Kuchanur, based on the legend that we've
7 zoomed in on, what does DEQ Exhibit 12-144 show?

8 A. It's the Operational Surface Water and
9 Groundwater Monitoring Program.

10 Q. To your knowledge, does this show the locations
11 of monitoring wells?

12 A. Yes, they do.

13 Q. The reason we're here is your discussion with
14 Mr. Gilbertz about the location of alluvial monitoring
15 wells.

16 Zoom out.

17 Dr. Kuchanur, do you see any alluvial monitoring
18 wells in the portion that we just zoomed in on?

19 A. Yes. I believe those are the purple triangles.

20 Q. All right. And you spoke with Mr. Gilbertz
21 about DEQ Exhibit 16 and the potential AVF acreage. Do
22 you recognize the area zoomed in on as a portion of
23 that -- near that potential AVF acreage?

24 A. That's correct.

25 Q. I have a very simple question here for you based

1 on Ms. Anderson's question about the conference call you
2 and I had. Did I tell you what to say as part of your
3 testimony?

4 A. No, you did not.

5 Q. Final question for you, actually. There's been
6 some discussion about technical adequacy. What does
7 technical adequacy mean? Does technical adequacy, in the
8 minds of DEQ, indicate that a permit application is
9 accurate and complete?

10 A. That's correct.

11 MR. POPE: I have no further questions.

12 CHAIRMAN BAGLEY: All right. Thank you,
13 Mr. Pope.

14 Thank you, Dr. Kuchanur.

15 THE WITNESS: Thank you.

16 CHAIRMAN BAGLEY: You can step down.

17 Let us take a 10-minute break. Be back here at
18 5 minutes to 10:00.

19 (Hearing proceedings recessed

20 9:44 a.m. to 9:57 a.m.)

21 CHAIRMAN BAGLEY: All right. Let's get
22 started again.

23 Mr. Pope, do you have any other witnesses?

24 MR. POPE: We do. We call Jeff Barron to
25 the stand.

1 (Witness sworn.)

2 JEFF BARRON,

3 called for examination by Brook Mine, being first duly
4 sworn, testified as follows:

5 DIRECT EXAMINATION

6 Q. (BY MR. POPE) Good morning, Mr. Barron.

7 A. Good morning.

8 Q. Welcome back to the hot seat.

9 I'd like to start our discussion today in the
10 TR-1 area. We heard a lot of discussion in Sheridan about
11 whether or not the permit application allows someone to
12 figure out what's going to happen in the TR-1 area. In
13 your opinion, as the professional engineer who coordinated
14 and assembled this permit application, does the permit
15 allow a determination of the probable hydrologic
16 consequences of mining in the TR-1 area?

17 A. It does.

18 Q. How?

19 A. The TR-1 area is described as a backfill area.
20 And -- so we've outlined in Appendix D5 that it's
21 comprised mostly of unconsolidated backfill material.
22 It's very localized. It does not have any wells completed
23 in it. Appendix D6 does not note any wells. So it --
24 it's not an aquifer that's being utilized for a beneficial
25 use of any kind. So the impacts, even if it's saturated,

1 there's no one using it, so no one is impacted. And the
2 permit application describes that.

3 Q. In your opinion, does the lack of monitoring
4 wells in the TR-1 area hinder the determination of
5 probable hydrologic consequences in any way?

6 MS. ANDERSON: Objection. Mr. Barron is
7 not a hydrogeologist.

8 MS. BOOMGAARDEN: I would like to note that
9 objection for the record as well.

10 MR. GILBERTZ: Join.

11 MR. POPE: Dr. Bagley, Mr. Barron is a
12 professional engineer who prepared the permit application,
13 participated in many of the studies, and did many of the
14 pieces of analysis that are contained in the permit
15 application, both about the TR-1 area and about other
16 areas.

17 MS. ANDERSON: He did not prepare this
18 portion of the permit application, or if he did, I'd be
19 surprised.

20 CHAIRMAN BAGLEY: Can I hear the question
21 again?

22 MR. POPE: Absolutely. My question was in
23 his opinion does the lack of monitoring wells in the TR-1
24 area hinder the ability to determine the probable
25 hydrologic consequences of mining in that area.

1 MS. BOOMGAARDEN: Dr. Bagley, if I could
2 also note for objection that this is in the scope of
3 rebuttal testimony, and so it needs to -- the questions
4 need to be very directly related to anything that
5 Mr. Barron is qualified to rebut from the witnesses put on
6 by PRBRC, the Fishers or Big Horn Coal. This isn't a
7 second bite at the apple for Mr. Barron to supplement his
8 earlier testimony, and particularly in the area for which
9 he's not qualified.

10 MR. POPE: Dr. Bagley, we aren't
11 supplementing. There was evidence put on by both
12 Mr. Sweeney and Mr. Gerlach that monitoring wells were not
13 completed in the TR-1 area. There was a back and forth
14 about why that happened. The question still remains of
15 whether that matters, and that's what we are rebutting
16 here. And certainly that's inference Big Horn Coal wishes
17 the council to draw.

18 CHAIRMAN BAGLEY: Objection's noted, but
19 I'll let him answer that question.

20 A. So short answer is yes, that is because we put
21 monitoring wells in the regional aquifer in the area, the
22 Carney coal seam.

23 Q. (BY MR. POPE) Mr. Barron, you just -- you
24 mentioned regional aquifer. I think that's something that
25 I don't think was clear in previous discussions about the

1 TR-1 area. How large is the TR-1 area compared to the
2 rest of the proposed permit area?

3 A. So if you want to describe the TR-1 area
4 compared to the permit application, the TR-1 area would be
5 this stack of papers on my desk as opposed to this room
6 that would be representative of the permit application
7 area.

8 Q. Do you know, in terms of acres, about how many
9 acres the TR-1 area encompasses?

10 A. Probably covers a quarter of a square mile.

11 Q. And for -- it requires me to do math, so I'm
12 going to avoid that. Can you convert that to acres for
13 us, please?

14 A. Yeah. A hundred acres or so.

15 Q. How many acres are in the permit -- proposed
16 permit area?

17 A. Approximately 4400 acres.

18 Q. Given the relative size of the TR-1 area to the
19 overall permit, what does that mean about the probable
20 hydrologic impacts of the mine in the TR-1 area?

21 A. In the TR-1 area, the mine would have minimal
22 impacts.

23 Q. Let's talk about breaking the seal. That was a
24 question posed both by objectors and by members of the
25 council about the effect of mining in TR-1 area. Can

1 Brook, as part of its reclamation, restore the seal, in
2 effect, restore the hydrologic connection between the
3 upper area of the TR-1 area and lower area?

4 A. We could, yes.

5 Q. How could you do that?

6 A. We could special handle some material. There is
7 clay throughout the permit area, and even in the TR-1
8 area, we could take clay that we have removed and store it
9 separately and then put that clay back in somewhat
10 compacted fashion and reestablish that low permeability
11 zone.

12 Q. In your previous experience with mining
13 operations, have you ever done special handling?

14 A. Yes.

15 Q. Where?

16 A. I've done it in Cordero Mine, Black Thunder
17 Mine, Eagle Butte Mine.

18 Q. Were those special handling efforts successful?

19 A. They were.

20 Q. We're going to put up on the screen the
21 regulation.

22 MR. POPE: Can you zoom into the title,
23 please, Carri?

24 Q. (BY MR. POPE) This is Chapter 2, Section 4 of
25 the coal regulations. I'd like to go to a specific

1 portion that Big Horn Coal discussed up in Sheridan. This
2 section here says that for the proposed permit area, and
3 by extrapolation, adjacent areas, characterization of the
4 geologic strata down to and including the deeper of either
5 of the stratum immediately below the lowest coal seam to
6 be mined, or any aquifer below the lowest coal seam to be
7 mined, which may be adversely impacted by mining. Does
8 the permit application characterize these geologic strata?

9 A. It does.

10 Q. Where?

11 A. You would find those in both Appendix D5 and
12 Appendix D6.

13 Q. Continuing on with this part of the regulation
14 which was discussed by Mr. Gregersen. It then says this
15 information shall include a statement of the results of
16 test borings or core samples which had been collected and
17 analyzed to show, and then subpart A is location of any
18 groundwater. Does the permit application include a
19 statement of the results of test borings or bore samples
20 which had been collected and analyzed to show location of
21 groundwater?

22 A. It does.

23 Q. Where are those?

24 A. Those, again, are in Appendix D5 and Appendix
25 D6.

1 Q. There were some questions by Mr. Gregersen about
2 the lack of test borings or core samples in Sections 15
3 and 22.

4 Mr. Barron, to be very clear, I am not asking
5 you to draw any legal conclusions, interpret the statute.
6 Do you see anywhere -- excuse me, the regulation. Do you
7 see anywhere in this regulation that requires a section-
8 by-section sampling?

9 A. No.

10 Q. Are you aware, in your review of Wyoming
11 statutes or regulations, that requires a section-
12 by-section sampling for test borings in any way?

13 A. No.

14 Q. Let's shift gears for a moment and talk about
15 alluvial valley floors. Going to pull up DEQ
16 Exhibit 12-144. Mr. Barron, do you recognize this as the
17 map that I spoke with Dr. Kuchanur about?

18 A. I do, yes.

19 Q. Does this show the proposed alluvial monitoring
20 wells?

21 A. It does.

22 Q. Where are -- and you have a laser pointer up
23 there, Mr. Barron. Can you please point to where the
24 proposed alluvial monitoring wells are? And if you need
25 us to zoom in, let me know.

1 A. Let's see. Up on the screen, there's one
2 located just south of permit boundary in that location.
3 There's also one south in Section 24. And then -- might
4 need to zoom out. I think there's another one, a third
5 one. There's one at the intersection, right there.

6 Q. Are any of those proposed monitoring wells
7 within the potential AVF acreage we've seen on DEQ
8 Exhibit 16?

9 A. Two of them are.

10 Q. Let's -- I'm going to shift gears here, and I'm
11 going to bounce around on subjects with you, Mr. Barron,
12 so please bear with me. There's a lot of discussion in
13 the previous hearing days about Brook's interaction with
14 the public. Did you ever meet with any members of the
15 public on behalf of Brook Mine?

16 A. I interacted with members of the public at a
17 meeting that the PRBRC held at the public library. I
18 interacted with the public at a county commissioners
19 meeting. I had some interaction with a single individual
20 who called me in reference to the permit application. I
21 also interacted with an older lady who emailed me and had
22 some questions on the permit application. I also
23 interacted -- one resident had a concern that his well
24 wasn't listed in the permit application. We researched
25 that and found that the well was mischaracterized on the

1 SEO database. We corrected the record, offered to study
2 that well for that individual, and we were refused to do
3 that study, but -- several instances I've interacted with
4 the public.

5 Q. If a member of the public had wanted to find out
6 information about the Brook permit application, could they
7 have called you or met with you?

8 A. Throughout the whole permitting process, even
9 before we submitted to DEQ, I maintained an open-door
10 policy.

11 Q. How would someone have known that they should
12 contact you in particular?

13 A. After the submittal -- the initial submittal of
14 the permit application, there was a public notice in the
15 newspaper saying the permit had been submitted to DEQ.
16 The documents held -- had our company name in and amongst
17 those, as well as my name on those documents I signed.

18 Q. Let's talk about well drawdown. We've heard
19 some concerns about the potential impacts of the Brook
20 Mine on domestic wells. In particular, we've heard some
21 discussion about Mr. Buyok's well and Mrs. Fisher's well.
22 I want to talk to you about each of those wells. Are you
23 familiar with information about Mr. Buyok's well?

24 A. The information on his well is, again, stored at
25 the state engineer's office. So, yes, I am aware of that

1 information.

2 Q. What is the predicted drawdown in the area
3 around Mr. Buyok's well?

4 A. With the groundwater model, we did some
5 prediction on drawdowns. The furthest extent is a 10-foot
6 drawdown ring. You can assume at some length beyond that
7 there's a 5-foot drawdown. So in the case of Mr. Buyok,
8 it's assumed that there's somewhere between a 0- and
9 5-foot drawdown.

10 Q. Do you know the height of the water column in
11 Mr. Buyok's well?

12 A. It was listed in the SEO data.

13 Q. What is the height of that water column?

14 A. If I recall, it's about 15 feet from the
15 surface.

16 Q. What is the depth of Mr. Buyok's well?

17 A. I believe his well is about 190 feet deep.

18 Q. We heard some discussion about, you know,
19 locations of pumps in a well and how that could affect
20 drawdown. Do you know the location of the pump in
21 Mr. Buyok's well?

22 A. Mr. Buyok's pump is a couple of feet from the
23 bottom of the well.

24 Q. Based on the information you described from the
25 state engineer's office and the information and

1 predictions in the permit application, what is your
2 opinion about the effect of the Brook Mine on Mr. Buyok's
3 well?

4 MS. ANDERSON: Objection. Again,
5 Mr. Barron is not a hydrogeologist. This is testimony
6 outside his area of expertise.

7 MR. GILBERTZ: I'll join that objection.

8 MR. POPE: Dr. Bagley --

9 CHAIRMAN BAGLEY: Maybe I wasn't paying
10 attention. It sounded like he answered by saying
11 prediction of 0-to-5-foot drawdown of the well. So I don't
12 know what --

13 MR. POPE: He did say that, Dr. Bagley.
14 What I'm getting at, maybe I didn't ask a good enough
15 question.

16 Q. (BY MR. POPE) Perhaps the question, Mr. Barron,
17 may draw the same objections, but I'll give it a try.
18 Based on the information available from the State
19 Engineer's Office and the information available in the
20 Brook permit application, does that data show whether
21 Mr. Buyok will still have water available in his well?

22 MR. ANDERSON: Objection. This data from
23 SEO has nothing to do with the mine. This requires a
24 conclusion that the witness is not qualified to make.

25 MR. POPE: Dr. Bagley --

1 CHAIRMAN BAGLEY: I'm going to actually
2 sustain the objection because I don't believe he can make
3 that answer based on my understanding of the data. As an
4 engineer, he would not want to try to. So move on to
5 another question.

6 MR. POPE: Okay.

7 Q. (BY MR. POPE) Okay. We'll actually shift gears
8 here, Mr. Barron, and talk about Mrs. Fisher's well and
9 we'll probably end up at the same place. And we'll give
10 it a go.

11 Do you know, is there public information about
12 Mrs. Fisher's water wells?

13 A. Yes, there is.

14 Q. Where is that information?

15 A. That is at the State Engineer's Office.

16 Q. Does that information show the depth of
17 Mrs. Fisher's well?

18 A. It does.

19 Q. And I apologize. I've been saying well and
20 wells. How many well or wells does Mrs. Fisher have?

21 A. I'm aware of two.

22 Q. Does the information on the State Engineer's
23 Office website provide information about where the pumps
24 are located in those wells?

25 A. It does. An applicant for a water well with the

1 state has to submit a notice of completion once the well
2 has been drilled, and it has details of both the location
3 of the water column and the pump in the well.

4 Q. Where is the pump in Mrs. -- in the two Fisher
5 wells?

6 A. Again, both wells [sic] are a few feet off the
7 bottom of the well.

8 Q. Does the information on the State Engineer's
9 website contain the depth of those wells?

10 A. It does.

11 Q. Does it show the height of the water column?

12 A. It does.

13 Q. I think we'll draw the same objection, so I
14 won't ask you to render that final opinion. But I would
15 like to talk to you, while we're on the subject of water
16 wells, about recharge. We've heard a little bit about it,
17 but in the context -- in the general context of the permit
18 application, what is recharge?

19 A. So recharge, in the permit application, deals
20 with an aquifer and its ability to receive new waters or
21 waters that are already in the aquifer to fill areas that
22 have been dewatered.

23 Q. Dr. Kuchanur discussed that there's a 10-to-
24 20-year recharge prediction in the permit application.
25 Where is that prediction in the permit application?

1 A. That's found in an addendum within the mine
2 plan.

3 Q. In the context of domestic water wells, why is
4 it important to understand the recharge after mining?

5 MS. ANDERSON: And I'll raise the same
6 objection. This called for a conclusion that the witness
7 is not qualified to make.

8 MR. POPE: Dr. Bagley, he is a professional
9 engineer. He's studied and put together this permit
10 application, including the data about recharge. He's
11 qualified to talk at least on a general level about what
12 that means.

13 CHAIRMAN BAGLEY: Let me hear the question
14 again.

15 MR. POPE: Sure. In the context of
16 domestic water wells, what is the importance of
17 understanding the recharge after Brook mines.

18 CHAIRMAN BAGLEY: Yeah, I think that's
19 appropriate. Go ahead and -- objection noted, but ask the
20 question.

21 A. So in the first sense, we do a prediction to
22 understand what effect and what drawdown we may have on a
23 well. But I want to understand how long before that well
24 will recover. The case of John Buyok's well, where it's a
25 0-to-5-foot drawdown, we would want to know how many years

1 before that comes back.

2 Q. (BY MR. POPE) If I'm a landowner who has a
3 domestic well, based on the data and the permit
4 application, can I figure out how long it will take before
5 the drawdown in my well comes back?

6 A. Yes.

7 Q. We talked about Mr. Buyok. I want to just wrap
8 up on a couple of points about him, clarify some of the
9 testimony in Sheridan.

10 Did Brook require Mr. Buyok to drop his
11 objections when Brook offered to include his house within
12 the half-mile buffer?

13 A. We did not.

14 Q. Were you present when Mr. Buyok expressed
15 concerns about the legal issues surrounding including his
16 house within the half-mile buffer?

17 A. Yes.

18 Q. To your understanding, as a -- as an expert in
19 the permitting process, if Brook includes Mr. Buyok's
20 house within the half-mile buffer in the permit, can he,
21 for example, request a pre-blast survey?

22 A. He could, yes.

23 Q. Why?

24 A. Because he would be -- if we offered and
25 included him in the half-mile boundary, then that becomes

1 an enforceable action by DEQ within the permit document.

2 Q. So we talked pre-blast surveys. Let's shift a
3 little bit and talk about blasting. There was discussion
4 by Mr. Emme that the blasting that the Brook Mine will do
5 is overburden and coal blasting. Have you ever witnessed
6 overburden or coal blasting?

7 A. I have, yes.

8 Q. Where did you witness that?

9 A. Cordero Mine.

10 Q. Do you recall how close you were when you
11 witnessed those blasts?

12 A. Within a thousand feet.

13 Q. We heard a lot of discussion about, you know,
14 what blasting may feel like. As someone who's actually
15 been there, what did that blast feel like?

16 A. It -- to be honest with you, when we were there,
17 I didn't feel the blast more than I observed the blast at
18 the time.

19 Q. Would you clarify for the council what you mean
20 by that?

21 A. I didn't feel a noticeable vibration on the
22 ground, but I did witness a cloud of dust that came up
23 from the blast.

24 Q. Are you familiar with the Wyodak Mine?

25 A. Yes.

1 Q. Where is the Wyodak Mine?

2 A. Near the city of Gillette.

3 Q. How close to Gillette is the Wyodak Mine?

4 A. Immediately adjacent to it.

5 Q. Is it close to I-90?

6 A. It is.

7 Q. Do you know how close?

8 A. Within a few hundred feet.

9 Q. Do they do cast blasting at the Wyodak Mine, to
10 your knowledge?

11 A. Yes.

12 Q. And is cast -- I think we heard some discussion
13 about this, but is cast blasting more powerful than
14 overburden or coal blasting?

15 A. There is more explosive used, and so a general
16 assumption is yes.

17 Q. To your knowledge, given their proximity to
18 I-90, has the Wyodak Mine ever had to shut the interstate
19 down to do cast blasting?

20 MS. ANDERSON: Objection. Relevance. I'm
21 not sure what the practice of some other mine has to do
22 with this permit application.

23 CHAIRMAN BAGLEY: I was wondering when
24 someone would object. Actually, I agree, the Wyodak Mine
25 is out east of Gillette. This one is in Sheridan. The

1 geography, geology, everything can be different.

2 MR. POPE: Understanding that, Dr. Bagley.

3 The point here is there have been, particularly by some of
4 the landowners in the area, concerns about the effect of
5 blasting. In fact, Ms. Malone, in her objection letter and
6 in her direct testimony, discussed closing the interstate
7 what effect would that have on it. This is an example of a
8 mine, coal mine, that uses a more powerful blasting
9 technique closer to inhabited areas, including I-90. It's
10 relevant for the council to compare the effects of blasting
11 at that area to the blasting concerns expressed as part of
12 this hearing.

13 CHAIRMAN BAGLEY: Nah, you have to figure
14 out another way to get at this. I was wondering when
15 someone was going to object, but I let the lawyers figure
16 that out.

17 MR. POPE: Fair enough. I think we can
18 move on from that subject.

19 Q. (BY MR. POPE) Let's talk about subsidence.
20 Dr. Marino discussed his opinions about highwall mining
21 and room and pillar mining and that he believed they were
22 the same. Do you share that opinion?

23 A. I don't believe that they're exactly the same.

24 Q. Why not?

25 A. Mostly because room and pillar has a set of

1 hallways and then perpendicular cuts that are different
2 from highwall mining. Highwall mining is merely just a
3 hallway cut into a coal seam.

4 Q. Does that difference matter in determining the
5 potential risk of subsidence?

6 MS. ANDERSON: Objection. Mr. Barron did
7 not prepare the subsidence control plan for the company.
8 He has no expertise on subsidence prevention or mitigation
9 or assessing that risk, as was discussed in detail in
10 Sheridan.

11 MR. POPE: Dr. Bagley, Mr. Barron is a
12 professional engineer who analyzed the subsidence control
13 plan, who analyzed the subsidence control statutes and
14 regulations --

15 MS. ANDERSON: But he did not put his
16 professional engineer's stamp on the subsidence control
17 plan.

18 MR. POPE: Understanding that, Dr. Bagley.
19 Mr. Barron has already testified that he took training
20 courses on subsidence. This is a very general question
21 about mining methodology and how that relates to
22 subsidence. I'm not asking him to do the hard science.

23 CHAIRMAN BAGLEY: Re -- I want to hear the
24 question again, please.

25 MR. POPE: Sure. Is there a -- is the

1 difference between highwall mining and room and pillar
2 mining important in assessing the risk of subsidence?

3 CHAIRMAN BAGLEY: Yeah. I'll allow that
4 question.

5 A. Yes.

6 Q. (BY MR. POPE) Why?

7 A. In our subsidence control plan, we go through a
8 narrative describing the historic mining subsidence in the
9 area. Outside of retreat mining, where we pull the
10 pillars in areas where the pillars weren't pulled, the
11 subsidence control plan discusses at those intersections,
12 those perpendicular intersects, that's another place where
13 subsidence was likely to occur and did occur. As a matter
14 of fact, the subsidence control plan lists a map with an
15 overlay of historic subsidence compared to a map of the
16 underground mining that took place in that area and
17 describes that very thing happening.

18 Q. Since we're on the subject of subsidence. In
19 your preparation of the permit application, did you review
20 the statutes and regulations concerning the subsidence
21 control plan?

22 A. I did, yes.

23 Q. And what do those statutes and regulations
24 require?

25 MS. ANDERSON: I'm going to -- objection to

1 the extent this calls for a legal conclusion.

2 MR. POPE: Dr. Bagley.

3 MS. ANDERSON: Or to the extent it requires
4 Mr. Barron to interpret subsidence risks or prevention,
5 that he's not qualified to make those conclusions.

6 CHAIRMAN BAGLEY: Let me hear the question
7 again.

8 MR. POPE: I asked him what are the
9 statutes and regulation -- what do the statutes and
10 regulations require for a subsidence control plan?
11 Mr. Barron testified that he is an expert in the permitting
12 process. That was qualified during his direct testimony in
13 Sheridan. He just said that he reviewed these particular
14 statutes and regulations. And at the end of the day, part
15 of what this hearing is about is measuring what's in the
16 permit application against what is in the statutes and
17 regulations. It is an unavoidable question, both for the
18 council and the witnesses, about what does that require?

19 MS. ANDERSON: Well, it's not our fault
20 they don't have Cardno and their consultants who actually
21 prepared --

22 CHAIRMAN BAGLEY: I've heard your
23 objection. And the question really, to me, can be a list
24 of things that are in a regulation and not a legal opinion.
25 I'll allow this question.

1 Q. (BY MR. POPE) Do you need me to repeat the
2 question?

3 A. Please.

4 Q. Okay. What are the -- what does Wyoming
5 statutes and regulations require for a subsidence control
6 plan?

7 A. They're very brief and they require that a
8 subsidence control plan be submitted.

9 Q. I'd like to clarify something that Dr. Marino
10 discussed, and that's the extraction ratios in the permit
11 application. The phrase that was brought up was coal
12 recovery efficiency as 45 to 60 percent. Do you recall
13 that testimony?

14 A. I do, yes.

15 Q. As the person who prepared the permit
16 application, does that in any way refer to extraction
17 ratios?

18 A. It directly relates to it.

19 Q. How so?

20 A. In the permit application, the recovery
21 efficiency is also the extraction ratio. Dr. Marino went
22 on to describe as a recovery efficiency loss of coal
23 during the mining process. You might have some fines that
24 are lost, but in the permit application that's not what
25 that's describing.

1 Q. So is it -- just want to make sure everyone's on
2 the same page on this. Does Brook plan to have an
3 extraction ratio of 45 to 60 percent?

4 A. I believe it's 40 to 60 percent, but yes.

5 Q. Thank you for that clarification.

6 There's been a lot of discussion by Dr. Marino
7 about ground control plan versus subsidence control plan
8 and why work wasn't done in certain places. Why is it
9 that the Brook Mine decided to do the engineering
10 Dr. Marino discussed in these ground control plan rather
11 than the subsidence control plan?

12 MS. ANDERSON: And I would just raise an
13 objection that he's asked to give an opinion on behalf of
14 the company. He doesn't actually work for the company.

15 MR. POPE: He prepared the permit
16 application. He was the permit coordinator for the Brook
17 Mine. He was the ultimate decision maker in terms of how
18 the permit was going to be put together. This is a
19 question of why those decisions were made.

20 CHAIRMAN BAGLEY: Can I hear that question
21 again?

22 MR. POPE: Sure. The question is why did
23 Brook, in preparing its permit application, decide to do
24 the engineering work that Dr. Marino discussed as part of
25 the ground control plan rather than the subsidence control

1 plan?

2 CHAIRMAN BAGLEY: Yeah. I don't think he
3 can answer that question. Rephrase it. I mean, you asked
4 why did Brook.

5 MR. POPE: I'll lay some foundation before
6 I get to that question. I think that might help us.

7 Q. (BY MR. POPE) Mr. Barron, did you -- were you
8 involved in the decision-making process about how to
9 engineer for the risks of subsidence?

10 A. Yes.

11 Q. Were you involved in decisions related to doing
12 engineering studies as part of a ground control plan?

13 A. Yes.

14 Q. Were you involved in decisions about doing that
15 work in the ground control plan rather than in the
16 subsidence control plan?

17 A. Yes.

18 Q. Why, based on your experience in that
19 decision-making process, did -- is the engineering work
20 going to be done as part of the ground control plan rather
21 than the subsidence control plan?

22 A. In this case, it was a -- a question of
23 permitting efficiency. And so because the regulations
24 required the submittal of a subsidence control plan, but
25 doesn't have a lot of detail on what that required, we, in

1 essence, wanted to kill two birds with one stone and put
2 the detail in the ground control plan that already
3 requires a great level of detail, and then we could add to
4 that as necessary for the permit application.

5 Q. Will you be involved in preparing the MSHA
6 ground control plan?

7 A. Yes.

8 Q. What were your -- what will your role be?

9 A. My role in preparing the ground control plan
10 will be conducting all of the studies, the geotechnical
11 engineering surrounding the ground control plan, and
12 likely I'll be assigning the document.

13 Q. As part of doing those geotechnical studies,
14 will there be an analysis how to create a ground control
15 plan to prevent subsidence?

16 A. Yes.

17 Q. Why?

18 A. One, it's a requirement of the ground control
19 plan. As far as -- if you connect the dots between
20 addressing the factor of safety surrounding the mining in
21 the area and relate it to subsidence, and certainly
22 because the permit application, we'll want to bolster
23 that. So we will connect the dot, from just the factor of
24 safety to miners, back to subsidence for the permit
25 application.

1 Q. There is some discussion by Dr. Marino about
2 short term versus long term. How does what you just said
3 relate to a short term versus long term?

4 A. Dr. Marino pointed out that the 1.3 factor of
5 safety is a short-term factor of safety. And in the
6 effort to kill two birds with one stone, and Dr. Marino
7 went through a description of several times of factors of
8 safety from 1.5 to 2.0 that could be a long-term factor of
9 safety, those would be included in the permit -- or in the
10 ground control plan and subsequently included in the
11 permit application.

12 Q. So just so we're clear, will Brook engineer its
13 ground control plan for both the short and the long term?

14 A. Yes.

15 Q. There was discussion about a minimum required
16 safety factor of 1.3. Do you recall that?

17 A. Yes.

18 Q. Can Brook, as part of the ground control plan,
19 engineer a higher safety factor?

20 A. Yes.

21 Q. Will Brook?

22 A. For the short term, we will stick with the 1.3
23 factor of safety. But as we investigate each one of these
24 panels and it's determined that it needs to be larger,
25 then we will certainly make it larger.

1 Q. Let's talk about the ARMPS program for a moment.
2 I want to clarify a few things with you. Are you familiar
3 with the ARMPS program?

4 A. I am, yes.

5 Q. How so?

6 A. I've got a version of it on my computer at my
7 office.

8 Q. Have you used the program?

9 A. I have.

10 Q. There was discussion about the ARMPS program and
11 how it relates to subbituminous and bituminous coal. Can
12 you clarify how the program works in regards to those two
13 types of coal?

14 A. So the program has in it a list of default
15 values that you can use. And depending on the coal, you
16 can pick strength parameters based on default values. So
17 in the case of subbituminous coal, there's -- I think
18 there may be one or none in the program, if I remember
19 right, on subbituminous coals as far as its strength
20 parameters, is it a default value in the program.

21 Q. In preparing the ground control plan, will you
22 rely on those default values?

23 A. No. We'll use tested values from the field.

24 Q. Let's talk about the permitting process at a
25 broader level. Were you present when several witnesses in

1 Sheridan suggested that they wished the permitting process
2 had more protection for landowners?

3 A. Yes.

4 Q. Do you agree that the permitting process does
5 not protect landowners?

6 A. No.

7 Q. Why not?

8 A. So when SMCRA was passed and then Wyoming
9 adopted those rules to obtain primacy, one of the primary
10 objectives of the rulemaking that the lawmakers did was to
11 protect landowners.

12 Q. Can you give us some specific examples of either
13 statutory or regulatory requirements that protect
14 landowners?

15 A. One is a discussion on, you know, do we
16 materially damage an area? And we have to study that and
17 offer those protections outside the permit boundary.
18 Those are discussed in the legislation and in the rules.

19 Q. We heard a lot about the Brook Mine commitment
20 to replace water quality and water quantity. Do you
21 believe that's another landowner protection?

22 A. Yes.

23 Q. While we're on the subject of permit
24 commitments, there's been allegations, and, frankly, sort
25 of the undercurrent of this entire hearing about whether

1 Brook will live up to those commitments. I want to talk
2 to you about a couple specific ones. The first is there
3 was an allegation made that Brook could take more coal out
4 of the ground than what is stated in its application. Do
5 you remember that?

6 A. I do.

7 Q. Is that true?

8 A. No.

9 Q. Why not?

10 A. One, we have put forth a permit application to
11 describe exactly what we're going to do. We live under
12 the oversight of DEQ. And although we don't report to
13 them on a daily basis, the mine will collect records of
14 extraction on a daily basis. And at any time DEQ can view
15 those and establish whether we're doing what we said we
16 were going to do.

17 Q. Does the mining equipment that Brook intends to
18 use assist in the collection of that data?

19 A. It does. It collects data minute by minute as
20 it mines.

21 Q. Will that data be available to DEQ?

22 A. Yes.

23 Q. I have to ask you a question general -- general
24 statement here, Mr. Barron. You prepared this permit
25 application. You have interacted with the represent --

1 the company representatives of Brook. Will Brook follow
2 the permit commitments in its permits application?

3 MS. ANDERSON: Objection. That's complete
4 speculation. Again, Mr. Barron does not work for the
5 company. He will not be doing actually the mining. He
6 will not be the mine plan manager. He cannot speak to
7 this.

8 CHAIRMAN BAGLEY: I agree. That's -- how
9 would he know? That is very speculative.

10 MR. POPE: Okay. Unfortunately that means
11 we'll have to call another witness, but so be it.

12 Q. (BY MR. POPE) Mr. Barron, there is a board
13 behind you. I want to turn to that board in just a
14 second. But Brook has a burden of proof in this hearing.
15 And in particular one of the things that Brook has to
16 demonstrate is that everything in the statutes and
17 regulations is included within the permit application.
18 Are you aware of a document that DEQ publishes that
19 explains what must be in a permit application?

20 A. I am, yes.

21 MR. POPE: Dr. Bagley, permission to
22 approach the witness.

23 CHAIRMAN BAGLEY: Yes.

24 Q. (BY MR. POPE) Mr. Barron, I've just handed you
25 a document. What is that document?

1 A. This document is the completeness criteria as
2 published by DEQ.

3 Q. Are you familiar with this document?

4 A. Very.

5 Q. How so?

6 A. I use this document on a regular basis in
7 preparing permit applications, amendments on substantial
8 revisions.

9 Q. What does this document explain?

10 A. This document is a list of what is required for
11 a permit application to mine coal in the state of Wyoming.

12 Q. Does the completeness criteria indicate what
13 statutes and regulations require certain parts to be in a
14 permit application?

15 A. It does. In the back of this document, I think
16 Section 4 cross-references all of the requirements to
17 Wyoming statutes, rules and regulations.

18 MR. POPE: Dr. Bagley, we would offer this
19 into evidence as Brook I think we're at 15.

20 MR. RUBY: Do you have a marked copy?

21 MR. POPE: No.

22 CHAIRMAN BAGLEY: Any objection --

23 MR. POPE: I'm sorry. Brook 14.

24 CHAIRMAN BAGLEY: Any objection?

25 MS. BOOMGAARDEN: No objection.

1 CHAIRMAN BAGLEY: All right. Accepted.

2 (Brook Mine Exhibit No. 14

3 received in evidence.)

4 MR. POPE: We'll mark that in just a
5 moment.

6 MR. RUBY: What is the number? 14.

7 MR. POPE: 14.

8 Q. (BY MR. POPE) Mr. Barron, what is the date of
9 the completeness criteria?

10 A. August of 1995.

11 Q. So we were just talking it includes
12 cross-references to statutes. Are the statutes referenced
13 in Section 4 the most recent versions of statutes and
14 regulations?

15 A. They are not in some cases.

16 Q. So how, in using this completeness criteria, do
17 you account for that difference?

18 A. So I regularly go to the legislative website and
19 cross-check for updated rules and regulations as they
20 compare this document.

21 Q. You mentioned that the completeness criteria
22 explains what must be in a permit application. Does the
23 Brook permit application mirror the requirements contained
24 in the completeness criteria document?

25 A. It does.

1 Q. Does it follow the same structure as what's in
2 the completeness criteria document?

3 A. It does.

4 Q. Are you aware that DEQ conducts a completeness
5 review of a permit application?

6 A. Yes, I am.

7 Q. What is a completeness review?

8 MS. BOOMGAARDEN: Objection.

9 MR. GILBERTZ: I'm going to -- yeah. Go
10 ahead.

11 MS. BOOMGAARDEN: Dr. Bagley, one, I think
12 we're well beyond the scope of rebuttal. And, second, the
13 completeness determination by DEQ is not the same as the
14 technical adequacy determination that is at issue under the
15 regulations and statutes here. And, thirdly, I think we're
16 getting into an area where it's prejudicial to the other
17 parties because they're asking this witness to essentially
18 provide an oral closing.

19 MS. ANDERSON: Right.

20 MS. BOOMGAARDEN: That none of the other
21 parties have been allowed to provide.

22 MR. POPE: Dr. Bagley.

23 MS. BOOMGAARDEN: I believe there's another
24 objection.

25 MS. ANDERSON: We would join in that

1 objection, just to put it on the record. That's exactly
2 what I was going to say.

3 MR. GILBERTZ: I'll refer to that to say
4 this is supposed to be rebuttal. No other witness has
5 talked about this document. It's not rebuttal. Again,
6 it's just an effort to backfill the prior testimony and
7 also perform some form of closing --

8 MS. ANDERSON: Yeah.

9 MR. GILBERTZ: -- that the other parties
10 aren't going to get. So, yeah, I object too.

11 MS. ANDERSON: Yeah.

12 MR. POPE: Dr. Bagley, the objector's case
13 has been the permit application is deficient. This
14 document speaks to the technically adequate, and, as we
15 heard from Dr. Kuchanur, the accuracy and completeness,
16 which is a statutory requirement. And, yes, part of this
17 does speak to our burden of proof. That's the whole point
18 of having this hearing to have that discussed. We are
19 discussing that burden of proof as it applies to the
20 objections that have been raised, and we are going to rebut
21 those specifically. But for the council's benefit, we want
22 to explain the completeness process as Mr. Barron
23 understands it.

24 MS. ANDERSON: And that is something they
25 can do --

1 CHAIRMAN BAGLEY: Just a minute.

2 MS. ANDERSON: -- post hearing.

3 CHAIRMAN BAGLEY: Let me rehear the
4 question.

5 MR. POPE: The question was, what -- does
6 DEQ conduct a completeness review of the permit
7 application.

8 CHAIRMAN BAGLEY: Yeah, this isn't a DEQ
9 witness, so I agree. We'll sustain the objections as need
10 to.

11 Q. (BY MR. POPE) Let's turn to the board behind
12 you, Mr. Barron. Do you recognize that board?

13 A. Yes.

14 Q. How do you recognize that board?

15 A. I helped prepare it.

16 Q. All right. At the top it says "406(n) states in
17 part." I'd like to turn to the first romanette, that the
18 application is accurate and complete. There's a chart
19 under there. What is that chart?

20 A. That chart contains a list of some of the pieces
21 that are listed in the completeness criteria. And then it
22 further, in the blue letter text, describes where in the
23 permit applications those can be found.

24 MR. GILBERTZ: I'm going to weigh in again
25 with an objection. Rebuttal is a very specific thing, and

1 that is the ability to have witnesses recalled to address
2 something that was presented by these other parties during
3 their cases in chief. And so I know what Mr. Pope is going
4 to say, we have a right to come in and defend that we have
5 a complete permit, but at this point in time, that right is
6 limited to responding to criticisms directly that were made
7 by the objectors and their presentations of their case in
8 chief, not an opportunity to go back and revisit the entire
9 plan and do a second go at why this is complete. It needs
10 to be restricted to responding to the evidence presented by
11 the objectors. And this is just an overall, we're going to
12 talk about everything again, we're not going to talk about
13 the specifics. If they got specific questions, that's
14 okay. And I got to say, this is just a very clever way to
15 try to do a closing argument when there isn't one allowed,
16 so I object.

17 MS. BOOMGAARDEN: I join in that objection.

18 MR. GILBERTZ: It's not rebuttal.

19 MS. ANDERSON: Yeah. And we would ask --

20 CHAIRMAN BAGLEY: One objection, two
21 objection, three objection.

22 Mr. Agopian, you had a comment you'd like to
23 make.

24 COUNCIL MEMBER AGOPIAN: It seemed like
25 yesterday -- I might ask if I can just look at the

1 PowerPoint that's sitting here on the table.

2 CHAIRMAN BAGLEY: You may.

3 COUNCIL MEMBER AGOPIAN: Seems like I
4 recall yesterday's presentation or PowerPoint identified
5 406(n) as being one of the main concerns that the Powder
6 River Basin Resource Council put with the Doctor's
7 testimony, that he identified on numerous occasions that he
8 was concerned about subsection (n).

9 MS. ANDERSON: You might be confusing
10 Dr. Marino with Mr. Wireman, but...

11 COUNCIL MEMBER AGOPIAN: Okay. That was
12 still your -- your witness and it was still in that
13 presentation, so...

14 When I see 406(n) up there, and we're talking
15 about rebuttal, I fail to see what the objection is in
16 their rebuttal.

17 MS. ANDERSON: And you can -- if it's
18 limited to the scope of what we talked about yesterday and
19 specific as Mr. Gilbertz said --

20 CHAIRMAN BAGLEY: Okay. So --

21 MS. ANDERSON: -- we'll see those
22 questions, but --

23 CHAIRMAN BAGLEY: Let's hear what Mr. Pope
24 has to say.

25 MR. POPE: Dr. Bagley, as general

1 principle, I don't disagree that rebuttal should be limited
2 to the evidence presented. The reason I asked Mr. Barron
3 that previous question and the answer that ensued, that
4 table is limited to the areas of objections and as those
5 apply to the accurate and completeness of the Brook permit
6 application.

7 We only intend, with this chart, to discuss areas
8 that were brought up by objectors as part of this hearing.
9 So that is proper rebuttal.

10 CHAIRMAN BAGLEY: So I'll let the lawyers
11 argue about what belongs in rebuttal and what doesn't,
12 since I'm not trained in the law. What I don't want to
13 hear is complete rehash all of this. This is the seventh
14 day. I've got a pretty good handle on what is and is --
15 has not been done. And I'm beginning to think that folks
16 are trying to waste my time. So that by itself is -- is
17 troublesome.

18 Let's keep -- I'm going to allow you to talk
19 briefly about this, but we need to keep it very short
20 because I have seen a lot of presentation of evidence from
21 everybody on all of these issues. I don't need to hear it
22 all again. I don't really need to hear too much more
23 again. In fact, I don't think I need to hear any more
24 again, but allow you to go ahead.

25 MR. POPE: I appreciate that, Dr. Bagley.

1 We will not rehash anything. I think Ms. Svec will poke me
2 if I get anywhere close to that.

3 Q. (BY MR. POPE) Mr. Barron, in the interest of
4 efficiency, does that chart identify areas that have been
5 objected to in the permit application?

6 A. Yes.

7 Q. What is the blue ink in that chart -- what does
8 the text in the blue ink tell someone looking at that
9 chart?

10 A. That that's where you can find those components
11 addressed in the permit application.

12 Q. All right. Mr. Barron, we were going to have
13 you check some boxes, but we are not going to do that.

14 CHAIRMAN BAGLEY: That's good.

15 MR. POPE: Mr. Sutphin will be terribly
16 disappointed, but not going to do that.

17 Q. (BY MR. POPE) To wrap up with you, are you
18 aware of any permit conditions that have been suggested by
19 the objectors that in your opinion is required to make the
20 Brook permit application accurate and complete?

21 A. No.

22 MR. POPE: No further questions.

23 CHAIRMAN BAGLEY: Thank you.

24 MR. POPE: Actually, before I yield the
25 floor, we would offer that as a demonstrative exhibit,

1 Brook D15.

2 MR. RUBY: Mark it.

3 CHAIRMAN BAGLEY: All right. Any concerns?

4 MS. ANDERSON: Can we put a D on there?

5 MR. POPE: Yeah, D-15.

6 CHAIRMAN BAGLEY: Yeah, D15.

7 MR. GILBERTZ: No objection to it being
8 received as demonstrative.

9 CHAIRMAN BAGLEY: All right. Accepted.

10 (Brook Mine Exhibit No. D15
11 received in evidence.)

12 CHAIRMAN BAGLEY: All right. Thank you,

13 Mr. Pope.

14 Mr. Kuhlmann.

15 MR. KUHLMANN: I don't think we have any
16 questions.

17 CHAIRMAN BAGLEY: All right. Thank you.

18 Mr. Gilbertz.

19 MR. GILBERTZ: I have no questions for this
20 witness.

21 CHAIRMAN BAGLEY: Thank you.

22 Ms. Boomgaarden.

23 MS. BOOMGAARDEN: Thank you. Just a few.

24 CROSS-EXAMINATION

25 Q. (BY MS. BOOMGAARDEN) Good morning, Mr. Barron.

1 A. Good morning.

2 Q. We can agree, can't we, that the TR-1 area is
3 that area of the confluence of Goose Creek and the Tongue
4 River?

5 A. Yes.

6 Q. And we can also agree that the TR-1 area is the
7 first area that Brook intends to mine?

8 A. Yes.

9 Q. Can you please tell me where in the permit
10 application it describes, as you testified this morning,
11 how Brook can use special handling to fix the seal?

12 A. There's not a discussion specifically on the
13 seal, but we do have the ability to special handle
14 material.

15 Q. And we can agree, I believe, based on body of
16 testimony at this hearing, that the geologic strata across
17 the permit area is not homogenous; is that correct?

18 A. That's correct.

19 Q. Can you tell me where in Appendices D5 and D6
20 each of the heterogenous characteristics were sampled and
21 analyzed?

22 A. If they were found in the addendum to those
23 appendices.

24 Q. And same two questions I asked Dr. Kuchanur.
25 Did you rely on a definition in the Wyoming Environmental

1 Quality Act to determine what the phrase "technically
2 adequate" means?

3 MR. POPE: I'm going to object to that.
4 We've established the technically adequate is a DEQ term,
5 as the council ruled, he's not a DEQ witness.

6 MS. BOOMGAARDEN: I disagree. I don't
7 think anybody has said it's a DEQ term. Dr. Kuchanur said
8 he couldn't recall relying on anything, and he asked --
9 answered Mr. Pope's question on redirect. This is a
10 different witness, and who, as we know, has been charged
11 with responsibility for developing this permit application.
12 I'd like to know whether he relied on a definition.

13 MS. ANDERSON: And it's the very subject of
14 this hearing, I would just add.

15 CHAIRMAN BAGLEY: Can I hear the question
16 again?

17 MS. BOOMGAARDEN: Yes. Did you rely on a
18 definition from the Wyoming Environmental Quality Act to
19 determine what the phrase "technically adequate" means?

20 CHAIRMAN BAGLEY: Yeah, I'll allow that
21 question.

22 MS. BOOMGAARDEN: Thank you.

23 A. No.

24 Q. (BY MS. BOOMGAARDEN) Thank you.

25 A. Technically acc --

1 Q. Thank you.

2 Did you rely on definition in the Land Quality
3 Division rules and regulations to determine what the
4 phrase technically adequate means?

5 A. No.

6 MS. BOOMGAARDEN: Thank you. No further
7 questions.

8 CHAIRMAN BAGLEY: Thank you,
9 Ms. Boomgaarden.

10 Ms. Anderson.

11 MS. ANDERSON: Thank you, Dr. Bagley.

12 CROSS-EXAMINATION

13 Q. (BY MS. ANDERSON) I just have a few questions
14 for ya, Mr. Barron. Good aft -- good morning. I think
15 it's still morning.

16 A. I hope it's not afternoon.

17 Q. Okay. You talked a little bit about Mr. Buyok's
18 house and the half-mile buffer around the permit boundary.
19 And there is -- you testified to a commitment made by the
20 company and maybe yourself directly on behalf of the
21 company, that, you know, you kind of fudged the line a
22 little bit and allowed Mr. Buyok's house within that
23 buffer, right?

24 A. We've made no such commitment at this time.

25 Q. Okay. So it's -- it's not currently in the

1 permit application at this time to allow Mr. Buyok's house
2 to be considered for the purposes of the law, really,
3 within that half-mile buffer?

4 A. No.

5 Q. Okay. You testified a little bit to the idea
6 that, you know, you're waiting for the ground control plan
7 from MSHA because you wanted to kill two birds with one
8 stone. I think that was your testimony, right?

9 A. No. We're not waiting on a ground control plan
10 from MSHA.

11 Q. Okay. So did you testify that, you know, you're
12 trying to kill two birds with one stone here?

13 A. Yes.

14 Q. What did you mean by that if there's not a
15 ground control plan right now for this permit application
16 and all this stuff up here on the chart?

17 A. A ground control plan does not need to be
18 submitted as part of this permit application for DEQ.

19 Q. Okay. But it's -- how are you relying on it,
20 then, for the subsidence control plan?

21 A. Rephrase the question, please.

22 Q. Yeah. So you were saying that the ground
23 control plan is killing two birds with one stone. I'm
24 assuming that the two birds are both the ground control
25 plan and the permit application, right?

1 A. No.

2 Q. So what are the two birds?

3 A. So the two birds are on the discussion of
4 subsidence. The permit application has a subsidence
5 control plan. DEQ has made a request of some additional
6 information for mining in a specific area. The ground
7 control plan is for each specific panel. And there is a
8 ground control plan that will need to be submitted for
9 each individual panel. So we have committed in the permit
10 application to provide that data when we submit the ground
11 control plan. It's reviewed by MSHA and then approved and
12 that becomes part of the permit application. So the
13 additional detail that DEQ requested as part of its
14 technical review of the permit, we have committed to
15 providing, and they have found that response adequate.

16 Q. Okay. Just to be very clear, it's not part of
17 the permit application right now?

18 A. No.

19 Q. Okay. And when that additional data is
20 submitted to DEQ, will the public have a chance to review
21 this data and information?

22 A. Once it's submitted to DEQ, it becomes part of
23 the public record and any one of the public can review it
24 at any time.

25 Q. Are you aware there will be major or minor

1 modification to the permit?

2 A. My general sense is it will probably be a minor
3 modification to the permit.

4 Q. So that doesn't mean there's -- so does that
5 mean there won't be an opportunity for objections and
6 comments officially into DEQ from the public?

7 MR. POPE: Objection. That's a question of
8 DEQ processes, and it's also not part of what he discussed
9 on direct. He's not a DEQ person, so he can't speak to
10 that specifically.

11 CHAIRMAN BAGLEY: Yeah, I agree. Since
12 he's not DEQ, he wouldn't know.

13 MS. ANDERSON: Okay. That's fine.

14 Q. (BY MS. ANDERSON) Mr. Barron, have you prepared
15 any other ground control plans for MSHA permits?

16 A. Yes.

17 Q. For highwall mines specifically?

18 A. No.

19 Q. So this would be the first one that you would
20 do --

21 A. Yes.

22 Q. -- for highwall mine?

23 Okay. I have a somewhat technical question.
24 What difference in the stability calculations are made
25 from more conventional and highwall versus room and pillar

1 mines, and what are those differences?

2 MR. POPE: Objection, Dr. Bagley. This is
3 what was objected to on direct, that he isn't a subsidence
4 control expert. Those questions, when I asked them, were
5 not allowed. It wouldn't be fair to allow those kinds of
6 technical questions now on cross.

7 CHAIRMAN BAGLEY: Could I hear the question
8 again?

9 MS. ANDERSON: So my question -- I may ask
10 a different question, just to clear this all up.

11 CHAIRMAN BAGLEY: Okay.

12 MS. ANDERSON: And I appreciate what
13 Mr. Pope just said. That actually is interesting.

14 Q. (BY MS. ANDERSON) Okay. Mr. Barron, did you
15 perform the ARMPs calculations for this permit
16 application?

17 A. I did not.

18 Q. You did not. Okay.

19 Oh, okay. And if you didn't, why weren't these
20 calculations provided for review in the permit
21 application?

22 A. Those calculations will be part of the ground
23 control plan. They have not yet been conducted.

24 MS. ANDERSON: Okay. Just give me one
25 moment to consult.

1 Q. (BY MS. ANDERSON) Mr. Barron, do you know if
2 the ARMPs program determines floor and roof stability?

3 A. I do not believe that it does.

4 MS. ANDERSON: Okay. Thank you. I think
5 that is all the questions we have.

6 CHAIRMAN BAGLEY: All right. Thank you,
7 Ms. Anderson.

8 Council, any questions?

9 COUNCIL MEMBER AGOPIAN: I have none.

10 CHAIRMAN BAGLEY: I do have a question.

11 EXAMINATION

12 Q. (BY CHAIRMAN BAGLEY) So, Mr. Barron, you
13 mentioned at different times you had -- you were available
14 to the public. Did you or -- or Brook Mine host any
15 informational meetings with the public as part of the --
16 while this process was going on? While the mine permit
17 application was being prepared?

18 A. I did not.

19 Q. Are you aware if Brook Mine did?

20 A. I am not aware.

21 CHAIRMAN BAGLEY: Okay. All right. Thank
22 you. That was all the questions I had.

23 Mr. Pope.

24 MR. POPE: I have no redirect questions.

25 CHAIRMAN BAGLEY: All right. Well, thank

1 you, Mr. Barron.

2 THE WITNESS: Thank you.

3 CHAIRMAN BAGLEY: Step down.

4 Let us take a 10-minute break. Be back at 11:10.

5 (Hearing proceedings recessed

6 10:59 a.m. to 11:09 a.m.)

7 CHAIRMAN BAGLEY: Mr. Pope, do you have any
8 other witnesses?

9 MR. POPE: Brook Mine rests.

10 CHAIRMAN BAGLEY: Oh. Thank you. Good.

11 So I want to thank everybody for the
12 presentations and the time and effort everybody has put
13 into this.

14 So due to the length and complexity of this case,
15 it has been pretty long, I am going to have parties prepare
16 written proposed findings of fact and conclusions of law
17 instead of doing oral closings.

18 It's my understanding that the transcript will be
19 ready sometime around the end of June. We don't know the
20 exact date, but that's the time frame we're looking at. So
21 the parties will have 20 calendar days after notification
22 by council staff that the transcript is available to file
23 their proposed findings and conclusions of law, and there
24 may also be additional information requested. I'll get to
25 that in a minute.

1 We will issue an order notifying the parties the
2 transcript is available and the order will contain the
3 filing date for the findings of fact and conclusions of
4 law. Those documents we're expecting to be in the order of
5 40 pages. We will finalize that in detail in a minute as
6 I'll explain.

7 Proposed findings of fact and conclusions of law
8 should be focused on the law that is applicable to this
9 case, which includes citations to the specified -- specific
10 legal requirements, statutes and rules that the council's
11 required to consider to decide this matter.

12 The proposed findings of fact and conclusions of
13 law must also include necessary facts cited to in the
14 transcript to support your legal conclusions. Because
15 there was also testimony about possible permit conditions
16 or changes, the proposed findings of facts and conclusions
17 of law should also identify suggested changes or conditions
18 that a party requests the council to consider and the legal
19 grounds for such a condition to be part of that permit.

20 Now as we've been listening, the council does --
21 has had some additional questions that we've come up with.
22 We will be preparing an order on this briefing to be
23 submitted to you early next week. And that will clarify
24 some of the additional questions that we have that we will
25 be requesting you to brief us on. So that will be

1 available early next week. We have to finalize that
2 document.

3 And in that we will also further clarify, like I
4 said, pages and things, and was thinking in the order of
5 40 pages. I was told one page was not long enough. So you
6 have a little longer than that. So I guess the short
7 answer is you might be able to take tomorrow off and wait
8 until early -- but that's up to you.

9 Because all the council members were not present
10 to hear all the evidence in this case during the entire
11 final hearing, those council members will have to read and
12 review all of the evidence, including the transcript, upon
13 it being done, and/or listen to the audio-video recording
14 of the hearing.

15 I believe Mr. Agopian wanted to see it all live,
16 so here he has been watching it live. It's always better
17 live, right there.

18 COUNCIL MEMBER AGOPIAN: Wouldn't have
19 missed it.

20 CHAIRMAN BAGLEY: This matter shall remain
21 open until the proposed findings of fact and conclusions of
22 law have been filed with the council, and the council has
23 had an opportunity to read them.

24 We will target our August meeting for final
25 deliberations and vote on this matter. If we can do that

1 earlier, we will. And, of course, we will let all parties
2 know.

3 At the time of deliberations, at that point we
4 will be closing the hearing. But it is not closed now.
5 And the meeting date for those who are trying to plan is
6 currently for the first week in August. We have another
7 meeting schedule. The exact dates of that are still being
8 finalized, but that is when we are targeting to be able to
9 also finalize -- finalize this.

10 Are there any final questions?

11 Yes, Mr. Kuhlmann.

12 MR. KUHLMANN: Mr. Hearing Officer. Thank
13 you.

14 DEQ has thought about the idea of proposed
15 conditions and appreciates the council inviting those. And
16 we have suggested, you know, some revisions ourselves
17 through a proposed change. One thing we were concerned
18 about is making sure that the proposed changes that the --
19 or the conditions that the council might accept and place
20 upon the permit would be ones that we can enforce, that are
21 practical, and also we have legal authority as DEQ to
22 enforce.

23 And, therefore, not trying to create significant
24 amount of additional filings or paper, we would ask that
25 the council build into this process an ability for the

1 parties to comment to the council at some point, in some
2 form, comment prior to the council approving changes, if
3 necessary -- you know, if necessary, if there are concerns
4 about the practicality of those conditions, improvements in
5 the wording of those conditions, or just general concern
6 there's not a legal authority to enforce those conditions.

7 I would like to say the DEQ would just provide
8 those comments, but I'm certain that the other parties are
9 also interested in trying to have a say in that. So we'd
10 ask that for all parties.

11 CHAIRMAN BAGLEY: All right. Thank you for
12 that comment. I'll take that under advisement. And since
13 the hearing is still open, as we continue forward, we'll
14 examine that -- the potential for that. Thank you for
15 bringing that forward.

16 Any other questions? Thank you, all, for your
17 patience. This hearing is recessed.

18 (Hearing proceedings recessed

19 11:16 a.m., June 8, 2017.)

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C E R T I F I C A T E

I, KATHY J. KENDRICK, a Registered Professional
Reporter, do hereby certify that I reported by machine
shorthand the foregoing proceedings contained herein,
constituting a full, true and correct transcript.

Dated this 30th day of June, 2017.


KATHY J. KENDRICK
Registered Professional Reporter



From: Wyoming Reporting Services, Inc.
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Subject: E-Transcript & PDF of the EQC Hearing Proceedings Re: Brook Mine, Volume V, Taken 5/26/17
Date: Thursday, June 29, 2017 8:05:55 AM
Attachments: [Brook Mine, LLC - Vol. V.ptx](#)
[052617 EQC brook mine vol v.pdf](#)

Attached are the E-Transcript & PDF of the EQC Hearing Proceedings Re: Brook Mine, Volume V, Taken 5/26/17.

Thank you,

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1 BEFORE THE ENVIRONMENTAL QUALITY COUNCIL

2 STATE OF WYOMING

3 -----

4 IN RE BROOK MINE APPLICATION Docket No. 17-4802

5 -----

6

7 TRANSCRIPT OF HEARING PROCEEDINGS

8 VOLUME V

9

10 PURSUANT TO NOTICE duly given to all parties
11 in interest, this matter reconvened for hearing on the
12 26th day of May, 2017, at the approximate hour of
13 8:30 a.m., at the Sheridan College, Thorne-Rider Campus
14 Center, Room TRCC 008, 3059 Coffeen Avenue, Sheridan,
15 Wyoming, before the Wyoming Environmental Quality Council,
16 with Chairman David Bagley, presiding, and Council Member
17 Meghan Lally, Council Member Nick Agopian and Council
18 Member Deb Baumer in attendance.

19 Mr. McKenzie Williams, Wyoming Attorney
20 General's Office, Attorney for the Council; Mr. Jim Ruby,
21 Executive Director to the Council; Mr. Joe Girardin,
22 Business Office Coordinator, were also in attendance.

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A P P E A R A N C E S

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1 P R O C E E D I N G S

2 (Hearing proceedings reconvened

3 8:30 a.m., May 26, 2017.)

4 CHAIRMAN BAGLEY: All right. Good morning.

5 It is 8:30 a.m., May 26, 2017. I'm Dr. David Bagley, the
6 hearing officer in Docket 17-4802 in regards to Brook Mine,
7 LLC.

8 Present today from the council are Meghan Lally,
9 Nick Agopian, Deb Baumer. Megan Degenfelder and
10 Tim Flitner are absent. Councilman Fairservis has recused
11 himself.

12 Parties present today, I will allow them to
13 introduce themselves. We'll just go in the same order
14 we've been going. So start with Brook Mine.

15 MR. SUTPHIN: Good morning, Dr. Bagley.
16 Thank you. Isaac Sutphin, Jeffrey Pope and Tom Sansonetti
17 from Holland & Hart.

18 CHAIRMAN BAGLEY: Thank you.

19 DEQ.

20 MR. LAROCK: Andrew Kuhlmann and James
21 LaRock from the Attorney General's Office.

22 CHAIRMAN BAGLEY: Thank you.

23 Powder River Basin Resource Council.

24 MS. ANDERSON: Good morning. Shannon
25 Anderson on behalf of Powder River Basin Resource Council.

1 CHAIRMAN BAGLEY: Thank you.

2 The Fishers.

3 MR. GILBERTZ: Jay Gilbertz, still with
4 Yonkee & Toner.

5 CHAIRMAN BAGLEY: Thank you.

6 And Big Horn Coal.

7 MS. BOOMGAARDEN: Good morning. Lynn
8 Boomgaarden and Clay Gregersen.

9 CHAIRMAN BAGLEY: Thank you.

10 Also present for the council are Jim Ruby,
11 Executive Officer and Joe Girardin, Council Business
12 Coordinator. And we have McKenzie -- what's your last
13 name?

14 MR. WILLIAMS: Williams.

15 CHAIRMAN BAGLEY: McKenzie Williams joining
16 us from the Attorney General's Office.

17 This hearing is being held at Sheridan College,
18 Room TRCC 008 in the Thorne-Rider Campus Center,
19 3059 Coffeen Avenue, Sheridan, Wyoming. There is a court
20 reporter present.

21 So we had just yesterday evening completed direct
22 of a witness, and so, Ms. Anderson, if you can please --
23 oh, you're done with the direct, so --

24 I do want to remind the witness -- make sure I
25 get your name here correctly --

1 MR. GILBERTZ: Buyok.

2 CHAIRMAN BAGLEY: -- John Buyok. Just
3 remind you you're still under oath.

4 And now we will begin cross-examination. We'll
5 start with you, Mr. Gilbertz.

6 JOHN PAUL BUYOK,
7 called for examination by PRBRC, having been previously
8 sworn, testified further as follows:

9 MR. GILBERTZ: Thank you.

10 CROSS-EXAMINATION

11 Q. (BY MR. GILBERTZ) Good morning, Mr. Buyok.

12 A. Good morning.

13 Q. We met I think at your deposition, which was
14 taken by Holland & Hart, right?

15 A. Yes.

16 Q. I have a few questions for you this morning.
17 Yesterday you said you were an engineer by training; is
18 that right?

19 A. Yes.

20 Q. What did you do in your career as an engineer?

21 A. Well, the first four or five years I worked for
22 the State Engineer's Office down in Cheyenne on water
23 rights. I was assistant superintendent of Division 1 and
24 then interstate streams engineer for the State of Wyoming.
25 Then I went to work for Western Water Consultants. I

1 worked with them for -- it's either seven or eight years.
2 I can't remember exactly. And then after that I went to
3 work for --

4 THE REPORTER: You went to work for where?

5 THE WITNESS: Aqua Terra Consultants.

6 A. I worked for them for seven or eight years also.
7 And then ever since 1998 I've been out on my own.

8 Q. (BY MR. GILBERTZ) Okay. Sounds, then, from
9 that description, like a focus of your engineering work
10 has been in water-related matters.

11 A. Mostly. Did a lot of mining engineering also.

12 Q. Okay. Tell me about that. What mining
13 engineering did you do?

14 A. While I was primarily working on reclamation
15 plan that -- did some mine planning also over the years.
16 Did quite a bit of work on highwall stability and things
17 like that.

18 Q. Okay. There was a statement made in the
19 openings that some of the objectors or folks that were
20 concerned about this project hadn't spent any time with
21 the mine plan to try to understand it. Did you spend time
22 with the mine plan?

23 A. I'd have to say hundreds of hours by now.

24 Q. Okay. And did you -- go ahead.

25 A. I should say with the permit document. Not just

1 the mine plan.

2 Q. Okay. The entire permit document. This thing
3 that's sitting up on the wall behind you?

4 A. Yes.

5 Q. Good. And you said hundreds of hours?

6 A. I think so.

7 Q. Were your concerns informed by what you did or
8 did not see in this mine plan?

9 A. Yes, they are.

10 Q. Now, with this understanding that you've had a
11 background in dealing with water issues, did I hear you
12 testify yesterday that you had attempted to drill a well
13 below the Carney seam and had drilled to a depth of a
14 thousand feet?

15 A. Yes, I did. In two different places.

16 Q. Two wells to a thousand feet each?

17 A. Yes.

18 Q. Okay. And neither one you could find any usable
19 water for your house below the Carney seam?

20 A. Yes, that's correct.

21 Q. As the crow flies, Mr. Buyok, about -- and let's
22 use a crow so we don't get wet -- how far is it to the
23 Fisher house?

24 A. About three-eighths of a mile.

25 Q. Three-eighths of a mile. Little less than half

1 a mile?

2 A. Yeah.

3 Q. Okay. And so your real world experience in that
4 area in drilling these two wells is that there isn't a
5 good aquifer at 4 or 500 feet that would serve as a
6 replacement well for the Fishers as Jeff Barron testified
7 to yesterday?

8 A. You know, geology can change from place to
9 place, but I know at least that close to the Fishers there
10 isn't.

11 Q. Three-eighths of a mile away, you couldn't find
12 one?

13 A. I couldn't find one. Well, actually, the one --
14 the one that we did try that was up on the hill above my
15 sister's house was probably 400 yards from their house,
16 maybe only 200 yards from their property.

17 Q. Okay. And so that well up on the hill is only,
18 what did you say, 400 yards from the Fishers' property --
19 or Fishers' house?

20 A. Yeah. Uh-huh.

21 Q. And I also wanted to explore a little bit about
22 this. You mentioned that in some extremely dry years, you
23 had problems with the water in your water well?

24 A. Yeah. We -- the water level dropped so much we
25 were pumping sediment up from the bottom of the well, and

1 we were having to change filters about every other day to
2 keep our water supply.

3 Q. Okay. Does that fact inform your concern about
4 the notion that there will be drawdown in these wells?

5 A. Yes. According to the mine plan, there will be
6 1.2 feet of drawdown in our house well. And in a dry year
7 that would -- that would run us out of water.

8 Q. And so you understand it is your -- excuse me.
9 Let me start over. It's your understanding that the
10 documents in the mine plan suggest that there will be a
11 1.2 foot drawdown in your domestic well?

12 A. Yes.

13 Q. Okay. And then I think you testified yesterday,
14 when was it that you learned there was an assertion that
15 your well and house fell just feet outside of the
16 one-half-mile boundary?

17 A. That was in my deposition -- or right after my
18 deposition.

19 Q. Right after your deposition, which is just a
20 couple weeks ago?

21 A. Yes.

22 Q. Okay. Is that a matter of concern to you?

23 A. Of course.

24 Q. Why?

25 A. Well, we're not -- according to the law, we're

1 not eligible for pre-blast survey. And I can't remember
2 all the other things -- there were other things that go
3 along with the half mile.

4 Q. Okay. If it were true that because you're just
5 indeed outside that half-mile boundary, you would also not
6 be entitled to the well -- replacement water. Is that
7 something you'd like this council to consider adding as a
8 condition?

9 A. I'm not sure if it is or isn't, but I would like
10 them to add that as a condition.

11 Q. Thank you.

12 Now, before I do that, in your review of the
13 mine plan, was there anything that caused you to be
14 concerned about any particular area of mining?

15 A. Well, of course, I was interested in areas that
16 were closest to our house, but I was also a little
17 concerned about the TR-1 area.

18 Q. What was your concern about the TR-1 area?

19 A. Well, to kind of add more detail to it, we did
20 take a tour out there on Wednesday. And --

21 MR. SUTPHIN: So, Mr. Bagley, I'm sorry.
22 I'm going to need to interject with an objection here.
23 This is information that is not included in Mr. Buyok's own
24 personal objection letter, nor is any of this referenced in
25 the Powder River Basin Resource Council's objection letter.

1 And I certainly think it's highly inappropriate for him to
2 testify about things he's done and site visits he's
3 conducted as part of this case. He's not an expert
4 witness. He's never been submitted to be an expert
5 witness. I think it's highly inappropriate.

6 MS. ANDERSON: Dr. Bagley, if I may respond
7 and I'll let Mr. Gilbertz as well, given it was his
8 question. But -- so the whole purpose of us being here
9 today is to receive public comment. That's the very
10 purpose of this hearing. The very purpose of us being here
11 is to allow the parties that have objected to the permit
12 application to prevent -- to present information to you, as
13 the council, to consider when you're reviewing the permit
14 application. It's not limited to what we wrote in our
15 objection letter back in January. It's not limited to even
16 what we put in the petition for review. It's limited to
17 what we provide to you today.

18 This is the point of this hearing is evidentiary
19 hearing to present information to you for you to consider
20 in your decision-making process. Brook will have some
21 opportunity to ask some clarifying questions about this, if
22 they so choose, but Mr. Buyok is a neighbor to this mine.
23 He's well informed about the property, his interest. I
24 think we've established he has some background and
25 experience. He is not -- we're not offering him as an

1 expert witness, but he does have some relevant factual
2 information that we think would benefit the council. And
3 that's all we're trying to do here today.

4 MR. GILBERTZ: Thank you, Dr. Bagley.

5 I would say I did not ask him for an expert
6 opinion. I asked him if he had any concerns, and he said
7 that he did. And he also then said those concerns were
8 heightened by a recent visit. I will add, lastly, that
9 this continues a phenomenally disturbing pattern of an
10 effort to keep these landowners from being heard. They
11 have to be here today with you guys because nobody would
12 give them an opportunity to have a simple meeting. And
13 then we have efforts to kick out their objections and say,
14 nope, can't even have this hearing. And then we get here
15 and now it's, nope, can't let -- we can't hear from these
16 folks. It's just a terribly disturbing pattern. So if
17 I --

18 MR. SUTPHIN: Dr. Bagley, if I might.
19 There are two things that need to be clarified. First,
20 Mr. Gilbertz began Mr. Buyok's questioning by establishing
21 his background and his experience as an engineer in water-
22 related issues. Clearly an attempt to bootstrap him in as
23 expert witness that was not designated to testify as such.
24 And, secondly, the only thing we're asking is the same
25 thing that all the objectors are asking, to look at this

1 carefully and to apply the law and the rules the way
2 they're supposed to be applied.

3 The fact that we have ended up in a contested
4 case hearing has nothing to do with decisions made by
5 Brook. The director of the DEQ chose to exercise his
6 discretion not to hold informal conferences. But the fact
7 that we are in a contested case hearing means certain
8 formalities of the law need to be applied. Mr. Gilbertz,
9 Ms. Anderson and all the attorneys involved in this case
10 understand that. And we are not trying to silence anyone.
11 We're trying to keep this within the rules and the -- the
12 law.

13 CHAIRMAN BAGLEY: So on this particular
14 objection, the question was related to TR-1. And from what
15 I could tell on the maps, Mr. Buyok's property is not up
16 against that part of the mine. The planned mine is further
17 upgradient. I don't know if the rest of council agrees
18 with me. We've heard an awful lot about TR-1. I mean,
19 important information, but what I'd like to do is keep the
20 focus of Mr. Buyok's questions on the areas that are
21 related to his -- his experience as a property owner. I
22 appreciate his background as an engineer, being an engineer
23 myself, but he has not been hired to be the expert on this.
24 So we want to hear what the -- the landowners' views are,
25 but really how it is related to their experience. And we

1 don't need additional expert opinion on other aspects of
2 the mine plan from landowners. That's not what we're --
3 we've heard lots of experts, and I think we'll even hear
4 more. So let's -- let's keep the focus related to
5 Mr. Buyok's experiences in his property, which I think
6 there are plenty.

7 COUNCIL MEMBER AGOPIAN: Dr. Bagley, do we
8 need, as a council, to be advised by the Attorney General's
9 Office about the appropriateness of conducting a public
10 comment session in the middle of a contested case hearing?
11 It's my understanding we're here today to hear about
12 technical deficiencies associated with the mine permit
13 that's been applied. And for whatever reason we're here
14 today, in the course of events that occurred this year, the
15 informal conference was not held. We did not adhere to the
16 20-day schedule, and a variety of things have gone in a
17 variety of directions. So I would hope that the testimony
18 today is focused on technical deficiencies associated with
19 the permit. And, unfortunately, while we didn't have a
20 public hearing, as associated with informal conference or
21 requested within that 30-day period. I think we need to be
22 mindful of that and mindful why we're here today.

23 CHAIRMAN BAGLEY: Thank you, Mr. Agopian.

24 Yeah, I've already spoken with our Attorney
25 General representatives, and it's our view -- or his

1 recommendation was that we allow evidence that we feel
2 could have bearing, as long as it's not irrelevant,
3 immaterial or unduly repetitious. And in this case, TR-1 I
4 feel we definitely discussed a lot, but I would like to
5 hear the landowners called as witnesses by one of the
6 contestants.

7 COUNCIL MEMBER AGOPIAN: Okay.

8 CHAIRMAN BAGLEY: So we'll continue that.

9 COUNCIL MEMBER AGOPIAN: I wanted to share
10 my feelings about that.

11 CHAIRMAN BAGLEY: Thank you.

12 MR. GILBERTZ: Are we ready?

13 CHAIRMAN BAGLEY: We are ready.

14 MR. GILBERTZ: Thank you.

15 Q. (BY MR. GILBERTZ) Mr. Buyok, I wanted to talk
16 to you about some of your testimony regarding subsidence
17 from yesterday. You said something yesterday about how
18 the Tongue River Valley transfers shock vibrations well or
19 something like that. Do you remember that?

20 A. Yes.

21 Q. What were you meaning by that? I didn't fully
22 understand that.

23 A. Just that it's -- the alluvium is flow of water,
24 for the most part, and so it's pretty unconsolidated. If
25 you have a vibration on one side of the valley, it tends

1 to transfer across the valley much more easily than
2 necessarily a vibration would through dry ground -- dry
3 ground overburden.

4 Q. Okay. And I wanted to follow up on your
5 personal experience with subsidence. If I understood you
6 correctly yesterday, you were showing the council a photo
7 of some subsidence and explaining how it was actually in
8 the process of subsiding within the last several weeks?

9 A. Yes.

10 Q. Okay. And then I understand that you personally
11 have had experience with a subsidence in your tractor. We
12 heard about that during your deposition. Could you
13 explain that?

14 A. Yeah, I was harrowing a field -- I can't
15 remember, it was either three or four years ago -- the
16 front wheel of my tractor fell in a subsidence pit and
17 luckily it didn't subside more than 4 or 5 feet in
18 diameter. The other three wheels I was able to keep on
19 the ground and pull the tractor back out. It was a
20 four-wheel-drive tractor.

21 Q. Now, to understand that, make sure we're clear
22 about that, did it actually subside as you were driving
23 over it or did you just drive into one you didn't see?

24 A. No. It subsided as I drove over it.

25 Q. Okay. Good. Now, Mr. Emme told this council

1 earlier this week that even though he had not been out in
2 that area of subsidence for years, that, in effect, there
3 was no reason to be concerned about further subsidence of
4 these old mines because they had subsided already. Does
5 that square with your real world experience of subsidence
6 out in your area?

7 A. No. They're continuing to subside every year
8 almost. We have another -- another area that subsides.

9 MR. GILBERTZ: Thank you, Mr. Buyok.

10 I have no further questions.

11 CHAIRMAN BAGLEY: Thank you, Mr. Gilbertz.

12 Mr. Sutphin.

13 MS. ANDERSON: Dr. Bagley, I'm sorry. Did
14 you want to ask Ms. Boomgaarden -- I don't know what order
15 we're going in, but --

16 MS. BOOMGAARDEN: We have no questions, but
17 I would appreciate the opportunity if we do have questions
18 with each of these witnesses.

19 CHAIRMAN BAGLEY: You're on my list, yes.
20 I'm just going on the order I have here.

21 MS. BOOMGAARDEN: Okay. Thank you.

22 CHAIRMAN BAGLEY: So, no, I'm not going to
23 miss anybody's --

24 MS. ANDERSON: Okay.

25 CHAIRMAN BAGLEY: -- chance to speak.

1 MS. ANDERSON: The order just kept
2 changing, so I wanted to clarify the order. Okay. Thank
3 you.

4 CHAIRMAN BAGLEY: Yeah, well, it's been
5 moving a little, yeah.

6 MS. ANDERSON: Okay.

7 CHAIRMAN BAGLEY: Correct, it has been
8 changing. It's not random. It has been changing. Thank
9 you.

10 MR. SUTPHIN: Thank you, Mr. Chairman.
11 Dr. Bagley, thank you.

12 CROSS-EXAMINATION

13 Q. (BY MR. SUTPHIN) Mr. Buyok, how are you this
14 morning?

15 A. Okay.

16 Q. I know in your deposition you mentioned that you
17 weren't going to testify at this trial, right? This
18 hearing?

19 A. Yes.

20 Q. And I appreciate that you apparently changed
21 your mind, due to at least in part to me wanting to take
22 your deposition, right?

23 A. Yeah.

24 Q. During your deposition, did I do anything that
25 offended or intimidated you in any way?

1 A. I don't think so.

2 Q. Okay. You were here, though, during opening
3 statements, right?

4 A. Yes.

5 Q. And you heard Ms. Anderson talk about how we
6 tried to use intimidation factors. Do you remember that?

7 A. Yes.

8 Q. You wouldn't agree, though, that I did anything
9 to intimidate you, would you?

10 A. No.

11 Q. I understand you have a lot of questions and
12 concerns about how Brook Mine plan might affect your
13 property. You never actually asked anyone at Brook Mine
14 to respond to any of your concerns, did you?

15 A. No, I didn't.

16 Q. And you never asked Mr. Barron, the engineer
17 from Western Water Consultants, primarily responsible for
18 this permit file, did you?

19 A. No, I didn't.

20 Q. One of your primary concerns is protecting your
21 water well. Is that fair to say?

22 A. Yes.

23 Q. And you were concerned about the lack of
24 protection if those wells are not considered adjudicated,
25 right?

1 A. Yes.

2 Q. But you heard Dr. Kuchanur testify that he
3 acknowledged your concern. Fair?

4 A. Yes.

5 Q. And he agreed that the term "adjudicated" needs
6 to be removed so that all permitted wells that are
7 impaired fall under the protections. Fair?

8 A. Yeah.

9 Q. Must feel pretty good to have a PhD
10 hydrogeologist agree with your objection, right?

11 A. It doesn't hurt.

12 Q. Would you agree that as long as that change is
13 included in the State decision document, your concern
14 about the water well can be resolved?

15 A. My concern about the Brook Mine's responsibility
16 to replace it would be resolved, but not my concern about
17 whether it would be able to be replaced.

18 Q. Right. But you do agree that the permit
19 commitments would require Brook to either replace it or to
20 provide similar quality and quantity of water if it's
21 found that they impaired your well, right?

22 A. Yes.

23 Q. They may not be able to drill a new well for
24 you, but they have an obligation to provide you with
25 water, right?

1 A. That's the way I understand it. Although I
2 would have the same concern that was mentioned before with
3 it, that if the only other option was hauling in water,
4 how would I ensure that that happened in perpetuity?

5 Q. Well, right. But as you sit here today, you
6 have no reason to believe that Brook Mine couldn't
7 accomplish hauling in water as long as it was necessary,
8 right?

9 A. Right.

10 Q. You testified when you were asked by
11 Ms. Anderson that these water wells were not a minor
12 concern, right?

13 A. Right.

14 Q. And she talked about how earlier testimony had
15 referred to that as a minor revision. You remember her
16 saying that?

17 A. I think so.

18 Q. You would agree with me, based on your
19 experience with mine permits, that deletion of a single
20 word would be considered a minor modification under the
21 DEQ process, right?

22 MS. ANDERSON: Objection. Calls for a
23 legal conclusion. And we just established from Holland &
24 Hart Mr. Buyok is not an expert.

25 MR. SUTPHIN: I'm asking this witness if

1 removal of a single word would constitute anything more
2 than a minor modification to the permit because they've
3 tried to mischaracterize that testimony as some sort of dig
4 at these landowners. That's all I'm asking.

5 CHAIRMAN BAGLEY: It's -- it is an
6 interpretive question. I mean, and Mr. Buyok has indicated
7 that if his well goes dry, that's a major issue to him.
8 You can go ahead and ask that question, but let's keep it
9 focused.

10 Q. (BY MR. SUTPHIN) Do you --

11 A. I would say it depends on the word. Some words
12 could make major changes.

13 Q. What about the removal of the word "adjudicated"
14 to satisfy your concerns?

15 A. I think that would be --

16 THE REPORTER: I'm sorry. You think that
17 would be?

18 THE WITNESS: A minor revision.

19 Q. (BY MR. SUTPHIN) Let's talk a little bit about
20 the pre-blast survey. I'm going to ask Carri to bring up
21 an aerial image, except we don't have the dongle.
22 Amazing.

23 MR. GIRARDIN: I've got it.

24 Q. (BY MR. SUTPHIN) Mr. Buyok, while we're pulling
25 this up, would you mind grabbing the pointer, please.

1 Mr. Buyok, I acknowledge it's a little tough to
2 see up there, but you recognize the bottom portion of this
3 is an aerial view of your home?

4 A. Yes.

5 Q. Can you use the pointer and point out to council
6 where your residence is?

7 A. Right here.

8 Q. Okay. And --

9 MR. SUTPHIN: Thank you for dimming the
10 lights.

11 MS. ANDERSON: Sorry. Dr. Bagley, just for
12 the record, is this an exhibit that's being offered or was
13 it provided to the parties or --

14 MR. SUTPHIN: Mr. Chairman, this is simply
15 a demonstrative exhibit to show council where Mr. Buyok's
16 residence is in location to the Brook Mine permit and the
17 half-mile buffer. We're not submitting it as evidence,
18 just as demonstrative.

19 CHAIRMAN BAGLEY: I'll allow this. I've
20 been wondering myself how close we are, given his
21 testimony.

22 MR. SUTPHIN: Absolutely. Thank you,
23 Mr. Chairman.

24 Q. (BY MR. SUTPHIN) Mr. Buyok, can you please --
25 well, what is the structure that's near the top of the --

1 the aerial view here?

2 A. This one here?

3 Q. Yes, sir.

4 A. It's a machinery --

5 THE REPORTER: It's a what?

6 THE WITNESS: Machinery shed.

7 Q. (BY MR. SUTPHIN) You recognize this image as an
8 aerial view that Mr. Barron showed you shortly after your
9 deposition?

10 A. He just showed me on his phone. It's hard to
11 tell exactly, but it looks like it's the same thing.

12 Q. And he showed you that the half-mile buffer line
13 for the permit boundary is the orange line right between
14 your machinery shed and your home, right?

15 A. Yes.

16 Q. Okay. I think you testified that the well --
17 your domestic well is about 20 feet outside of the half-
18 mile buffer, right?

19 A. Yes.

20 Q. Can you point on this aerial roughly where your
21 water well is located?

22 A. About right here.

23 Q. Thank you.

24 I think you also said that your house is
25 approximately 40 feet outside; is that fair to say?

1 A. Yes.

2 Q. Okay. And I think the words you used yesterday
3 were that that leaves you out of the legal remedies with
4 respect to the Brook Mine. Do you remember that?

5 A. Yes.

6 Q. Okay. But isn't it true that -- that Brook Mine
7 has offered to include you in that half-mile buffer zone
8 because you're so close?

9 A. They've offered, but as I was told by the
10 attorneys, that doesn't matter. The half-mile buffer is a
11 half-mile buffer.

12 Q. Isn't it true --

13 A. That's --

14 Q. Isn't it true that Brook Mine offered to make a
15 condition of this permit, including you within the
16 half-mile buffer, if all -- all you had to do is ask,
17 right?

18 A. I didn't understand it as a condition of the
19 permit. I did understand that they offered to do that.

20 Q. Let's talk briefly about blasting. You don't
21 consider yourself an expert on blasting, do you?

22 A. No.

23 Q. So you would agree with me that you would defer
24 to someone like Mr. Emme, who is an expert with 27-plus
25 years of experience in blasting?

1 A. Yes.

2 Q. Okay. Let's pull up Exhibit PRBRC Number 80.

3 Do you remember this is the picture of the subsidence that
4 you talked about yesterday? One of them.

5 A. Yes.

6 Q. And I think you told us that when you went out
7 this week with PRBRC's expert witnesses, that there was
8 another crack that had formed; is that right?

9 A. Yes.

10 Q. Can you show us on this image -- on this picture
11 where that new crack has formed?

12 A. It's hard to tell exactly, but basically it runs
13 about 4 feet outside the outside perimeter of this all the
14 way around.

15 Q. You said it's about 4 feet. So, in other words,
16 the -- the sinkhole is now approximately -- well, I'm
17 careful -- I guess it would be 8 feet bigger in diameter?

18 A. Well. It's not yet. But it will be soon.

19 Q. I see. Brook hasn't been doing any blasting out
20 in the vicinity of this sinkhole in the last two weeks,
21 have they?

22 A. No.

23 Q. And you would agree they haven't done any
24 highwall mining anywhere near here in the last few weeks,
25 wouldn't you?

1 A. Yes.

2 Q. And you do know, right, Mr. Buyok, that these
3 old underground mines were designed as planned subsidence
4 mines, right?

5 A. Yes.

6 Q. Oh, before we leave the issue of the -- well,
7 we've already left it, I guess, so it's -- I can't say
8 before we leave it. But before we move on, I want to go
9 back and ask you a question about that half-mile buffer
10 again. Okay?

11 I think I heard you say that you didn't know
12 until after your deposition that your house was outside of
13 that half-mile buffer, right?

14 A. Yeah. The other maps that I'd seen had appeared
15 to me my house was within the half-mile buffer.

16 Q. But you would agree you knew you weren't
17 included on the list of residences within the half-mile
18 buffer that's a part of the permit file, right?

19 A. Yes.

20 Q. Okay. So, I mean, you're --

21 A. None of my buildings were, though, either.
22 Although these are definitely within, but they weren't on
23 the list either.

24 Q. Yeah. I appreciate that.

25 Let's talk just briefly about those vibrations

1 and the -- the Tongue River alluvium that you talked
2 about. I think in your objection letter you mentioned
3 that when the trains go by on the BNSF mainline, dishes in
4 your house rattle, right?

5 A. Yes.

6 Q. And you were here when Mr. Emme talked about how
7 rattling dishes and maybe rattling photographs or pictures
8 on the wall are typical manifestations that you might
9 experience during blasting. Were you here for that?

10 A. Yes, I was.

11 Q. Okay. And wouldn't you agree with me that that
12 sounds an awful lot like what you're experiencing now?

13 A. I -- I don't have enough experience to tell
14 whether a blast would give more vibrations than the train
15 would.

16 Q. You do agree with me, though, that the railroad
17 mine line is only about a quarter mile from your house,
18 right?

19 A. Yes.

20 Q. And you would also agree that the blasting is
21 only going -- rather, is going to be at least a half mile
22 away from your house, right?

23 A. That's correct.

24 Q. Okay. In your objection letter, you stated that
25 blasting can only exacerbate the subsidence. Do you

1 remember that?

2 A. Yes.

3 Q. But you've -- you also admitted in your
4 deposition that you can't prove that statement,
5 correct?

6 A. Correct.

7 Q. At the end of your testimony yesterday, you made
8 some suggestions for -- maybe the Brook Mine could start
9 their operations at the TR-2 pit. Do you remember saying
10 that?

11 A. Yes.

12 Q. You also mentioned maybe they could start at
13 the -- with the surface mining operation rather than doing
14 highwall mining first, right?

15 A. Right.

16 Q. Would you agree with me if they started in
17 either the TR-2 area or the surface mine area you would
18 withdraw your objections?

19 A. For TR-2 area, I think I would. I'm not sure
20 about the open-pit mine area because it's -- it's pretty
21 close to our place also. There will be blasting involved
22 there as well.

23 MR. SUTPHIN: Thank you, Mr. Buyok. I
24 appreciate your candor today.

25 I have no further questions.

1 CHAIRMAN BAGLEY: Thank you, Mr. Sutphin.

2 Mr. Kuhlmann or Mr. LaRock.

3 CROSS-EXAMINATION

4 Q. (BY MR. LAROCK) Good morning, John.

5 A. Good morning.

6 Q. I just want to say we really appreciate you
7 coming in, taking time out of your day to tell us about
8 your concerns.

9 And I just want to explain -- I think Isaac's
10 already touched on this -- when we say a change is minor,
11 we just mean we're changing a couple words out of that.

12 MS. ANDERSON: Objection. Counsel is
13 testifying.

14 CHAIRMAN BAGLEY: Yeah.

15 MR. LAROCK: Dr. Buyok [sic], I'm going to
16 admit that I am testifying, and so I'll concede that that's
17 true, but if --

18 MS. ANDERSON: This is the process.

19 MR. LAROCK: If Ms. Anderson is
20 concerned that maybe the State hasn't talked enough
21 with landowners, she's objecting to my question. I'm
22 just going to point that out. But I will withdraw the
23 question.

24 CHAIRMAN BAGLEY: Thank you.

25 MS. ANDERSON: I would, just for the

1 record, note this is not the only forum the Department can
2 speak to landowners.

3 CHAIRMAN BAGLEY: Yeah. We're here just to
4 this forum. That's all we're worried about right now.
5 So...

6 Q. (BY MR. LAROCK) All right. Mr. Buyok, do you
7 have any other questions or concerns or anything else you
8 want to say about this permit application that you haven't
9 felt you've had the chance to say yet?

10 A. I don't think so.

11 MR. LAROCK: Thank you very much. We have
12 no further questions.

13 CHAIRMAN BAGLEY: Thank you, Mr. LaRock.
14 Ms. Boomgaarden?

15 MS. BOOMGAARDEN: No questions. Thank you.

16 CHAIRMAN BAGLEY: Thank you.

17 Council members, any questions?

18 Nick.

19 COUNCIL MEMBER AGOPIAN: No questions.

20 CHAIRMAN BAGLEY: Meghan?

21 COUNCIL MEMBER LALLY: I have one, if I can
22 find my notes from yesterday. I can't find it. Sorry.
23 Thank you very much.

24 CHAIRMAN BAGLEY: Deb?

25 COUNCIL MEMBER BAUMER: No questions.

1 Thank you.

2 CHAIRMAN BAGLEY: I actually have a
3 question.

4 EXAMINATION

5 Q. (BY CHAIRMAN BAGLEY) I want to thank you,
6 Mr. Buyok, for coming and testifying. I did -- as the
7 maps were flying back and forth yesterday, I -- I got a
8 little bit lost. Are you -- is your property -- or your
9 home south of I-90?

10 A. Yes, it is.

11 Q. And are you south of the Tongue River?

12 A. Yes.

13 Q. Okay. So you're south of both of those. But
14 it -- it seems like you might be quite close to both of
15 those. Could you give me an idea about how close you are
16 to I-90 and the Tongue River?

17 A. Well, the property or house?

18 Q. Both, please.

19 A. Okay. Well, our property's probably
20 200 yards -- the nearest point is maybe 200 yards from
21 I-90. Our house is probably a little over quarter of mile
22 from I-90. Part of the river goes -- we have a hayfield
23 that's in an oxbow of the river, so the river is our
24 property boundary on one side.

25 Q. Okay.

1 A. As far as the house goes, our house is located,
2 I guess, around a hundred feet from the river.

3 CHAIRMAN BAGLEY: Okay. Thank you.

4 That's all the questions I have. Thank you.

5 Ms. Anderson.

6 MS. ANDERSON: Thank you, Dr. Bagley.

7 REDIRECT EXAMINATION

8 Q. (BY MS. ANDERSON) John, I have just a couple
9 questions for you to follow up on questions that were
10 asked of you a few minutes ago.

11 You talked a little bit about replacement of
12 water wells and that concern that you had. But I want to
13 clarify, you also had concerns about impairment of your
14 water, right?

15 A. Yes.

16 Q. Do you believe that the permit operator and the
17 Department of Environment Quality also have an affirmative
18 duty to prevent harm?

19 A. Yes. I do.

20 Q. Yes, you do.

21 You also were asked a question about, you know,
22 the map and you're a little bit outside the half mile,
23 and, you know, maybe you could be in the half mile if the
24 company lets you basically kind of get a little exception
25 there. Do you remember anything else about that

1 conversation with the company and kind of offer they were
2 asking of you?

3 A. They said they would get me on the list to be
4 within the half mile of the boundary. And they also asked
5 if I would drop all my other objections if they agreed to
6 do that.

7 Q. So it was your understanding that in order to
8 make that happen, you had to withdraw your objections?

9 A. Oh, no. I think Mr. Barron said that they would
10 do it anyway. But they did want to know if I would drop
11 my other objections.

12 Q. And just to be clear with the council, would
13 you -- do you think it's important that that condition is
14 a part of the permit enforceable by the Department?

15 A. I think it would be helpful.

16 MS. ANDERSON: Okay. I think that's all I
17 have for you. Thank you.

18 CHAIRMAN BAGLEY: Thank you, Mr. Buyok.

19 THE WITNESS: Thank you.

20 CHAIRMAN BAGLEY: Ms. Anderson, please call
21 your next witness.

22 MS. ANDERSON: I call Brooke Collins.

23 Can I have the projector thing?

24 (Witness sworn.)

25

1 BROOKE COLLINS,

2 called for examination by PRBRC, being first duly sworn,

3 testified as follows:

4 DIRECT EXAMINATION

5 Q. (BY MS. ANDERSON) Good morning. Could you
6 please say your -- say and spell your name for the record,
7 please.

8 A. Yes, ma'am. My name is Brooke Ann Collins.
9 B-R-O-O-K-E, Ann is A-N-N, and Collins is C-O-L-L-I-N-S.

10 Q. Okay. So not to be confused with Brook the
11 party?

12 A. Correct.

13 Q. Okay. Excellent. So we'll add that E to your
14 name --

15 A. Great.

16 Q. -- just for the record.

17 All right. Could you also state your address
18 and explain where you live, please.

19 A. Yes. My address is 38 --

20 THE REPORTER: I'm sorry. I can't -- hold
21 on.

22 THE WITNESS: Yes, ma'am.

23 THE REPORTER: I just can't hear very well.

24 MR. GILBERTZ: Got a reverb somewhere.

25 THE REPORTER: Just speak up, if you can.

1 THE WITNESS: Okay. I live at 38 Monarch
2 Road, and the mailing address is Ranchester, but it's in
3 the old mining town of Monarch.

4 Q. (BY MS. ANDERSON) Okay. Great. I have on the
5 screen our Exhibit 91. Brooke, is this the house that you
6 live in?

7 A. Yes, ma'am, it is.

8 Q. Okay. I'm going to pull up another photo for
9 us. This is exhibit -- our Exhibit 92. Is this also a
10 picture of the house you live in?

11 A. Yes, ma'am. It is.

12 MS. ANDERSON: And these were late-filed
13 exhibit, Exhibits 91 and 92. Ms. Collins decided she was
14 going to testify after last Wednesday. So I have filed
15 them with the council's website, and I have copies
16 available for the court reporter. The parties have all
17 received them and it's my understanding there are no
18 objections.

19 Q. (BY MS. ANDERSON) All right. Brooke, I'm going
20 to pull back this map that John was testifying to a little
21 bit about the location of his property. Could you show us
22 on this map approximately where you live? If you can see
23 that map. No? Is that easier?

24 MS. ANDERSON: Okay. And for the record,
25 this is DEQ Exhibit 12, page 145. And Ms. Collins just

1 indicated where -- approximately where she lives.

2 Q. (BY MS. ANDERSON) All right. Can you tell
3 us -- I'll pull back up this picture of your house,
4 Exhibit 91. Can you tell us anything about this
5 particular structure in which you live?

6 A. Oh, I can. This is a -- was built in 1923 as a
7 result of some kind of strange behavior that had happened
8 in the late 1800s and early 1900s. There was Catholic
9 church that was in the town of Carneyville and it was
10 burned down. The only people that talked about it
11 wouldn't tell you who exactly burned it down. But,
12 basically, it was a way to get to the immigrants. If you
13 burnt down the Catholic Church, you hurt the immigrants.
14 So they rebuilt another Catholic Church, and this was then
15 in Kleenburn because Carneyville changed their name to
16 Kleenburn to reflect the clean-burning coal. So they
17 built another one in Kleenburn, and it was also burnt
18 down.

19 And so they built another Catholic Church. This
20 time in Monarch and this time out of 14-inch thick-cut
21 stone, and it hadn't been burnt down yet.

22 Q. All right. Thank you.

23 Would you say you have a multi-generational
24 connection to the area?

25 A. I do. I'm actually the fifth generation of my

1 family to live in Monarch. I had two -- I had two great-
2 grandmothers that lived in Monarch. One came from Bolivia
3 and the other came from Iowa. So, yes, I've got family
4 members who were married in the Monarch Church across the
5 way under the Brook Mine property. Yes, I've got strong
6 family ties to it.

7 Q. Excellent. And just for the record, how long
8 have you lived where you lived?

9 A. I started working in investing in this property
10 in 1990s. I moved in in 2001. I also have neighbors,
11 Willy and Olga Long. When Olga passed away, Mr. Long went
12 and lived with his family, and since that time I have been
13 a -- the caretaker of the Long property, which is right
14 next door to me as well.

15 Q. Brooke, did you file an objection to the permit
16 application back in January?

17 A. Yes, ma'am, I did.

18 Q. I'm going to pull up our Exhibit 10.

19 MR. POPE: Dr. Bagley, just for the sake of
20 the record, since Ms. Collins has already begun testifying,
21 we would object. She did not request contested case in
22 this matter. Understanding, however, the council's going
23 to permit those folks to testify, we just wanted that for
24 the purposes of the record.

25 CHAIRMAN BAGLEY: Thank you for putting

1 that on the record.

2 MS. ANDERSON: Thank you. And I was
3 actually just about to get to why she didn't do that,
4 but...

5 Q. (BY MS. ANDERSON) So is this the letter that
6 you submitted to DEQ back in January?

7 A. Yes, ma'am.

8 Q. Okay. And at the time did you ask for an
9 informal conference?

10 A. I did.

11 Q. Okay. And that request was denied by DEQ?

12 A. It was.

13 Q. Okay. After that was denied, did you try to
14 participate in a contested case proceeding?

15 A. Yes, ma'am, I did.

16 Q. And how did that go?

17 A. Not incredibly well. I was actually over my
18 head pretty quickly. The problem is I'm a graduate
19 student, and so I couldn't afford to hire an attorney,
20 well into the stage.

21 Q. And you still get some filings related to these
22 case, don't you?

23 A. I do. I still get all the emails and the
24 attachments and all the things that go along with it, yes.

25 Q. Yeah. I've seen your name on some service lists

1 I've been confused about.

2 All right. Could you tell us a little bit about
3 your background and experience in coal mining.

4 A. Sure. I was a coal miner for a little over a
5 decade at Decker Coal Mine.

6 Q. Okay. And based on that experience, in your
7 opinion, what makes a good operator?

8 A. What makes a good operator?

9 Q. Yeah.

10 A. I think a good operator cares about all the
11 stakeholders and doesn't just follow the regulations and
12 goes over and above that to make sure that the people and
13 the land is taken care of.

14 Q. Yeah. Based on your experience and your
15 knowledge of the area, are there any impacts you think
16 should be prevented by DEQ with this permit application?

17 A. Yeah. Actually, there's several things I'm
18 concerned about. One for certain is the blasts from the
19 explosions. I got to learn -- I've learned so much this
20 week by being able to listen to everybody. And Mr. Emme
21 talked about blasts. We did talk about he got the
22 foundation incorrect for my house. So I am concerned
23 about how the blasts are going to affect the building.
24 And also the subsidence in the area. I don't mean just
25 the mining subsidence behind all of this, but that entire

1 place was a town. Monarch went from the old church all
2 the way to the river. And there are root cellars and
3 there are subsidences that happen in route, and I think
4 that potentially the blasts will increase that and worsen
5 that. I'm concerned about the water, both the quality and
6 the quantity of it, both groundwater and surface water. I
7 just don't know for sure.

8 Q. Yeah, do you have a well that -- do you have a
9 well that serves your property -- or the property on which
10 you live?

11 A. I do have a well, and I've had some problems
12 with it. So it's not potable. I don't drink it. I
13 actually haul water from town.

14 Q. Okay.

15 A. I do have two livestock reservoirs that I use
16 that are over on the Long property.

17 Q. Okay. So to go a little more into blasting.
18 Did you ever see a blast when you worked at the coal mine?

19 A. Yes, ma'am. Quite a few.

20 Q. Yeah. So it's a little bit -- I don't know. Is
21 it clear to you what blasting will look like at the Brook
22 Mine?

23 A. Yes, it is. I mean, I'm not familiar with the
24 continuous longwall mining operations, but I do know what
25 a coal shot sounds like and looks like and certainly know

1 what an overburden shot is like. I don't think they're
2 going to be doing any cast blasting, but I know what those
3 are as well.

4 Q. Okay. So I'll ask the same question I asked
5 Mr. Buyok. If you were sitting in the chair of the
6 director of the DEQ down in Cheyenne and making a decision
7 on this permit application, what would you want to see
8 happen?

9 A. I would want to make sure that there were things
10 in the permit that covered contingencies that aren't
11 covered by the technical -- what is the word -- technical
12 adequacy. Because I've heard a lot about that this week,
13 and that there's -- you know, does this meet technical
14 adequacy? And, certainly, I'm not an expert witness on
15 any of that. I'm kind more on the practical side of
16 things. And so I know they sell T-shirts that say "The
17 Engineer's Always Right," but my experience as coal miners
18 there are a lot of contingencies that come up that aren't
19 covered in the models. So I want to make sure there was
20 some kind of wording in the permit that covered the things
21 that the model doesn't cover.

22 Q. Okay. Is there anything else you want to share
23 with the council about your place or your background or
24 your concerns?

25 A. First of all, I'd like to thank the council for

1 coming to be here, because if this would have been held in
2 Cheyenne, I certainly wouldn't have been able to learn as
3 much as I did. And so I thank you for you coming to do
4 that. I know it's been a long few days and sure
5 appreciate you being here.

6 I really have felt like there has been something
7 of a disregard and sometimes even an antipathy towards
8 stakeholders like myself. Even little, tiny stakeholders
9 like myself. And I just mean that the ability to access
10 information, to get people to discuss things has been so
11 difficult. And there's such an adversarial relationship
12 with all of this. It's just ridiculous. And it doesn't
13 need to be. And I sure hope that you all would help
14 provide that leadership to make sure that doesn't happen.
15 Because the state of Wyoming can't afford to keep doing it
16 this way.

17 Q. Thank you, Brooke.

18 I think it -- have you ever approached the
19 company to try to address any of your concerns?

20 A. On numerous occasions. Actually, when I first
21 heard about the Brook Mine, somebody said, "Is that your
22 mine?"

23 And I said, "What mine?" I think that would
24 have been maybe 2015 when they told me about a mine, and
25 figured, "Well, it must be mine. It's named after me."

1 At that point, I did some research on Ramaco. I sent a
2 couple of emails. I called the office. I've actually
3 been by the office several times, and it's a little bit
4 odd to leave the door wide open with nobody there.

5 But I was really kind of looking to maybe get a
6 job, because I have had experience as a coal miner. I was
7 certified as a foreman in the state of Montana, and I am
8 just about ready to graduate with my MBA so I thought,
9 hey, I can walk to work from there. So I started
10 contacting them about that, and never did hear anything
11 back, but maybe it's because I did say I lived in Monarch.
12 But I know that we had a prehearing conference call where
13 the legal counsel said that they would get with their
14 client and be willing to speak with us, and nothing ever
15 came of that. I spoke with Jaylyn, maybe the PR person
16 that worked in the office, and asked her to contact me and
17 get me some information.

18 Q. Shelleen? Is that --

19 A. Shelleen. Shelleen. Okay.

20 Mr. Barron, and certainly Niles for, you know, a
21 year has been promising me he would come have coffee and
22 tell me about why I shouldn't be worried about the
23 blasting.

24 Q. You mentioned just a moment ago that you
25 originally wanted to get a job from the company?

1 A. I did.

2 Q. Would you still work for them?

3 A. Well, sure depends on how their philosophy is.
4 I might be a great mine manager.

5 Q. Anything else you would like to share today with
6 the council?

7 A. I guess I have a great appreciation, as I
8 listened through -- to everybody's testimony about the
9 technical parts of it and the models and I know what
10 strong software we have now to make predictions and do
11 forecasting. But there really are a whole lot of things
12 that aren't covered, and I would say that comes from
13 practical experience.

14 And what I mean by that is I just finally got
15 access to the entire mine plan, I guess, Monday, and was
16 able to look at it, particularly Volume IX, although III
17 was a really good volume too. And there are numbers that
18 stick in my head like the water usage, the daily water
19 usage. It says some 300,000 I think a day -- gallons a
20 day. And the thing that stuck in my mind was the 220,000
21 for dust suppression.

22 And I spent thousands of hours on a water truck,
23 and I know that you can use that in about hour and a half.
24 And I know that you can go through a million gallons of
25 water when hot and it's windy. But then it's summertime.

1 Or in the wintertime maybe you only go through 50 gallons
2 to do dust suppression. And I suppose the middle ground
3 there is 220,000, however that's figured, the formulas.

4 It's when it's a lot more than that and a lot
5 less than that that it's going to start affecting us, the
6 residents that live there, because they're going to have
7 way too much water and they're going to have not enough
8 water. And most of the technical aspects that I see are
9 really kind of the Goldilocks theory. And I'm just
10 concerned the permit doesn't cover when the Goldilocks
11 things aren't there, and sure hope they would take a look
12 at that.

13 MS. ANDERSON: Okay. Thanks, Brooke. I
14 have no more questions for you at this time.

15 CHAIRMAN BAGLEY: Thank you, Ms. Anderson.
16 Mr. Gilbertz.

17 MR. GILBERTZ: No questions.

18 CHAIRMAN BAGLEY: Thank you.

19 Mr. Sutphin -- oh, Mr. Pope.

20 MR. POPE: Thank you, Dr. Bagley.

21 CROSS-EXAMINATION

22 Q. (BY MR. POPE) Good morning, Ms. Collins.

23 A. Good morning.

24 Q. My name is Jeff Pope. I'm an attorney here on
25 behalf of Ramaco. We haven't had a chance to meet yet.

1 It's nice to meet you.

2 I want to follow up on something you mentioned
3 just a moment ago. I think I heard you say that you just
4 got access this Monday to the mine plan. Is that
5 accurate?

6 A. Yes, it is.

7 Q. Okay. So just to sort of understand what you've
8 done here. When you prepared the objection letter, had
9 you reviewed the permit application?

10 A. No. I couldn't find it.

11 Q. So, for example, you -- you were not aware,
12 then, I take it, that there was a copy -- a paper copy on
13 file at the Department of Environmental Quality?

14 A. No.

15 Q. Were you also aware that the Department had
16 circulated an electronic copy, at least to the folks who
17 were parties in this contested case?

18 A. No, I was not.

19 Q. Similar question about what you did in preparing
20 your objection letter. Did you review any Wyoming
21 statutes or regulations in preparing that letter?

22 A. In preparing my objection letter, I relied
23 entirely on my experience as a coal miner and --

24 THE REPORTER: I'm sorry. I can't hear.

25 THE WITNESS: Sorry.

1 A. I relied entirely on my experience as a coal
2 miner and living there in the area.

3 Q. (BY MR. POPE) And I appreciate that,
4 Ms. Collins. Unfortunately, for the sake of the record, I
5 just have to get the precise answer.

6 So is it fair to say that you did not look at
7 Wyoming statutes or regulations in preparing your
8 objection letter?

9 A. Not until now. I actually have a copy of it.
10 I'm kind of a nerd. I'm into reading it.

11 Q. Fair enough.

12 Let's talk a moment about blasting. I heard you
13 had some concerns about that, both in your letter and what
14 you said here today. And I understand you just got a full
15 copy on Monday, so you're not aware. It's okay to say
16 that too. But are you aware that inside its permit
17 application Brook Mine has a blasting plan?

18 A. Yes, I am.

19 Q. And are you aware that there are statutes and
20 regulations in Wyoming that control what types, what
21 frequency and what intensity the Brook Mine can use to
22 blast?

23 A. Yes, I am.

24 Q. Are you aware that Brook has to publish -- Brook
25 Mine has to publish a blasting schedule?

1 A. Yes, I am.

2 Q. I'll keep trying to say Brook Mine.

3 A. Thank you.

4 Q. Are you aware that Brook Mine will also have
5 fences, signs and sirens inside the permit boundary to
6 keep people out and notify people about blasting?

7 A. Yes, I am.

8 Q. And are you aware that Brook Mine has a
9 commitment in its permit application to protect engineered
10 structures, like the old Catholic Church, from blasting?

11 A. Yes. In Volume IX is a PDF. It's on page 338,
12 which made me really aggravated that I had to read through
13 that much to get to the one piece of paper that somebody
14 could have told me about much sooner. Yes, I am aware of
15 that.

16 Q. And I'm sure from your experience at the Decker
17 Mine, you're probably also aware that folks who live
18 within the half-mile buffer around the Brook Mine permit
19 boundary can request a pre-blast survey of a house. For
20 example, right?

21 A. Yes.

22 Q. Now, I think you mentioned that the church
23 you -- you have restored was built in 1919; is that
24 correct?

25 A. 1923.

1 Q. I'm sorry. 1923.

2 And I apologize. I may have been a little
3 confused because you mentioned it had been burned down a
4 couple times and rebuilt. I just want to make sure the
5 church that was built in 1923 is that -- was that built on
6 the same location we're looking at in this photo?

7 A. This is the one that was built in 1923.

8 Q. Thank you.

9 A. Uh-huh.

10 Q. You're aware that after 1923, the Big Horn Coal
11 mine operated nearby where the proposed Brook Mine is,
12 right?

13 A. Yes.

14 Q. You're aware that the Big Horn Coal mine did
15 blasting as part of its operations in that area?

16 A. I am.

17 Q. Let's talk about the water issues you raised in
18 your objection and here today. And, again, understanding
19 you just had the permit on Monday. Are you aware that
20 Brook's permit application contains a dewatering plan?

21 A. I am.

22 Q. And are you aware that within the permit
23 application Brook has -- Brook Mine has studied the
24 impacts of the mine on domestic sources of water?

25 A. Yes. I'm aware of that.

1 Q. Did you happen to -- I realize I'm asking for
2 specific page here, but sounds like you're familiar with
3 the pages.

4 A. I know it.

5 Q. Did you have the chance to look at page MP-47,
6 which discusses the expected impact on domestic water
7 users in the area?

8 A. I would have to look at it, but I do know that I
9 read that. I was able to identify which well was mine and
10 looked through all those --

11 THE REPORTER: I'm sorry. I can't hear.

12 A. I did look through all of the -- all of that and
13 identify which of those wells was mine and looked through
14 all the different tables in the commentary on it.

15 Q. (BY MR. POPE) Do you recall the Brook Mine's
16 studies and models revealed that the impact on domestic
17 sources of water would be low?

18 A. Yes.

19 Q. And you -- you sat through the hearing, so I'm
20 sure you heard this before. But were you aware that the
21 Brook Mine permit application has a commitment to replace
22 both water quantity and water quality that may be
23 adversely impacted by the mine?

24 A. I am, but it doesn't specify anything about how
25 you determine whether or not Brook Mine is responsible for

1 it and where the burden of that proof is.

2 Q. And that's a great point. And it's -- it's a
3 great segue to transition to the next set of my questions.
4 You mentioned in your close of your testimony that there
5 are sometimes unknowns and contingencies that may be
6 encountered as part of mining operations based on your
7 experience at Decker Mine, right?

8 A. Yes, sir.

9 Q. Would you agree with me that the permit
10 application and the mining process in Wyoming is designed
11 somewhat to be general to allow operators flexibility to
12 deal with contingencies?

13 A. Would you say that again?

14 Q. It's a long question. I will only ask you two
15 questions instead of one. Would you agree with me that
16 mining operators need flexibility to address contingencies
17 in operations?

18 A. Yes, sir. As an MBA --

19 THE REPORTER: I'm sorry?

20 A. As an MBA, I totally understand the importance
21 of that.

22 Q. (BY MR. POPE) Would you also agree that the
23 permit the mine operates under also needs to be a little
24 bit general in nature to provide operational flexibility?

25 A. Yes.

1 Q. Let's talk about roads. And I realize you and
2 Ms. Anderson didn't discuss roads, but I believe you talk
3 about them in your objection letter. So I want to ask you
4 a few questions about those.

5 And, again, understanding you just had the
6 application on Monday. Are you aware that the mine plan
7 document contains a transportation network narrative and
8 map?

9 A. I was told that was in there. I'm not sure I
10 actually saw that.

11 Q. Okay.

12 A. If there's a huge part about secondary roads,
13 tertiary roads, but I didn't actually see where any roads
14 were.

15 Q. You also -- you talked about driving a water
16 truck and dust suppression issues. In your review of the
17 permit application, did you happen to find Brook Mine's
18 dust suppression plan?

19 A. No, I didn't see the dust suppression. I just
20 saw how many gallons they were planning on using for dust
21 suppression a day.

22 Q. Similar question here. In your review of the
23 permit application, did you also come across, excuse me,
24 the Brook Mine coal dust suppression plan?

25 A. I don't know.

1 MR. POPE: Okay. Thank you, Ms. Collins.

2 I have no further questions.

3 CHAIRMAN BAGLEY: Thank you, Mr. Pope.

4 Mr. LaRock.

5 CROSS-EXAMINATION

6 Q. (BY MR. LAROCK) Good morning, Brooke.

7 A. Uh-huh.

8 Q. Again, like I said with Mr. Buyok, thank you so
9 much for coming for your testimony. We appreciate you
10 taking the time to participate in the hearing with us.

11 Just one question, is there anything or any
12 concerns or problems that you haven't yet addressed, now
13 that we're here on the record, you want to talk about?

14 A. No. My primary concern is just to make sure the
15 contingencies that aren't covered in the models do somehow
16 get covered in the permit to protect the local residents.

17 MR. LAROCK: Thank you.

18 We have no further questions.

19 CHAIRMAN BAGLEY: Thank you, Mr. LaRock.

20 Ms. Boomgaarden?

21 MS. BOOMGAARDEN: No questions. Thank you.

22 CHAIRMAN BAGLEY: Thank you.

23 Council, any questions?

24 Deb?

25 COUNCIL MEMBER BAUMER: No questions.

1 CHAIRMAN BAGLEY: Meghan?

2 EXAMINATION

3 Q. (BY COUNCIL MEMBER LALLY) Something that Brook
4 said, that they would be able to replace --

5 THE REPORTER: I'm sorry?

6 Q. (BY COUNCIL MEMBER LALLY) Brook stated that
7 they would replace -- or that the law stated they would
8 replace engineered structures. Being that your house was
9 built in 1923, is it an engineered structure?

10 A. Is it what?

11 Q. An engineered structure.

12 A. I don't know what the legal definition of an
13 engineered structure is.

14 COUNCIL MEMBER LALLY: Okay. Thank you.

15 CHAIRMAN BAGLEY: Any questions, Nick?

16 COUNCIL MEMBER AGOPIAN: Nope.

17 CHAIRMAN BAGLEY: I have no questions, but
18 I want to thank you as well for being here today.

19 Ms. Anderson.

20 MS. ANDERSON: Thank you, Dr. Bagley.

21 REDIRECT EXAMINATION

22 Q. (BY MS. ANDERSON) Brooke, I just have one more
23 question for you, similar to a question I asked John. So
24 a moment ago you were just visiting a little bit with the
25 attorneys for the company about the pre-blast survey and

1 what that means. Do you think there's a difference
2 between remediating environmental harm versus preventing
3 it?

4 A. I think there's a huge difference.

5 Q. And could you explain what you mean, I guess,
6 for your structure too with blasting.

7 A. Sure. I just learned yesterday, really, that --
8 well, actually it would have been Tuesday morning, in
9 looking at the Volume IX, where I had been kind of
10 concerned because I didn't think I was going to be able to
11 afford a pre-blast survey to be -- to be -- to even find
12 out, you know, to have a baseline for that. And then
13 through the process of all of this I learned I'm not the
14 one responsible for paying for that, and I'm pretty happy
15 about that.

16 And I did speak with Mr. Emme, and he talked
17 about putting his -- his very willingness to put
18 seismographic monitors around, because I think it will be
19 real important to notice immediately if it starts to
20 shaking that building. Unlike some of the other homes, if
21 things start rattling in my house, it's because the walls
22 are falling down. So I'd very be interested in making
23 sure that there's something in place where if it seems to
24 be doing industrial damage, they won't continue doing
25 that.

1 Q. So did I just hear you, then, would you ask the
2 council, maybe, to have the seismographs as a condition of
3 approval for the permit application?

4 A. I would -- I would love that.

5 MS. ANDERSON: Thank you. That's all I
6 have for you. Thank you go for your testimony.

7 THE WITNESS: Thank you very much.

8 CHAIRMAN BAGLEY: Thank you, Ms. Collins.

9 Let us recess for 10 minutes. Be back at 9:50.

10 (Hearing proceedings recessed

11 9:40 a.m. to 9:52 a.m.)

12 CHAIRMAN BAGLEY: Okay. We are back in
13 session.

14 Ms. Anderson, please call your next witness.

15 MS. ANDERSON: Thank you, Dr. Bagley. Call
16 Mr. Anton Bocek, please.

17 MR. POPE: Dr. Bagley, while Mr. Bocek
18 comes up here, we'll put on the record again our objection
19 to folks who did not request a contested case. That's
20 already been explained before.

21 CHAIRMAN BAGLEY: Great. Thank you.

22 (Witness sworn.)

23 ANTON JOSEPH BOCEK,
24 called for examination by PRBRC, being first duly sworn,
25 testified as follows:

1 DIRECT EXAMINATION

2 Q. (BY MS. ANDERSON) Good morning.

3 A. Good morning.

4 Q. Good morning, Anton. Could you please say and
5 spell your name for the record.

6 A. Anton Joseph Bocek, A-N-T-O-N B-O-C-E-K.

7 Q. Okay. Could you also state your address and
8 explain where you live?

9 A. The address that I live in is 11 Slater Creek
10 Lane, Ranchester, Wyoming.

11 Q. Mr. Bocek, I have on the screen here Exhibit 77
12 of ours. Can you tell us a little bit about what we're
13 looking at?

14 A. That's the picture our family farm that my
15 brothers and sister and children and nephews are a part
16 of. That was a farm that my grandparents bought in 1920,
17 and it's been in the family ever since. And that is in
18 part of the -- within a half mile of the mine --

19 Q. Okay.

20 A. -- plan.

21 Q. So you've lived out there your whole life,
22 basically?

23 A. I have.

24 Q. And you've raised kids out there?

25 A. Yes.

1 Q. And you were with your parents their whole
2 lives?

3 A. Yes.

4 Q. At least your whole life with them?

5 A. Yes.

6 Q. Okay. So it's -- this is an important place to
7 you, right?

8 A. It is.

9 Q. Okay. I'm going to pull up DEQ Exhibit 12,
10 page 145. This is a map we've been looking at a little
11 bit this morning and yesterday. Is this kind of
12 geographic area familiar to you on this map?

13 A. Yes, it is.

14 Q. Okay. Could you point out approximately where
15 you live on this map? You want me to blow it up a little
16 bit more?

17 A. Well, it's -- yeah, I just need to find where
18 the -- I can't tell where the Slater Creek Lane is on
19 this.

20 Q. How --

21 A. It would have -- it would have to be in this
22 area here.

23 Q. Okay. Approximately how far do you live from --
24 you know, there's a -- looks like a town of Monarch on
25 this map.

1 A. I'm probably to the -- a quarter mile, you know,
2 across the river from Monarch.

3 Q. Okay. So you live between the river and the
4 interstate?

5 A. Yes.

6 Q. Okay. And does your property abut the frontage
7 road?

8 A. The property doesn't, but it is close to the
9 frontage road.

10 Q. Okay. If you would travel home from here today
11 at this hearing, what roads would you use?

12 A. I-90, and I'd take I-90 and get on Highway 345,
13 which would be the frontage road.

14 Q. So that -- the frontage road is the main access
15 to your property?

16 A. Yes. It's the only one.

17 Q. It's the only one. Okay.

18 Are you familiar that the mine would maybe use
19 that frontage road at times during its operations?

20 A. Yes.

21 Q. Do you have any concerns about that?

22 A. Yes, I do. Those -- you know, the extra traffic
23 on that road would certainly be a concern. We've had
24 that -- a few years ago they had some interstate work
25 which diverted a lot of the traffic back onto that road,

1 and it was quite dangerous. We had some close calls
2 because of the extra traffic, the extra speed.

3 Q. Okay. Is there anything you would like to tell
4 the council about maybe requirements or conditions that
5 would be useful in the permit related to the use of that
6 road? Have you given that any thought?

7 A. I haven't. Other than, you know, consideration
8 that, you know, maybe the speed limits and weight limits
9 on that, especially in those areas with the extra traffic
10 and extra weight on it.

11 Q. Are you concerned that -- did you hear some
12 testimony here this week about the company really hasn't
13 reached out to the Department of Transportation?

14 A. I haven't. I wasn't here that day.

15 Q. You also have a little bit of background in coal
16 mining.

17 A. Yes.

18 Q. Can you tell us about that?

19 A. Yes. I worked at Big Horn Coal for about
20 14 years. Started out as laborer, ran some heavy
21 equipment, haul trucks, coal trucks, then I was on the
22 blasting crew for several years.

23 Q. So you were on the blasting crew. Did that
24 background help inform any of your concerns about this
25 proposal here today?

1 A. It did. With the mine doing blasting, I'm
2 concerned about foundations in my well and the well on the
3 family farm.

4 Q. Yeah. So I think we've heard a little bit about
5 from the company that Big Horn Coal's operations were all
6 good and there weren't any impacts in the area. Would you
7 agree with that?

8 MR. POPE: Objection. We have not
9 presented that testimony. We have only presented testimony
10 Big Horn Coal operated in the area.

11 CHAIRMAN BAGLEY: That is correct.

12 MS. ANDERSON: Okay. That's fine,
13 Dr. Bagley. I'll rephrase.

14 Q. (BY MS. ANDERSON) Anton, in your experience on
15 those blasting crews, were there any -- were there ever
16 any problems?

17 A. There were some neighbors that had well issues,
18 that had wells redrilled because of blasting.

19 Q. Yeah. Okay. And that history that you have,
20 that's helped inform why maybe you're concerned about
21 blasting that happened at the Brook Mine?

22 A. Yes. Especially the proximity of mine to my
23 house and family farm. It's actually closer than what Big
24 Horn Coal was to these people that did have some problems.

25 Q. Okay. Do you -- when you were on those blasting

1 crews, did you see pollution from blasting?

2 A. We did have some issues at times with nitrous
3 oxide gas, especially in the wet areas.

4 Q. Uh-huh. And do you have any concerns about that
5 happening with this mine?

6 A. Yes. Yes, I would. It's another issue that --
7 especially where it's going to be right across the
8 interstate from my home.

9 Q. Okay. Do you have any concerns about blasting
10 for, you know, vibrations and impact to structures?

11 A. I would. Again, my house is only a tenth of a
12 mile off Highway 345, so it's not too far across the
13 interstate. And the family farm, the house that is there
14 is a block structure. And there's a barn that's
15 approximately a hundred years old with rock taken from the
16 area that is the foundation of that barn.

17 Q. Uh-huh. Okay. Is there anything you'd like to
18 tell the council about maybe conditions they could
19 consider for blasting, like seismographs?

20 A. I would like to have, you know, consideration
21 that we would have a seismograph at the -- at both places.

22 Q. Yeah. And your experience with blasting in the
23 past, were they useful, do you ever know about --

24 A. I don't. I didn't know of anyone that did have
25 them.

1 Q. Okay. Could you tell us a little bit about the
2 water sources for your property?

3 A. The -- my water well is close to 500 foot deep.
4 It is an artesian well. I'd hate to have that loss. The
5 family farm's well is shallower. It's under 200 feet.
6 But both would be a concern to -- you know, if we had some
7 disturbance on those wells.

8 Q. Yeah. Do you think there would be an adequate
9 replacement source for the water in the area?

10 A. I don't know. I know my well has -- I built
11 my home in '78 and it's -- it's been a good well.
12 It's good water. If something happened to that aquifer,
13 it may be hard to replace the source and the quality of
14 water.

15 Q. Okay. So I know you know a little bit about
16 Slater Creek, right?

17 A. Yes.

18 Q. Do you have any concerns about any surface water
19 impacts?

20 A. I do. Slater Creek flows right out my back
21 yard. It's been probably a hundred feet or so from the
22 house. It -- mining on Slater Creek or in that area could
23 greatly concern some -- you know, would concern me with
24 the water issues.

25 Q. I think it's been represented that Slater Creek

1 is an intermittent stream. Do you remember hearing that
2 at all this week?

3 A. I heard it. I wasn't here when the testimony
4 was made, but --

5 Q. Yeah, would you agree with that, based on your
6 experience?

7 A. You know, flows -- Slater Creek flows through
8 our property for probably 600 yards or better. I've lived
9 there 65 years, and I've never seen it dry up. It slows
10 up, depending on years, but it has never dried up in that
11 area.

12 Q. Okay. Anton, I'm pulling up our Exhibit 2. I'm
13 going to display it. Do you recognize this letter?

14 A. Yes.

15 Q. I'll probably have to scroll down so much so you
16 can see it.

17 A. Have to be up so I can look at my name.

18 Q. Okay. Is this the letter you sent DEQ back in
19 January?

20 A. It is.

21 Q. Okay. At the time what did you think was going
22 to happen with this letter?

23 A. Well, I was hoping that we may get a -- a public
24 hearing that all the landowners might be able to speak and
25 address our concerns.

1 Q. Yeah. Since that time has DEQ -- anybody from
2 DEQ reached out to you about any of your concerns?

3 A. No.

4 Q. Has the company?

5 A. No.

6 Q. Have you -- do you have anything to say about
7 that?

8 A. Well, I just think that the new kid on the
9 block, it would be nice to have them come tell the
10 neighbors and those are going to be affected by this mine.

11 Q. Is there anything else you'd like to add or
12 share with the council?

13 A. No. I just -- I -- I'm really concerned about
14 the water issues and the foundation issues, the air
15 quality and the water quality being affected in this area.
16 I believe that the Slater Creek area is being taken too
17 lightly. That stream can be quite a raging torrent at
18 times, depending on the snowfall, the rainfall. I've seen
19 it in the 3rd of July being quite severe over the banks
20 because of rain.

21 MS. ANDERSON: Okay. I think that's all I
22 have for you at this time. Thank you.

23 CHAIRMAN BAGLEY: Thank you, Ms. Anderson.
24 Mr. Gilbertz.

25 MR. GILBERTZ: I do not believe I have any

1 questions.

2 CHAIRMAN BAGLEY: Thank you.

3 Mr. Pope.

4 CROSS-EXAMINATION

5 Q. (BY MR. POPE) Good morning, Mr. Bocek.

6 A. Good morning.

7 Q. We had the chance to meet a couple weeks ago at
8 your deposition?

9 A. Yes.

10 Q. Good to see you again.

11 I'd like to start with just some clarification
12 from up on a couple of issues. As we discussed at the
13 deposition, you did not assist the Powder River Basin
14 Resource Council in preparing its objection letter, right?

15 A. No.

16 Q. And at least at the time it was sent out, you
17 had not reviewed that letter?

18 A. No.

19 Q. And, again, at the time we spoke at your
20 deposition you didn't have an opinion about that letter,
21 right?

22 A. No.

23 Q. So that established, let's talk about the letter
24 that's on the screen right now.

25 A. Okay.

1 Q. It's true, Mr. Bocek, that in preparing your
2 objection letter you didn't read the entirety of Brook's
3 permit application, right?

4 A. Right.

5 Q. And you also did not go and review the paper
6 copy on file with the Department of Environmental Quality?

7 A. No.

8 Q. As a result, you also didn't review any of the
9 correspondence related to the permit, right?

10 A. Right.

11 Q. You also, in preparing your objection letter,
12 didn't look at the comments and responses between the
13 Brook Mine and DEQ, right?

14 A. Right.

15 Q. You also did not review any Wyoming statutes,
16 right?

17 A. Right.

18 Q. You also didn't review any Wyoming regulations?

19 A. That's correct.

20 Q. There are some objections in the objection
21 letter about fires, but you did not review Brook's fire
22 control plan, right?

23 A. Right.

24 Q. As you just mentioned a moment ago, you had some
25 concerns, and they're mentioned in the objection letter,

1 about water wells?

2 A. Yes.

3 Q. But you did not review in the permit application
4 Brook's commitment to replacing water quantity and
5 quality, right?

6 A. Right.

7 Q. You also talked about blasting a moment ago, but
8 you don't know what type of blasting Brook intends to do
9 in the mine?

10 A. At this point, no.

11 Q. You mentioned some -- some air pollution issues
12 a moment ago. You haven't reviewed Brook's Air Quality
13 permit, right?

14 A. No, I haven't.

15 Q. Similar question about the air. There's some
16 concerns in your objection letter about dust. You did not
17 review Brook's dust control plan?

18 A. No.

19 Q. Again, the objection letter also mentions water
20 treatment issues, but you haven't reviewed the water
21 treatment plan in Brook Mine permit application, right?

22 A. Right.

23 Q. You expressed in this objection letter some
24 concerns about night mining. You haven't reviewed any
25 plans in the Brook permit application about night mining?

1 A. No.

2 Q. Again, sticking with the objection letter,
3 you've also expressed some concerns about facilities. But
4 you did not review the facilities loadout section of the
5 permit application?

6 A. No.

7 Q. You and Ms. Anderson spoke about roads, but you
8 did not review the transportation network portion of
9 Brook's permit application, right?

10 A. Not entirely.

11 Q. So, for example, you didn't know that Brook has
12 to have a certified -- excuse me, a licensed engineer
13 certifying design of the haul roads, right?

14 A. No.

15 Q. You didn't review the reclamation plan either,
16 did you?

17 A. I did not.

18 Q. So, for example, you didn't review water quality
19 data that's contained in the permit application?

20 A. No.

21 Q. You -- you also -- you talked a little bit about
22 the Tongue River -- excuse me, Slater Creek, and mentioned
23 some concerns about that. You did not review any sections
24 in the mine permit application that had to do with the
25 Brook Mine's impact on streams and rivers, right?

1 A. No.

2 Q. You didn't review Brook's water runoff plan?

3 A. No.

4 Q. Let's go back to the objection letter for a
5 moment, Mr. Bocek. You expressed some concerns about the
6 Brook bond calculation on there, right?

7 A. I did.

8 Q. You did not, however, review Brook's bond
9 calculation?

10 A. No.

11 Q. You didn't -- you don't have any experience, for
12 example, doing reclamation cost estimates?

13 A. I do not.

14 Q. All right. You didn't review Guideline 12
15 from -- in the DEQ guidelines?

16 A. I didn't.

17 Q. You also don't know how much land Brook will
18 disturb in the first year of operations, right?

19 A. No, I don't.

20 Q. And at least at the time of your deposition, you
21 didn't know that the Department of Environmental Quality
22 will review Brook's bond calculation on an annual basis?

23 A. No.

24 Q. All right. You also didn't know that as part of
25 that review, DEQ can recalculate the amount of the bond

1 for the bond, right?

2 A. Right.

3 Q. And as I understand it, Mr. Bocek, part of the
4 reason that you didn't look at some of these things was
5 you counted on people like Ms. Anderson and the executive
6 director of the Powder River Basin Resource Council to
7 address those issues; isn't that correct?

8 A. That's correct.

9 Q. Getting back to the objection letter for just a
10 moment. You had some subsidence-related concerns in there
11 too, right?

12 A. I do.

13 Q. But you did not review any subsidence data in
14 Brook's permit application, right?

15 A. No.

16 Q. And sticking with the theme of data. You didn't
17 review any data outside what you looked at in the permit,
18 right?

19 A. That's correct.

20 Q. Let's -- as Mr. Sutphin did, I forgot to ask a
21 few questions before I transitioned from a section. Let's
22 talk -- let's go back to blasting for just a second. You
23 mentioned that you worked for Big Horn Coal and you were
24 on their blasting crew, right?

25 A. Yes.

1 Q. And as I understand it, your -- you said your
2 family moved to the property in about 1920; is that right?

3 A. The grand -- my grandparents bought that
4 property, yes.

5 Q. And since 1920 -- I think you said you built
6 your house in 1978?

7 A. Yes.

8 Q. And your water well in that area has, I
9 think you said, flowed ever since then; is that
10 accurate?

11 A. Yes.

12 Q. You would agree with me that Big Horn Coal has
13 blasted in the -- near the area of the proposed Brook Mine
14 since 1978?

15 A. Well, with -- they have blasted, yes. But quite
16 some distance away.

17 Q. I think we can wrap up on this point, Mr. Bocek.
18 You would agree with me that if the Brook Mine complies
19 with all relevant Wyoming statutes and regulations, it
20 should receive a permit to mine coal?

21 A. I believe I said that.

22 MR. POPE: Thank you, Mr. Bocek. I have no
23 further questions.

24 CHAIRMAN BAGLEY: Thank you, Mr. Pope.

25 Mr. LaRock.

1 EXAMINATION

2 Q. (BY MR. LAROCK) Good morning, Mr. Bocek.

3 A. Good morning.

4 Q. Just the same question I'm going to be asking
5 everybody today. After this whole week, do you have any
6 comments or questions or concerns or any proposed
7 conditions that you would like this council to consider or
8 like to put on record?

9 A. I would. I believe with the -- all the
10 neighbors are concerned with foundations and water wells.
11 I believe that we should all be considered in this plan
12 and permit that should anything happen with those
13 foundations or wells, they would be replaced. And the
14 problem with some of that is companies come and go. And,
15 you know, somebody has to have water hauled to them, are
16 they going to do that for a lifetime or lifetime of the
17 company? That's -- that's a concern.

18 Q. Okay. Is there anything else?

19 A. You know, other than, like I say, the
20 foundations and dust control and subsidence issues, I --
21 those are my main concerns.

22 MR. LAROCK: Okay. Thank you very much.

23 We have no further questions.

24 CHAIRMAN BAGLEY: Thank you.

25 Ms. Boomgaarden.

1 MS. BOOMGAARDEN: No questions. Thank you.

2 CHAIRMAN BAGLEY: Thank you.

3 Council members. Nick?

4 COUNCIL MEMBER AGOPIAN: No questions.

5 CHAIRMAN BAGLEY: Meghan?

6 COUNCIL MEMBER LALLY: I have one question.

7 EXAMINATION

8 Q. (BY COUNCIL MEMBER LALLY) In your letter you
9 stated you were concerned about dust. Are you concerned
10 about dust from the mine or on your county road?

11 A. Dust from the mine. The road that goes by me is
12 a paved road.

13 COUNCIL MEMBER LALLY: Okay.

14 CHAIRMAN BAGLEY: Any other questions?

15 COUNCIL MEMBER LALLY: Nope. That's it.

16 CHAIRMAN BAGLEY: Okay. Thank you.

17 Deb?

18 COUNCIL MEMBER BAUMER: No questions.

19 Thank you.

20 CHAIRMAN BAGLEY: Mr. Bocek, thank you for
21 being here. I do have one question.

22 EXAMINATION

23 Q. (BY CHAIRMAN BAGLEY) You mentioned that your
24 well, 500 feet deep and artesian, which is great. Do you
25 happen to know what aquifer it goes into?

1 A. I do not.

2 CHAIRMAN BAGLEY: That's all the questions

3 I have. Thank you.

4 Ms. Anderson.

5 MS. ANDERSON: Thank you, Dr. Bagley.

6 I have just a couple more questions for you,

7 Anton.

8 REDIRECT EXAMINATION

9 Q. (BY MS. ANDERSON) So there was a long line of
10 questions you just got asked about your lack of review of
11 the permit application. Do you have a day job?

12 A. Yes, I do.

13 Q. Yeah. What do you do in your day job?

14 A. I'm a mine manager for a ranch west of Sheridan.
15 So it's full-time. I get home late and really don't have
16 the time to look at all this.

17 Q. Yeah. Are you aware that our organization
18 requested at one time that the permit application be
19 available after working hours for folks?

20 A. I don't believe so.

21 Q. Okay. That's fine.

22 Do you think it's reasonable to expect a nearby
23 landowner to have to read the whole permit application to
24 be able to submit an objection letter to the Department of
25 Environmental Quality?

1 A. No, I don't. I got the letter from the Western
2 Water Consultants, and my concerns were just what I've
3 spoke about. Not from reading documents, it's from living
4 there and the concerns that I have to continue to live
5 under the -- the conditions I am now.

6 Q. Yeah. So you believe it's -- you know, it's
7 important public participation right you have to write
8 that letter?

9 A. Yes.

10 Q. Okay. A moment ago you were just asked about
11 blasting if it were in coal and your experience with that
12 versus maybe blasting that could happen at the Brook Mine.
13 I'm pulling back up DEQ Exhibit 12, page 145. Are you
14 aware that these orange areas on the map are, you know,
15 basically surface mining areas of the proposed mining
16 operation?

17 A. No. I am now.

18 Q. Okay. Would you agree that -- or are those
19 closer than Big Horn Coal to your property?

20 A. Yes.

21 Q. A lot closer or --

22 A. Quite a bit closer. I drove three miles from my
23 house to the Big Horn Coal office. The blasting was
24 probably half to three-quarters of a mile farther than
25 that. So, yes, they would be quite a bit closer.

1 Q. And does that concern you?

2 A. It does.

3 MS. ANDERSON: All right. Thank you,
4 Anton. That's all I have.

5 CHAIRMAN BAGLEY: Thank you.

6 Thank you, Mr. Bocek.

7 THE WITNESS: Thank you.

8 CHAIRMAN BAGLEY: Ms. Anderson, please call
9 your next witness.

10 MS. ANDERSON: Thank you. I call Gillian
11 Malone.

12 MR. SUTPHIN: Mr. Chairman, we would like
13 to launch our standing objection to these witnesses.

14 CHAIRMAN BAGLEY: Thank you.

15 (Witness sworn.)

16 GILLIAN MALONE,
17 called for examination by PRBRC, being first duly sworn,
18 testified as follows:

19 DIRECT EXAMINATION

20 Q. (BY MS. ANDERSON) Hi, Gillian.

21 A. Hi.

22 Q. Could you say and spell your name for the
23 record.

24 A. Yes. My name is Gillian, spelled G-I-L-L-I-A-N,
25 Malone, M-A-L-O-N-E.

1 Q. Okay. I'd like to spend a little bit of time
2 talking about our organization. Are you currently serving
3 on the board of directors?

4 A. I am.

5 Q. And when did you become a member of the
6 organization?

7 A. I became a member in 1973. I'm actually the
8 youngest founding member of Powder River. I happened to
9 be working for a founding member at the time, Sally
10 Forbes, who had Beckton Stock Farm, and I was supposed to
11 be indexing Red Angus cows, but instead I was clipping
12 newspapers articles about stripping mining and doing
13 things -- assorted jobs associated with getting this
14 organization going.

15 Q. Okay.

16 A. So I've been involved for pretty much the whole
17 time on and off. I've been off, you know, going away to
18 school, or whatever. But whenever I've been here, I've
19 been involved with Powder River.

20 Q. How else have you been involved in the
21 organization over the years?

22 A. Well, I have served on the board more than once.
23 I believe I was on the board back in the '80s for a term.
24 I was board chair three years ago, I believe, for a couple
25 years. And I serve on a variety of committees. We have a

1 local foods committee. We have just a lot of different --
2 we have an ag committee, a local internal fund-raising.
3 We do a lot of gatherings, trying to raise money to keep
4 this organization going. So just a variety of issues.

5 Q. Yeah. Could you explain a little bit about our
6 organizational mission?

7 A. Yeah. I might be able to say this. Our -- our
8 mission is a commitment to the conservation of our unique
9 land, mineral, water and clean air resources, consistent
10 with the responsible use of those resources to sustain
11 present and future populations, generations. And also we
12 work to educate and empower our citizens in the state of
13 Wyoming to raise a coherent voice in decisions that will
14 impact their environment and lifestyle. So that's quite a
15 bundle, but it's basically what we do, and everything that
16 we do is based on that mission.

17 Q. We have a long mission statement. So I
18 appreciate you summarizing that.

19 Does our organization have any history with coal
20 mining?

21 A. Well, as I said, I was working for Sally Forbes
22 when strip mining came to the Powder River Basin. So,
23 yes, we have an intimate history with coal mining. And,
24 in fact, we were instrumental in getting the Federal Strip
25 Mine Act passed. One of our founding members was present

1 at the Rose Garden ceremony and signing, which was a great
2 honor for this man, who was a rancher in the Gillette
3 area, and fought and fought and fought for his ranch and
4 for that legislation.

5 Q. So back at the time, and maybe even today, what
6 would you say are the organizational goals around coal
7 mining?

8 A. I would say that they are making sure that coal
9 mines adhere to the laws that are in place to protect
10 water, clean air, neighboring landowners and the citizens
11 of Wyoming as a whole in terms of royalties, and, you
12 know, getting our taxes that come from coal paid and to
13 sustain the state itself. That's basically been our
14 approach. Bonding. Make sure that the bonding is
15 adequate to ensure reclamation. We've had quite a few
16 issues with that lately, as everybody knows.

17 Q. Yeah. Can you tell us a little bit about how
18 our organization works with landowners?

19 A. We work with landowners. Generally, if an issue
20 comes up, we get approached by landowners. That's often
21 how our membership happens, how we get members, is
22 somebody will approach us with a problem and we get
23 involved based on that, and also based on what the board
24 of directors decides. Everything that we do has to go
25 before the board, and we decide based on how our mission

1 is involved and how landowners are going to be impacted.

2 Basically, just the way the mission states it.

3 We educate them. We act as a liaison at times between

4 landowners and the state and the feds. We work with them

5 in a partnership. We talk to them. We educate ourselves

6 based on their experiences, because we consider the

7 landowners to be the experts in the area of expertise.

8 Where they live, for instance, they know the most about

9 it. So we learn a lot from them. It's kind of an

10 exchange.

11 Q. Yeah. Would you say that our involvement in

12 this proceeding and with this proposed coal mine is a good

13 example of how we work with landowners?

14 A. This is an excellent example of how we work with

15 landowners. Particularly, in this difficult -- I would

16 say difficult proposal wherein it's been hard to get the

17 information that landowners need in order to move on with

18 their lives. You need to know what's going to happen in

19 your backyard if you're going to be able to sleep at

20 night, and we have not gotten that with this -- with this

21 proposal. So we got involved on that basis.

22 We started looking for information and it seemed

23 as though the harder we looked for information, the less

24 information there was or the information was changing. It

25 was hard to determine what this mine was going to be, how

1 much coal they were going to mine, what they were going to
2 use the coal for. And so it's been kind of a moving
3 target and -- so we've -- we've encountered quite a few
4 difficulties with this situation, and we feel that it's
5 more than ever important that we're involved for our
6 landowners and for the community of Sheridan.

7 I mean, this proposal is eight miles outside of
8 Sheridan, and we haven't seen a coal mine for quite a few
9 years. And, you know, this is, historically, a rich
10 cultural historic area of mining, but other than Big Horn
11 Coal and something out at Youngs Creek, I believe, that's
12 going still, which is, you know, on the Montana border,
13 there really hasn't been a coal mine around here for
14 decades. And, frankly, we're kind of wondering why
15 there's a coal mine now, when coal mines are closing
16 and -- it just doesn't make a lot of sense to us, and so
17 we're having to sleuth it out as best we can to try to
18 find out what landowners and citizens of this county can
19 expect.

20 Q. Thank you for that.

21 Did the board of directors approve our objection
22 to the permit application of the Brook --

23 A. Yes, we did.

24 Q. -- coal mine?

25 I have up on the screen our Exhibit 1. Is this

1 the objection letter that our organization sent to DEQ
2 on --

3 A. Yes, it is.

4 Q. Actually, hand delivered to DEQ January 27,
5 2017?

6 A. Yep.

7 Q. Okay. Have you seen this letter?

8 A. I have.

9 Q. Okay. Could you tell me a little bit about why
10 the board approved our organizational objections to the
11 permit application?

12 A. Well, I think it was largely because of all the
13 unanswered questions, and because there seemed to be
14 significant gaps in the permit application. And I know
15 we've gone through this over and over and over this week.
16 I don't need to go into a lot of detail about it. But
17 there are gaps in baseline information, hydrology, and,
18 you know, what the blasting would be, all of the things we
19 discussed this week. We just don't feel that they were
20 adequately covered in the permit application.

21 Q. Okay. Thank you.

22 What has our organization done to address those
23 concerns?

24 A. Well, we have hired a couple of experts who,
25 unfortunately, have not been able to testify because we --

1 we're running out of time.

2 Q. Yeah. Anyway --

3 A. But we did hire them, and we have relied on
4 their research and their knowledge to determine that, yes,
5 there are issues with this application, and that we need
6 to delve into it a lot deeper, that the company needs to
7 devil into these things a lot deeper and provide a lot
8 more information before the application -- the permit is
9 granted.

10 Q. All right. I'd like to switch over a little bit
11 to talk about your personal experience with this area.
12 Can you tell us a little bit about why you're personally
13 concerned about the proposed mine?

14 A. Well, as a citizen, I like to recreate. Hiking
15 is my favorite thing. And I get out and walk my dog in
16 walk-in areas around the county. I like to explore new
17 areas. And a few years ago when John Buyok opened up the
18 Walk-in Area Number 7, which I believe is -- and I am
19 definitely directionally challenged, so -- but there is
20 some help. So I believe -- is this Walk-in 7? I think it
21 is. Oh, there's the interstate. There's Kleenburn right
22 there.

23 So there's recreation available here. There's a
24 fishing pond. There's a bunch of little trails that go
25 along the bottom here and along the Tongue River. You can

1 also hike up in the hills above here. This is a state
2 section. And then there's John Buyok's walk-in area,
3 which takes you back partly along the Tongue and then kind
4 of branches out. And you can go way up on top of the hill
5 where you can look one direction towards the mountains,
6 beautiful view of the Bighorns, and then the other
7 direction you look out towards, you know, Montana. And I
8 assume that if there were to be a mine developed there, it
9 would be pretty visible from that site as well.

10 But lots of opportunities for birding. Went in
11 there a couple weeks ago, saw a pair of golden eagles and
12 a juvenile, which was really fun. Saw a Spotted Towhee,
13 and saw a Western Tanager, all the birds that are coming
14 back for the summer. Anyway, it's a unique area. I mean,
15 not that it's not without some impact, because
16 historically it was a mining area. So there's -- you
17 know, there's some debris lying around from the past.
18 Those days they didn't take those olds culverts out.

19 So I don't know if the council had a chance to
20 get out there and get a -- a -- you know, just a little
21 site visit or not, but I certainly recommend it. It's a
22 nice area. It allows you to go -- especially the
23 Kleenburn area and up on a south-facing slope. So you can
24 go up there in the winter when the sun is hitting those
25 slopes and the snow gets blown off by the wind, you can

1 hike up above there.

2 I'm assuming, though, if this mine were to
3 go forward, I heard -- I think it was -- what was the
4 expert -- blasting expert, I think he said that area could
5 be off limits during mining because of the dangers from
6 blasting and just an active coal mine. So that would be a
7 shame. But right now, I enjoy going there.

8 Q. Yeah. And you would go back?

9 A. Yeah, at this point I would go back. I'm not
10 sure I'd go back if it was an active coal mine. I mean,
11 if I could go back even.

12 Q. Do you believe recreation areas like these add
13 value to our county?

14 A. I do. You know, people are moving to Sheridan
15 County for the recreational opportunities. Young people
16 are moving here to raise families, and we have a lot of
17 retirees that are moving here. A lot of them are coming
18 to be with their kids who already live here, which is kind
19 of interesting. Kids are moving back home because they're
20 realizing, after being out in the world, that this is a
21 pretty wonderful community, and we have lots of arts and
22 entertainment amenities. And all these recreation
23 opportunities. So, yeah, it's -- this is not a coal mine
24 community.

25 Q. On that, do you have any concerns about changing

1 the land from a recreation/agriculture use to a more
2 industrial use?

3 A. Yes. You know, when you come down the
4 interstate from Billings, and you come, you know,
5 approaching Sheridan, that's going to be -- if that mine
6 goes in on the side of the interstate there, that's going
7 to be people's view of this community when they come in.
8 That's just -- I don't know, I just -- doesn't really rest
9 very well with me.

10 The other thing is what about blasting? Are you
11 going to be able to shut down the interstate when they're
12 blasting? Because it's going to be that close, as far as
13 I can gather. I do have those concerns.

14 I think it's -- it has too many complications
15 with all the past mining activity, which would only be
16 exacerbated by a new mine. I -- I worry about the dangers
17 from people out there. I know John referred to that
18 yesterday when he talked about his walk-in area, that he
19 would be concerned to have people out there when there's
20 an active mine, and, you know, if there's blasting and
21 there's no way to notify recreationists, I think that will
22 be a concern of mine as well if I were a landowner there.

23 Q. Do you believe there was enough done by the
24 mine, in its proposed permit application, to protect
25 recreation values of the area?

1 A. I don't think they've done anything to protect
2 recreation values. Not that I'm aware of. I mean, I
3 think that some of those recreation areas will perhaps be
4 closed. I'm guessing they would have to be closed because
5 of liability, if nothing else.

6 I know that also, you know, the local community
7 land trust has put a lot of their own resources into that
8 area in terms of, you know, taking old cars out of the
9 bank of the Tongue River and making a safer passage for
10 boaters. They removed an old bridge structure that was
11 impeding people in canoes and kayaks, made it a lot safer
12 and a lot more visually appealing. Spent a lot of
13 volunteer time and money on that, and it seems like a sad
14 situation --

15 Q. Okay.

16 A. -- it's going to be.

17 Q. What does our organization want to have happen
18 with this proposed permit application? What's our goal
19 here?

20 A. I think our goal here is, at a minimum, to make
21 sure that Brook Mine steps up with what they really are
22 going to do, first of all -- and that I know they're not
23 supposed to be talking about it, but I have to talk about
24 it. Because as a citizen and as a member of the board of
25 Powder River, we're here for the long term. We're not

1 here for, you know, the next five years or whatever,
2 however this long -- this mine lasts. We're here for the
3 long term. And especially the landowners who live in that
4 area are there, they hope, for the long term. They hope
5 that their lives won't be disrupted to the extent that
6 they would have to move or, you know, haul water from
7 town, or, you know, whatever.

8 There are too many unknowns. I believe that
9 Brook needs to go back to the drawing board, do all those
10 baseline studies that have been indicated as necessary by
11 our experts and by many people that have testified during
12 this week, including Mr. Gerlach, and maybe they should
13 come forward with that information before they're granted
14 a permit to mine. I don't think a permit with conditions
15 is enough.

16 MS. ANDERSON: Okay. Thank you. That's
17 all the questions I have for you at this time.

18 CHAIRMAN BAGLEY: Thank you, Ms. Anderson.
19 Mr. Gilbertz.

20 MR. GILBERTZ: No questions.

21 CHAIRMAN BAGLEY: Thank you.
22 Mr. Sutphin.

23 CROSS-EXAMINATION

24 Q. (BY MR. SUTPHIN) Good morning, Ms. Malone. How
25 are you today?

1 A. Hello again.

2 Q. Hello again.

3 You remember at your deposition we talked about
4 the comments you made at a local county commission
5 meeting, right?

6 A. Yes.

7 Q. And among other things, you told the county
8 commission you "smell a rat." You remember that?"

9 A. Yeah.

10 Q. You still smell a rat, don't you, Ms. Malone?

11 A. Well, one tends to smell a rat if nobody's
12 coming forward to say who they are.

13 Q. We can make this really easy.

14 A. Okay.

15 Q. It's a yes or no. You still smell a rat.

16 A. Yes. I still smell a rat. A stinking rat.

17 Q. Okay. And that's true even though you sat
18 through this entire week of testimony, right?

19 A. Yes.

20 Q. And you've heard from all of the experts at the
21 Department of Environmental Quality, right?

22 A. Ad nauseam.

23 Q. But isn't that what you wanted, Ms. Malone? You
24 wanted to hear from all the experts, right?

25 A. I would have liked to have heard from our

1 experts.

2 Q. And just so the record is clear, you will have
3 an opportunity to have your experts heard; isn't that
4 right?

5 A. I know that. I know that.

6 Q. Okay. So at the time you filed your objection
7 letter with the Department of Environmental Quality, you
8 had not read any piece of the permit file, right?

9 A. Right.

10 Q. And so all of the objections that are based on
11 your -- that are in your objection letter were certainly
12 not based on any of the terms you read in the permit,
13 true?

14 A. Except for the ones that are -- you know, I
15 relied on Powder River Basin Resource Council's expertise
16 and the expertise of our experts to give me that
17 information. I trusted that information based on their
18 expertise, and also a lot of that stuff was mentioned in
19 our objection letter. The -- you know, the council's
20 objection letter.

21 Q. I don't want to be rude, Ms. Malone, but the
22 question's really pretty straightforward. Your objections
23 were not based on anything you read, true?

24 A. Except for the stuff that I read in our
25 objection letter.

1 Q. Okay. I see why we're getting crosswise here.

2 A. Yeah.

3 Q. So your objection was not based on anything that
4 you read personally in the permit file, true?

5 A. Right.

6 Q. Okay. You just testified that at a minimum, you
7 believe that Brook Mine should be forced to go back to the
8 drawing board, right?

9 A. Yes.

10 Q. Okay. And that's what I believe you're
11 testifying on behalf of the Powder River Basin Resource
12 Council when you say that, true?

13 A. I really have that opinion as a citizen,
14 primarily.

15 Q. But isn't it true that at your deposition you
16 told me that you believed the -- the only good thing here
17 to happen is no mining, right?

18 A. Ideally.

19 Q. And, in fact, I think you said that coal mines
20 are incompatible with recreation, right?

21 A. This coal mine. And this is, again, me, as a
22 citizen.

23 Q. I appreciate that.

24 A. Okay.

25 Q. And I agree.

1 A. Yeah.

2 Q. You don't believe that you as a citizen will be
3 able to safely recreate in the vicinity of the Brook Mine,
4 right?

5 A. I have that concern.

6 Q. But you do know that there is currently
7 recreation ongoing up at the Tongue River Reservoir,
8 right?

9 A. I assume there is. I don't go there much
10 either.

11 Q. Okay. But you would have to agree with me,
12 right, that the -- the Tongue River Reservoir is straddled
13 on both sides by the Decker mine, right?

14 A. I know you can see the mine from there.

15 Q. And you're not aware of any recreational users
16 that have been harmed or otherwise --

17 MS. ANDERSON: Objection.

18 Q. (BY MR. SUTPHIN) -- injured as a result of --

19 MS. ANDERSON: Calls for speculation.

20 MR. SUTPHIN: Can I --

21 MS. ANDERSON: I'm sorry.

22 MR. SUTPHIN: -- at least finish my
23 question?

24 MS. ANDERSON: I'm sorry.

25 MR. SUTPHIN: Thank you.

1 Q. (BY MR. SUTPHIN) You're not aware of any
2 recreational users on the Tongue River Reservoir that have
3 been injured or otherwise harmed as a result of the Decker
4 mining operations, are you?

5 A. Well, I do know that people that swim in that
6 reservoir end up with burning eyes. There's nothing being
7 released into that water? I would not swim in that
8 reservoir.

9 Q. Understood. You also would have to acknowledge
10 that the Decker mine operation is larger than the
11 operation proposed by the Brook Mine, right?

12 A. I assume so, yes.

13 Q. You've talked a little bit about blasting, and I
14 think that's one of the reasons you're afraid to recreate
15 out in the area of the Brook Mine, if it's approved,
16 right?

17 A. I have concerns about that, yes.

18 Q. And I think one of the concerns you expressed --
19 maybe it wasn't today, maybe it was at your deposition --
20 but that you're afraid you won't get notice, right?

21 A. Well, it depends on -- yes.

22 Q. But you do understand that the Brook Mine will
23 be required to put something in the newspaper notifying
24 the public about the blasting, right?

25 A. I am aware of that, but I don't even read the

1 newspaper.

2 Q. Okay.

3 A. Not the --

4 Q. But you're also aware, aren't you, that in
5 addition to the publication in the newspaper, Brook Mine
6 will be required to post signs at the perimeter of its
7 mine, right?

8 A. Yes.

9 Q. And that they'll have to have sirens and warning
10 signals, right?

11 A. I don't know, but maybe.

12 Q. Okay. And you don't know --

13 A. If you say so.

14 Q. You don't know because you didn't read the
15 permit.

16 A. Exactly.

17 Q. So you probably don't know that they're also
18 required to have security patrols going around to make
19 sure the area's clear, right?

20 A. Oh, that makes me feel more comfortable.

21 Q. You mentioned that you don't know if they're
22 going to have to shut down the interstate for blasting.
23 Do you remember that?

24 A. I just said that today.

25 Q. Right.

1 A. Yes. I don't know. It's all speculative.

2 Q. Okay. And, again, you didn't read the permit to
3 find out, either?

4 A. Nobody knows. To my knowledge, nobody knows.

5 Q. Let me ask that question again. And, again,
6 it's really --

7 A. No, I didn't.

8 Q. Okay. Thank you.

9 I noticed you didn't bring up really specifics
10 about your wildlife objection today, right?

11 A. I talked about birding.

12 Q. Okay. But you don't actually have any
13 information from the Brook Mine that you base your opinion
14 on that birding might be affected, right?

15 A. Not from their application.

16 Q. In fact, the real basis for all of your
17 objections is what you've seen in other mines, right?

18 A. Probably. Yes or no?

19 Q. Well, no. Ms. Malone, I don't -- please don't
20 make me get your deposition out.

21 A. Okay. Please don't.

22 Q. Okay. You testified at your deposition that it
23 was based on -- that your objections were based on what
24 you had seen at other mines, right?

25 A. Some of my objections.

1 Q. Okay. And, again, you didn't take the time to
2 study or understand what Brook Mine is proposing to do out
3 at its mine, right?

4 A. If it's of any interest to you, I have read it
5 since then.

6 Q. I appreciate hearing that.

7 A. I put it in my bathroom because it was hard to
8 take the time otherwise. Sorry. But --

9 Q. Ms. Malone, the questions and concerns that you
10 have read --

11 A. Sorry.

12 Q. -- you did not talk to Brook Mine about those
13 concerns, did you?

14 A. Not directly, no. There's nobody to talk to.

15 Q. And nor did you talk to Mr. Jeff Barron about
16 those concerns, did you?

17 A. Now, which concerns are we talking about?

18 Q. Any of the issues --

19 A. Any of the issues --

20 Q. -- and concerns --

21 A. -- I brought up? Okay.

22 Q. Ms. Malone, let's slow down just a tiny bit for
23 the sake of Kathy --

24 THE WITNESS: Sorry, Kathy.

25 Q. (BY MR. SUTPHIN) -- the court reporter.

1 THE WITNESS: Sorry.

2 Q. (BY MR. SUTPHIN) And let me ask the question
3 and I'll let you answer the question.

4 A. Okay.

5 Q. Okay. You did not take any of the concerns you
6 have expressed in your objection letter directly to
7 Mr. Jeff Barron, correct?

8 A. Correct.

9 Q. Nor did you take any of the concerns you've
10 addressed in your objection letter directly to anyone at
11 DEQ, correct?

12 A. Correct. Although I would say I did request an
13 informal conference with DEQ, which was denied, which
14 could have saved us a huge amount of time and money.

15 Q. You would agree, Ms. Malone, that you have now
16 had an opportunity to express your concerns in front of
17 the Environmental Quality Council, true?

18 A. Yes. A somewhat intimidating stage, but yes.

19 Q. Ms. Malone, based on what you've heard today,
20 are you -- or you heard throughout this week, you
21 understand there are many commitments that Brook has made
22 in this permit application to protect the environment in
23 and around its proposed mine, right?

24 A. No. What I have understood is that not enough
25 commitments have been made by Brook. A lot of people that

1 have testified this week have pointed out that there are
2 significant gaps and that other measures need to be in
3 place before this permit is granted. And I believe that
4 when our experts are able to testify, that will become
5 even more clear.

6 Q. So you would agree with me, Ms. Malone, that you
7 do not trust the experts at DEQ to do their mandate to
8 protect the environment, correct?

9 MS. ANDERSON: Objection. Argumentative.

10 A. I didn't say that.

11 MR. SUTPHIN: I have no other questions.

12 A. I didn't say that.

13 MS. ANDERSON: It's fine. She answered,
14 so...

15 CHAIRMAN BAGLEY: Thank you, Mr. Sutphin.
16 Mr. LaRock.

17 CROSS-EXAMINATION

18 Q. (BY MR. LAROCK) Good morning, Ms. Malone.

19 A. Morning.

20 Q. Same question I've been asking everyone else.
21 Do you have any other concerns or questions about this
22 permit application that you haven't yet expressed you want
23 to get on the record?

24 A. Well, I'd like to see Brook Mine, whoever they
25 are, be a better neighbor. My concerns are that happen if

1 Brook Mine is the kind of neighbor they've been, thus far,
2 the future is not going to be so rosy for these landowners
3 that live out there. And if you want me to go into
4 detail, I will.

5 Q. I think that's all right.

6 And I know you said that permit conditions is
7 not enough. But if you had to suggest conditions for the
8 council, are there any you'd suggest?

9 A. I would suggest all the conditions that other
10 objectors have mentioned throughout the week. And I'm not
11 an expert in, you know, in blasting. I'm not an expert in
12 hydrology. But that I believe that there are gaps that
13 actually could be quite dangerous for miners and for
14 residents and for recreationists if they aren't addressed.
15 But, ultimately, I believe there are too many unknowns.

16 MR. LAROCK: Thank you. I have no further
17 questions.

18 CHAIRMAN BAGLEY: Thank you, Mr. LaRock.

19 Ms. Boomgaarden?

20 MS. BOOMGAARDEN: No questions. Thank you.

21 CHAIRMAN BAGLEY: Thank you.

22 Council members.

23 Deb?

24 COUNCIL MEMBER BAUMER: No questions.

25 CHAIRMAN BAGLEY: Meghan?

1 COUNCIL MEMBER LALLY: I don't think so.

2 Thank you.

3 CHAIRMAN BAGLEY: Nick?

4 COUNCIL MEMBER AGOPIAN: No.

5 CHAIRMAN BAGLEY: And I have no further
6 questions either.

7 THE WITNESS: Goodness, I did a good job.
8 Or a bad job.

9 CHAIRMAN BAGLEY: I want to thank you for
10 being here today.

11 THE WITNESS: I do want to also thank the
12 council for taking this much time out of your busy lives
13 and coming to --

14 CHAIRMAN BAGLEY: Ms. Anderson, anything?

15 THE WITNESS: -- oversee this.

16 MS. ANDERSON: Dr. Bagley, I really don't
17 want to ask about the reading habits in the bathroom of
18 Ms. Malone, so I think I have no further questions.

19 CHAIRMAN BAGLEY: Thank you for that.

20 THE WITNESS: Thank you.

21 CHAIRMAN BAGLEY: Thank you.

22 THE WITNESS: I'm dismissed?

23 CHAIRMAN BAGLEY: You may step down.

24 Let us take a 10-minute break, then we will
25 continue.

1 MR. GILBERTZ: Thank you.

2 (Hearing proceedings recessed

3 10:53 a.m. to 11:05 a.m.)

4 CHAIRMAN BAGLEY: Okay. We are back in
5 session.

6 Just for everyone's information. Ms. Anderson
7 does have additional witnesses, but we will not be -- they
8 will not be testifying today. The hearing will remain
9 open. And I'll mention at the end of our testimonies today
10 how that will proceed.

11 But you have agreed to let Mr. Gilbertz go ahead
12 and call a witness.

13 So please, Mr. Gilbertz.

14 MR. GILBERTZ: Thank you. Call Mary
15 Brezik-Fisher.

16 (Witness sworn.)

17 MARY BREZIK-FISHER,
18 called for examination by the Fishers, being first duly
19 sworn, testified as follows:

20 THE REPORTER: Now, you're going to have to
21 really speak up.

22 DIRECT EXAMINATION

23 Q. (BY MR. GILBERTZ) Mrs. Fisher, would you state
24 your full name for the record, please.

25 A. First, I just have to say I think I caught what

1 Ms. Boomgaarden has, so I'll do my best.

2 Mary, M-A-R-Y, Brezik-Fisher, B-R-E-Z-I-K, dash,
3 Fisher, F-I-S-H-E-R.

4 Q. Mrs. Fisher, where do you live?

5 A. I live along the Tongue River Valley, between
6 Sheridan and Ranchester.

7 Q. The photograph we have up, Fisher Number 1, is
8 your property located near or on this photo?

9 A. Yes, it is. It's located towards this
10 right-hand corner.

11 Q. And is your husband here with us today?

12 A. Yes, he is.

13 Q. He's there in the back back there trying to hide
14 to make sure I don't call him.

15 A. Probably.

16 Q. Now, everybody else in the room knows, but the
17 council doesn't. Mrs. Fisher, we know each other outside
18 of attorney-client, don't we?

19 A. Yes, we do.

20 Q. And how is that?

21 A. I work with you at Yonkee & Toner.

22 Q. Okay. Occasionally do the partners at Yonkee &
23 Toner force you to work with me?

24 A. Yes, they do.

25 Q. Now, Mary, I know you've got to see witnesses a

1 number of times in the courtroom. I suspect you're
2 getting a new appreciation of how stressful it might be.

3 A. Most certainly.

4 Q. Bear with us, and we'll get through this. Let's
5 start with some easy questions. Give the council a brief
6 description of your and David's background before you came
7 to Wyoming.

8 A. I'll try to be brief, but my husband has been --
9 his career has been spent in the field of education for
10 over 40 years. He -- he taught in school or schools in
11 Iowa, initially, I believe. And then he taught at Ball
12 State University in Muncie, Indiana.

13 From there he taught in some inner city -- he
14 was -- I'm sorry, not taught. He moved to an
15 administrative position with some inner city schools in
16 Indiana and Ohio. And then from there, he became the
17 director of teacher education in Urbana College in Urbana,
18 Ohio.

19 And from there we then moved out to Wyoming, and
20 I guess I can go into that -- the rest of that story after
21 I address my --

22 Q. Now, I ask this because I understand that you
23 were a probation officer at one point in time.

24 A. Yes, I was. A juvenile probation officer.

25 Q. Was that in Indiana?

1 A. Yes. In Lake County -- Lake County, Indiana.

2 Q. Can you tell the council what it was that
3 brought you and Mr. Fisher to Wyoming?

4 A. We were living in Ohio at the time. And we had
5 been coming out to the Bonneville Salt Flats in Wendover,
6 Utah for a number of years. And we, of course, traveled
7 through Interstate 80, southern Wyoming. And I had -- one
8 of my brothers lives -- lived in Casper, Wyoming. And we
9 always made an effort to stop and spend some time with
10 him. He had worked -- has worked in the oil industry
11 during his entire career. He's now retired.

12 Q. I'm pleased you brought up your travels to
13 Bonneville. Is it true that, in fact, you hold the
14 women's land speed record for racing in Bonneville?

15 A. Yes, I do.

16 Q. So will you tell us, then, how you come to be in
17 Wyoming?

18 A. On our trips out to the Salt Flats -- oh, and I
19 should mention that my land speed record was faster than
20 my husband's. I want that on the record.

21 As I said, we had been coming out and we would
22 stop in Casper to visit my brother. And we traveled
23 around a little bit on occasion, and we really loved the
24 state of Wyoming. The oil industry was booming at the
25 time. This was in the late '70s, '79, 1980, early part of

1 1980. And we had decided -- things in Ohio, economically,
2 were experiencing a great downturn. The college where my
3 husband was was experiencing major budget cuts and the
4 economy was not improving. A lot of people were losing
5 their jobs. And we just thought this might be a good time
6 to make a break and go someplace and do something
7 completely different or just see what the new landscape
8 had to offer.

9 So we made a decision and we packed up our
10 things and did what we needed to do to sell our house and
11 packed everything up and came out here. And we initially
12 stayed in Casper with my brother for a few months.

13 Q. What -- what was the thing that came to be your
14 profession once you arrived in Wyoming?

15 A. Well, one day my husband, I believe, saw an ad
16 in the paper, in the Casper paper, and he showed it to me
17 and we both kind of thought, well, this might be something
18 really interesting to do, a different chapter in our
19 lives. There was an ad for managers of a guest ranch,
20 Paradise Guest Ranch, which is one of the oldest dude
21 ranches in the country. And the company who owned
22 Paradise Guest Ranch was Apache Oil out of Minnesota.

23 So we applied. We didn't really think that we
24 would hear anything, but we did. And we were scheduled
25 for an interview, and we interviewed for that position,

1 and we got the job.

2 Q. Just briefly, give the council a quick synopsis
3 of what -- after Paradise Guest Ranch what you did until
4 the time frame in which you bought the property we're
5 going to be talking about today.

6 A. We were at Paradise Guest Ranch for
7 approximately three years. And then my husband was
8 offered a position with the Gillette school district. So
9 we moved to Gillette, and David became -- he had dual
10 position. He was -- Gillette had just opened an
11 alternative school, the Gillette school district. And he
12 became the director and principal of the alternative
13 school. And at the same time he became the director,
14 through the school district again, of the vocational
15 technical secondary -- postsecondary school in Gillette.

16 Q. Did David have occasion to come in contact with
17 mines in Gillette in that position?

18 A. Yes, he did.

19 Q. How was that?

20 A. He developed a mine training program for new
21 miners. And he also had developed a certified welding
22 program for -- and a number of those students ended up
23 getting jobs at the mines. So he had a lot of contact
24 with mine officials, setting up these programs and
25 implementing the programs.

1 Q. During this time frame, did you at some point
2 become a paralegal?

3 A. Yes, I did. I actually moved to Denver in 1986.
4 I had applied with the Denver Paralegal Institute. I'd
5 always been interested in law, and -- especially after my
6 work in the juvenile justice system in Indiana -- and I
7 decided that that would be a pretty good field to go into,
8 that depending on where we ended up, I probably could get
9 a job just about anywhere. So I did that. It was a six-
10 months intensive program, and with the last month being an
11 internship with district court judge in Denver.

12 Q. So let's take ourselves up in time to roughly
13 when you and David purchased the property we're going to
14 talk about today. You remember how you first came to know
15 about this property and look at it?

16 A. Well, actually, my husband was -- well, I guess
17 I should say from Gillette, then, he was offered a job at
18 Sheridan College as the dean of the Agriculture Health and
19 Technical Careers Divisions. So we moved from Gillette to
20 Buffalo because I had been offered a job with a large --
21 with a law firm in Sheridan. Not Yonkee & Toner yet, but
22 Davis & Cannon. So we lived in Buffalo, and David drove
23 to Gillette every day to work and I drove to Sheridan.

24 Q. And then sometime after that was when David
25 became the dean of the ag department up here?

1 A. Correct.

2 Q. So then after that is -- let's talk about the
3 property that we have at issue. What caused you to have
4 interest in or look at this particular piece of property?

5 A. David worked with Joan Tillez, who was the
6 director of the dental hygiene program at Sheridan
7 College. And Joan's brother you met, Anton Bocek, a few
8 minutes ago who testified here. He is our neighbor just
9 up the road from us. And Joan had mentioned to David one
10 day that she knew that we had been looking for property
11 outside of town, and she mentioned to him that there was a
12 fellow -- an older fellow who owned property down the road
13 from her brother on Slater Creek Lane. And she encouraged
14 David to go out and look at it because she thought that it
15 might be something we would be interested in. So he did
16 that without telling me, and he absolutely loved it. And
17 he told me about it that evening and so we drove out there
18 the next day.

19 Q. Okay. Did you find the location of the property
20 attractive?

21 A. Immensely.

22 Q. What about it was attractive to you?

23 A. We both wanted to live outside the town. Even
24 though I wasn't raised in a rural location, David was
25 raised on a farm. And you may have heard the expression

1 you can take the boy out of the farm, but you can't take
2 the farm out of the boy. And that's how it -- kind of how
3 it was with David. We looked at the -- when I saw the
4 property, I thought it just had everything we had been
5 looking for. A view of the mountains in the background,
6 the river, wooded areas, hayfields. It was somewhat
7 isolated, but yet, it was accessible to the highway so
8 that we could both get back and forth to work.

9 Q. So happy with the location. How were the
10 amenities? How was the house and the surrounding
11 structures?

12 A. Well, David saw -- I guess when you see the
13 photo of what the house looked like, I looked at David
14 when I first saw it and I thought he was crazy. It looked
15 like it was going to entail a lot of work.

16 Q. What did you understand about how long it had
17 been since anyone had lived in the home?

18 A. It was our understanding, in talking with the
19 fellow who owned it, Mr. Addleman, that his wife had
20 passed away a couple years earlier and they had lived in
21 Ranchester, but they had owned the property for a number
22 of years. I believe in the 1950s he purchased it. And
23 they -- but they hadn't lived there. His wife had become
24 ill and they hadn't lived there about 15 years. No one
25 had.

1 Q. Let's take a quick look at that. We have Fisher
2 Number 2 here. Is this similar to what the house looked
3 like when you first bought it?

4 A. Yes, it is.

5 Q. Okay. And then over time did you come to have
6 any understanding of the history of the home, how long it
7 had been there, things of that nature?

8 A. Well, yes. Quite obviously it was quite old.
9 We have a rock building on the property that has initials
10 etched on it with the date of 1913.

11 Q. We'll take a look at that photo in a minute.
12 Did there ever come a time of the descendants of the
13 people who built the house happened to come by?

14 A. Yes. A carload of folks drove up one afternoon,
15 and they introduced themselves as being descendants of
16 people who used to own it and live in the house. And they
17 were very interested in the history and what the property
18 looked like and what had happened to the property since
19 their descendants had left -- since their heirs had left.
20 Not heirs.

21 Q. We have a photo up here, Fisher 2.2. What is
22 this a photo of, if you know?

23 A. Well, the people who came to our house that day,
24 I believe his name -- I think his name was Stan Navarro.
25 And he had this picture he had showed us. And he was

1 identifying or attempting to identify the folks in the
2 photo. And he said he believed it was a wedding party.

3 Q. Did you understand the house to be the house
4 that you were looking at buying -- or the one you had
5 already bought at that time?

6 A. We had already bought, right. We had already
7 bought it, yes.

8 Q. So let's talk a moment, then, about a few photos
9 here. We won't take a lot of time, but enough just to see
10 a little bit about the property. What is this a picture
11 of?

12 A. This is the rock barn structure that's on the
13 property.

14 Q. And you were mentioning it has a date etched in
15 it. This looks like it's not presenting quite as well as
16 we might hope, but --

17 A. Yes. It says -- the initials are LS, and the
18 date is July 26, 1913. And it's my understanding, in
19 research in looking at our deeds and speaking with the
20 folks who stopped to visit us that day, there was a couple
21 named Leon and Mary Shegoski, and I can't begin to tell
22 you how to spell that. And I guess I would assume that
23 that -- those initials are from Leon Shegoski.

24 Q. Is this a picture of another structure on your
25 property?

1 A. Yes. That's -- that's as you're coming up the
2 road to our place. That's on our property. And it's our
3 understanding that coal miners actually lived in there --

4 Q. You see --

5 A. -- at one time.

6 Q. -- a little chimney sticking out of the roof on
7 there.

8 A. Yes.

9 Q. Okay. And then this is back to the house as you
10 bought it, right? Fisher 6 -- 2.6?

11 A. Yes. David's version of a fixer upper.

12 Q. Okay. Start with the fixer upper part. This is
13 quite a number of years into the future, I take it?

14 A. Excuse me?

15 Q. This is quite a number of years after that first
16 photo we looked at?

17 A. Yes. We bought the property in 1996, and we
18 worked on it extensively and didn't move in for six
19 months, until January of 1997, and we continued to work on
20 the property while we lived there.

21 Q. Okay.

22 A. This was -- excuse me. This would be our
23 version of Phase I of the property.

24 Q. Okay. And we can see from this photo, did you
25 keep the original structure intact and try to maintain it

1 as part of the new house?

2 A. Yes. That was very important, especially to my
3 husband. He really loved the hip roof structure. You
4 don't see that too often. And we wanted to maintain that
5 historical architecture, so to speak.

6 Q. And I've seen a great picture of you in bib
7 overalls working up in the attic space of this, but I knew
8 somehow my technology would fail me if I tried to show
9 that photo, so...

10 Did you actively help your husband working on
11 the house in doing this Phase I project?

12 A. Yes. We spent many, many hours.

13 Q. Why in the world would you guys have boughten
14 such a rundown and dilapidated place?

15 A. Well, Sheridan County property values are quite
16 high. They have been for quite some time. David and I
17 had traveled -- we would spend many weekends driving
18 around Sheridan County, Johnson County, the Big Horn area,
19 and we just came to the understanding that there was --
20 our finances just wouldn't allow for us to -- to find
21 property with -- at that expense, unless we chose some
22 property which we would need to work on and renovate.

23 Q. Let's take a look at what you call Phase II of
24 the house. I see now that the porch has been enclosed.

25 A. Yes.

1 Q. And there's a lot of rock work put there on that
2 front porch and around over by the walk-in door. Who did
3 all that rock work?

4 A. David and I.

5 Q. And what is this a photograph of, Mrs. Fisher?

6 A. That's a view coming down the driveway to the
7 house. You can see the house is in the background. You
8 can kind of barely see it through the trees there. A lot
9 of mature trees on property. David mostly planted a
10 number of pine trees, which are now mature trees. And
11 you'll see the -- this is a new fence we had just
12 completed a year ago.

13 Q. And this is a photo awfully hard --

14 MR. GILBERTZ: Is that okay for you guys to
15 see? It's horrible for me.

16 MR. RUBY: I'll turn the lights down.

17 MR. GILBERTZ: Thank you.

18 Q. (BY MR. GILBERTZ) We're still on Fisher
19 Exhibit 2. Little better.

20 On this -- is any of your property shown in this
21 photograph?

22 A. Yes.

23 Q. And what direction are we looking in the
24 photograph?

25 A. Well, the mountains you'll see in the

1 background. Our property is right -- sort of right in
2 here. You can barely see the house. And this is part of
3 our neighbor's property.

4 Q. You see the land between where you pointed the
5 house out and the picture where -- or the location where
6 this picture is taken, is some of that land yours?

7 A. Yes. Shows part of our hayfields.

8 Q. So that's the point -- this photograph shows a
9 portion of your hayfields?

10 A. Yes.

11 Q. And is this a picture of the same area?

12 A. Yes. Just a different version. Again, the
13 house is right in that area.

14 Q. Good. I think we're done with that, and I want
15 to move on to some of the concerns that you have in just a
16 moment. But can you tell the commission about some of the
17 types of wildlife and things that you see around your home
18 that are important to you?

19 A. Well, when I left for the proceeding this
20 morning, our resident Sandhill Crane was in our hayfield.
21 We have a couple of Bald Eagles who have nested just down
22 the river from us. We see them quite frequently. We have
23 just -- I mean, turkeys, pheasants. I've been out mowing
24 the front yard and a fox has run right by me in the
25 hayfield. We actually have coyotes. Occasionally we'll

1 hear the coyote pups howling across the river. And, oh,
2 just recently, maybe a year or so ago, we were told that
3 there was a small black bear sighted on our neighbor's
4 property. And, of course, we have deer everywhere.
5 And -- and -- oh, and also the -- I had mentioned to you,
6 Jay, about seeing the Great Blue Heron quite frequently
7 along the river.

8 Q. Let's talk a little bit about the mine, some of
9 your concerns. How was it that you first came to learn
10 that there was a proposal or someone investigating
11 potential of the mine in the area?

12 A. The first that we heard of it was July of 2013.
13 My husband called me. I was at work, I believe, that day.
14 And he and our neighbor across the river, John Buyok, were
15 out in our hayfield. John, Mr. Buyok, does the haying for
16 us and they were working on a baler, I believe, that had
17 broken down. And at one point my husband happened to look
18 up and within about a hundred feet or so he saw two people
19 on the property, and they appeared to be crouching down
20 and looked like they were digging for something.

21 And so he said to Mr. Buyok, "Well, that's odd.
22 Who are those people? You know? And so the two of them
23 started to walk towards the two individuals in the
24 hayfield. And I might add that the two individuals
25 certainly could have seen my husband and Mr. Buyok out in

1 the hayfield, and they made no effort to come forward and
2 identify themselves.

3 So my husband and Mr. Buyok walked up to them
4 and David asked, "Who are you and what are you doing?"
5 And they indicated that they were there to take some type
6 of samples. And David said, "Well, who authorized you to
7 be here?" And they indicated that it was Ramaco. Well,
8 David had never heard of Ramaco. And he asked John who --
9 who -- what is that? And at that point John had
10 mentioned -- or I believe it was after the two individuals
11 left by crawling through the fence, mentioned that Ramaco
12 is a company that is apparently going to be proposing a
13 new coal mine in the area.

14 Q. Okay. Did you -- after this interaction, did
15 you complain at all about these folks having come on your
16 property without permission?

17 A. Yes. My husband -- as I said, he called me to
18 report this and asked me if I knew anything about a
19 company called Ramaco, and I said I did not. I've never
20 heard of that. A couple days later, I prepared a letter
21 and we sent a letter to BKS Environmental Associates, I
22 think it was.

23 Q. We've got that as Fisher Exhibit Number 6. Is
24 is a copy of the letter that you sent to BKS addressing
25 the fact that folks had come on your property without

1 permission?

2 A. Yes, it is.

3 Q. Why was it sent to BKS?

4 A. Well, because my husband had noticed a white
5 truck parked on our neighbor's property the day of the
6 trespass incident, and then the very next day, he was
7 taking our daughter and grandchildren who had been
8 visiting us. He was taking them back to the Billings
9 Airport. And as he drove down the frontage road, he saw
10 three white trucks with BKS on the -- identified on the
11 truck.

12 Q. Did you ever receive any response from BKS to
13 your complaint letter?

14 A. No, we did not.

15 Q. Did you receive any response from anyone at
16 Ramaco to your complaint letter?

17 A. No, we did not.

18 Q. Now, Mrs. Fisher, I don't want to spend too much
19 time doing this, but there's been some suggestions that
20 objectors didn't bother to investigate the details of the
21 mine plan or understand what was being proposed. I want
22 to visit with you for a little bit about what you did.

23 Once you learned there was a proposed mine in
24 the area, as things moved along, what was some of the
25 first things you did to inform yourself about this

1 potential mine?

2 A. Well, I started to look on the Internet for
3 information about Ramaco. As I said, I had not heard of
4 them. And I was able to pull up a prospectus of the
5 company. And -- and then I also began researching
6 information on potential impacts of a coal -- coal mine
7 being proposed.

8 Q. How did you do research about the potential
9 impacts of the coal mine?

10 A. Mostly on the Internet.

11 Q. I'm obligated to ask you, was any of that on
12 your work computer? You don't have to answer.

13 A. I spent many lunch hours and nights and
14 weekends. We have a home computer.

15 Q. Very good. So was there ever a time that you
16 attended any landowner meetings facilitated by the Powder
17 River -- Powder River Basin Resource Council?

18 A. Yes.

19 Q. Why did you go to those?

20 A. Well, because there didn't appear to be any
21 other information from anybody else about what was
22 happening, anything about the coal mine, other than I
23 started to see articles in the newspaper from Ramaco
24 individuals, I believe mainly Mr. Adkins. And they
25 were proposals for a pretty big mine employing about

1 600 people. And so you know, I was wondering why haven't
2 we heard anything about this from anybody.

3 Q. Were you looking for more information?

4 A. Absolutely.

5 Q. We heard a little bit yesterday about an early
6 meeting at which Jeff Barron from Western Water
7 Consultants attended one of these meetings. Do you recall
8 whether you were present at that same meeting?

9 A. Yes. My husband and I were present. It was my
10 understanding -- I seem to recall seeing something, maybe
11 a brochure or something, advertising that there was going
12 to be a meeting for landowners who were interested in
13 learning more about the Brook Mine.

14 Q. How did that particular meeting start, if you
15 remember?

16 A. Well, it was held at the library in Sheridan.
17 They have a room there, which when we walked in, it was
18 completely full. And everyone sat down and the rest of
19 the folks were standing in the back. And I believe it was
20 Jill Morrison asked everybody -- well, people signed in.
21 Some people -- they had a sign-in sheet. And then
22 everyone kind of sat down, and the rest of the people were
23 standing in the back when there were no more seats
24 available. And then Jill identified herself and asked the
25 rest of the folks there to identify themselves and

1 indicate if they were landowners. And so we went around
2 and everyone introduced themselves. And most of the folks
3 who were landowners indicated that they were landowners.

4 Q. Okay. Did anyone during that initial round
5 identify themselves as being present on behalf of Ramaco?

6 A. No, they did not. But I happened to notice
7 Shelleen Smith was in the audience, and I knew that she
8 was a city councilwoman, and I knew that she didn't -- was
9 not -- did not live out in that area, as far as I knew,
10 and I was wondering what city council was doing there. So
11 I raised my hand and asked if -- and asked if anybody was
12 attending the meeting who was there on behalf of Ramaco,
13 and I believe I also asked if anyone was there from the
14 DEQ.

15 Q. Okay. And what happened then?

16 A. Then Shelleen Smith identified herself as being
17 there on behalf of Ramaco. And I believe that Mr. Barron
18 was sitting next to her, and he identified himself as
19 being there on behalf of Ramaco.

20 Q. Yesterday the council heard from Mr. Barron that
21 at this meeting he offered that anyone who wanted to come
22 by his office could to ask questions. Do you recall that,
23 said at this meeting?

24 A. I don't recall.

25 Q. So we've talked a little bit about you doing

1 reading and research to understand some of these things.
2 In -- let's go forward to about April of 2016. What other
3 things were you doing in that time frame to try to
4 understand this mine plan and what was going to happen?

5 A. Well, I was -- I had reviewed I believe we were
6 having meetings, the Resource Council had series of
7 meetings for landowners who were interested in getting an
8 update on what was transpiring with the mine plan. I
9 began reviewing documents that were available, like the
10 mine plan, portions of it. At some of these meetings Jill
11 or Shannon would bring plat maps showing the phases of the
12 mine operation, and we were able to view those.

13 Q. Did there -- was there a time ever that you were
14 supportive of a request to the DEQ for a meeting with the
15 landowners?

16 A. Yes. Yes.

17 Q. Was that around April of 2016?

18 A. Yes. In April of 2016, it appeared that by that
19 time there was more of an indication that things were
20 progressing with the mine plan, and there were many
21 changes that had been made up to that point, I believe.
22 But yet there were a lot of uncertainties and a lot of
23 issues that didn't seem to be addressed by anyone. And
24 the landowners, as a group decided -- you know, we had
25 varying backgrounds. We had coal miners. We had an

1 engineer. We had people like us in different fields.
2 Everyone had issues. And discussing them openly in a
3 setting like a meeting, an informal meeting, was very
4 productive and helpful to all of us. And we felt that it
5 would be -- we were at a point where we really would like
6 to have sat down with somebody like DEQ and/or Ramaco and
7 discussed some of these concerns collectively as a group.

8 Q. And, Mary, I would like to go ahead and flesh
9 out a little bit more what you did, but we want to move
10 along a little bit faster. Okay?

11 A. Okay.

12 Q. So if you know, was a request made to DEQ for a
13 meeting with them and potentially Ramaco to discuss these
14 issues?

15 A. Yes. I believe there were several requests
16 made.

17 Q. And what was your understanding of the response
18 that was received?

19 A. The request for an informal meeting or just
20 meeting with the landowners was not agreed to by the DEQ.

21 Q. Okay. And we know from Fisher Exhibit 17, I
22 believe, which we were able to obtain in discovery
23 internal emails inside the DEQ that show us that request
24 was, in fact, received by DEQ, correct?

25 A. Yes.

1 Q. Okay. Now, in addition to trying to inform
2 yourself by involving yourself with DEQ, we've heard all
3 about the mine plan. Did you ever have occasion to look
4 at the 80-page mine plan?

5 A. Yes, we both did. My husband and I.

6 Q. Did you ever have a chance to look at the
7 adjudication file?

8 A. Yes.

9 Q. Okay. And did you?

10 A. Yes.

11 Q. I didn't ask you that question. Did you look at
12 this?

13 A. Yes.

14 Q. Did you read all 80 pages?

15 A. I reviewed every page, yes.

16 Q. Okay. We got all those binders up behind you.
17 Did there ever come a time you had access to those?

18 A. Yes. We had access to -- I don't believe there
19 were all -- I don't recall if there were all 13, but there
20 were a number of volumes. In one of our meetings -- I
21 don't remember the date -- but Jill and Shannon indicated
22 that if any landowner was interested in reviewing the mine
23 plan in detail, that they would have -- that they had
24 checked the mine plan out from -- with DEQ and had these
25 volumes available at their offices -- at their office in

1 Sheridan. So my husband and I went there one morning,
2 arranged to a -- a time to be there and indicated that we
3 were interested in reviewing the volumes of materials.

4 Q. Did you and your husband, in fact, look at
5 materials from those big binders of materials?

6 A. Yes.

7 Q. And about how long did you spend wading through
8 the gobbledygook?

9 A. Oh, over an hour, and it could have been two,
10 because there were also a number of plat maps available.

11 Q. So to be clear, Mrs. Fisher, did you do all
12 these things to try to understand and inform yourself
13 about the mine and the plans before you filed an
14 objection?

15 A. Absolutely.

16 Q. Why did you decide to file an objection?

17 A. Well, I guess it was our understanding all along
18 that there would be an opportunity for some sort of a
19 meeting with DEQ in particular, and perhaps even with
20 Ramaco, so that landowners who potentially could be
21 impacted would have an opportunity to ask questions and
22 hopefully resolve some issues, which I think we very well
23 could have done in that forum.

24 Q. Are you telling us that you thought filing the
25 objection would get you that?

1 A. Absolutely. And as a matter of fact, even
2 before we received the public notice to file a written
3 objection, all along for all these months -- I mean,
4 Sheridan and Sheridan County, as in other communities,
5 have numerous regular public meetings addressing issues
6 involving fluoride in the water, a new permit for a gravel
7 pit, issues concerning revisions in pathways for the local
8 city park, things of that nature. So I guess we just
9 assumed there would certainly be a meeting or meetings, a
10 series of meetings, set up to address concerns of
11 landowners within a half-mile boundary of a new coal mine.

12 Q. When you prepared and filed your objection, did
13 you have any earthly idea that this was what you were
14 going to get?

15 A. I certainly did not.

16 Q. Now, just to be clear, did you ask me or any
17 other attorney at Yonkee & Toner to help you in any way
18 with your objection letter?

19 A. I did not.

20 Q. When did that change? You came to speak with
21 one of the lawyers?

22 A. That changed when our letter was submitted along
23 with other objectors, and David and I received a letter
24 from Todd Parfitt from the DEQ, I believe it was dated
25 January 30, 2017, in which Mr. Parfitt indicated that the

1 DEQ was denying our request for an informal public meeting
2 or hearing.

3 Q. Now, Mrs. Fisher, let's talk a little bit about
4 some of the specific complaints that you have. One that
5 was raised was a complaint that the way the application
6 materials had been drafted was that protections would only
7 be afforded to adjudicated wells, right?

8 A. Right.

9 Q. And you know now, we've heard in these
10 proceedings, there's been an agreement to change to to be
11 including permitted wells, not just adjudicated, correct?

12 A. Yeah.

13 Q. How does that make you feel that change has been
14 accomplished?

15 A. Well, I very much appreciated that, as did my
16 husband, as I'm sure other landowners feel. But I -- I
17 really wondered why the issue didn't come up or could not
18 be addressed until we submitted a request in our discovery
19 in this contested case proceeding.

20 Q. Let's talk about some of the continuing issues
21 or concerns about water. What is your understanding of
22 the source for the water in your well at your house? What
23 does it come from?

24 A. My understanding is that it comes from coal --
25 through coal seam.

1 Q. And do you understand whether or not Brook has
2 predicted that you will suffer a drawdown -- you are
3 likely to suffer a drawdown as a result of the mining
4 activities?

5 A. Yes. I was here for Mr. Barron's testimony the
6 other day.

7 Q. Yet during Mr. Barron's testimony you heard him
8 say that your well has a high column of water. Did you
9 hear that?

10 A. Yes.

11 Q. I'm certain Mr. Barron got that from information
12 on the original drill well log the day the well was
13 drilled 34 years ago. Do you believe there's a large
14 column of water standing in your well today?

15 A. I do not.

16 Q. Has Mr. Barron ever been to your place to
17 inspect and determine what the actual level of water is
18 now in your well now, 34 years later? 34 years after the
19 permit.

20 A. Well, I guess he didn't indicate how that --
21 that date was established.

22 Q. Okay. Well, we can do it -- the permit for
23 you -- for your water well is contained within the mine
24 plan records, correct?

25 A. Correct.

1 Q. All right. Do you remember off of the top of
2 the head -- off the top of your head when that well was
3 permitted, meaning the --

4 A. Approximately 1978.

5 Q. What informs the basis of your concern that your
6 well is at risk for some sort of material damages as a
7 result of dewatering?

8 A. Well, Mr. Barron testified the other day that
9 there would be a drawdown on our well. Well, we have two
10 wells, but I believe you just addressed the one by the
11 house, and he indicated that we would have a 5-foot
12 drawdown.

13 Q. Is there anything else that informed your
14 concern in this regard?

15 A. Well, after hearing that testimony from
16 Mr. Barron when we left here that day, we went back to the
17 office. My husband was with me and we looked at our
18 permit documents regarding that well. And I believe that
19 evening Mr. Wireman had stopped in the office to visit
20 with I believe -- you may have asked him to come by to
21 visit with you, and he showed up. And being that
22 Mr. Wireman is a hydrologist, I showed him our permit
23 documents.

24 Q. And why does that inform your concern about your
25 wells?

1 A. Because he looked at them and he indicated to us
2 that he had grave concerns about the drawdown on our well.

3 Q. There has been some discussion during the course
4 of these proceedings about a potential condition on the
5 permit that doesn't just say that there will be -- that
6 mining company will be obligated to replace the quantity
7 and quality generally, but making that a bit more
8 specific. If this application is going to proceed, is
9 that the kind of condition you would like this council to
10 consider?

11 A. Yes.

12 Q. Let's talk about the Tongue River very briefly.
13 Do you and your husband rely to any degree on the quality
14 and quantity of water in Tongue River?

15 A. Yes, we do.

16 Q. What do you use it for?

17 A. We irrigate. We have hayfields.

18 Q. Do you have a surface water right from the State
19 Engineer's to do that?

20 A. Yes.

21 Q. One of the things that you brought up in your
22 complaint letter was about the way the quality and
23 quantity of the Tongue River would be monitored. Do you
24 remember that?

25 A. Yes.

1 Q. And you understand from these proceedings that
2 now there's an agreement to -- to consider that and alter
3 the way the Tongue River will be monitored?

4 A. Yes. I understand DEQ has agreed to install
5 additional monitors upstream and downstream as a result of
6 our request in discovery.

7 Q. Good. How do you feel about that?

8 A. I'm very appreciative of that.

9 Q. Let's talk about the alluvial subsurface water
10 by you. And I know folks are trying to get you placed in
11 comparison to everything that we've seen in the case. So
12 I'm going to pull up DEQ Number 16, which is a map we've
13 seen a bunch, Mrs. Fisher. And so this gives us the Brook
14 Mine permit acreage, and it shows us an area called
15 Potential AVF Acreage. Can you tell the council whether
16 or not your property is located in the area labeled
17 Potential AVF Acreage?

18 A. It is.

19 Q. And if we zoom in even tighter, we can see -- I
20 can do both of these things at once. We can see -- right
21 here it says Section 24?

22 A. Yes.

23 Q. And over here we can see Section 19.

24 A. Yes.

25 Q. Are those two sections familiar to you?

1 A. Yes. Those are --

2 Q. Why?

3 A. -- the sections which -- within which our
4 property is contained.

5 Q. Okay. And so it overlaps -- your property is
6 near the river, correct?

7 A. Yes.

8 Q. And somewhere in the vicinity of Section 19 and
9 Section 24 come together?

10 A. Correct. Yes.

11 Q. Okay. So we've talked a bit about this being
12 labeled a potential AVF acreage, and whether or not it
13 should be classified that way. I want to be clear with
14 you. Did anyone from DEQ ever contact you and ask you if
15 they could come on your property to do studies to
16 determine if your land should be properly fully classified
17 as AVF?

18 A. No.

19 Q. Okay. Do you have any objection to DEQ doing
20 that?

21 A. Absolutely not.

22 Q. Are you aware of any of your neighbors being
23 contacted by DEQ about an AVF study?

24 A. No, I'm not aware of any.

25 Q. One thing hasn't been clear, I think I've heard

1 at times that there is maybe an agreement to put
2 monitoring wells in this potential AVF acreage, and other
3 times it sounded like maybe not. Would a -- if a permit
4 is going to be issued in this case, would a condition you
5 would like this council to consider be a placement of
6 monitoring wells in this alluvial valley floor to
7 monitor -- to monitor the water in the alluvium for
8 changes?

9 A. Yes, I think that would be important thing to
10 do.

11 Q. All right. We're going to get through them.
12 We're clipping right along now. We're going to keep up
13 the pace.

14 Let's talk about blasting for a minute. And I
15 think we can do this one pretty quickly. Your concerns
16 are the same as many of those this council has heard
17 about, correct?

18 A. Yes.

19 Q. And there has been a discussion of if it was a
20 requirement, that a homeowner could request and would be
21 provided with seismic monitoring between the mine in their
22 home, if that was a condition of the permit, that folks
23 would like that. Are you also asking the council to
24 consider a requirement that if a homeowner asks for it,
25 seismic monitoring will be placed on their property

1 between the mine and blast zone?

2 A. Yes, we are.

3 Q. One of the things you had brought up in your
4 objection letter was a concern about traffic that might be
5 associated with the mining activities and things of that
6 nature. Over time have you ever developed an
7 understanding about if the amount of coal that is mined is
8 something similar to what Brook has projected, how many
9 trucks -- semi trucks that might mean hauling coal out
10 every day?

11 A. Yes.

12 Q. What's your understanding about how many semis
13 per day that will be?

14 A. I believe at one of our meetings -- I think it
15 was at one of our meetings one of the landowners had done
16 some calculations and predicted on whatever the production
17 was at that time, the estimated production would be
18 approximately 200 semis a day.

19 Q. Okay. And is that a matter of some concern to
20 you?

21 A. Yes, it is.

22 Q. Now, I'm going to end here pretty soon,
23 Mrs. Fisher, but --

24 MR. RUBY: If I could just interrupt for
25 one second.

1 CHAIRMAN BAGLEY: Do we need a technical
2 break?

3 COUNCIL MEMBER AGOPIAN: Mr. Chairman?

4 CHAIRMAN BAGLEY: Yes.

5 COUNCIL MEMBER AGOPIAN: Or Mr. Hearing
6 Officer. I would encourage the parties not to rush. We're
7 here today, please. Don't rush your testimony.

8 CHAIRMAN BAGLEY: Thank you. Is it working
9 now?

10 MR. GIRARDIN: Hers is up, so go ahead.

11 CHAIRMAN BAGLEY: We'll wait until they're
12 all changed or whatever needs changed.

13 MR. RUBY: Go ahead.

14 CHAIRMAN BAGLEY: Is that mic working? We
15 don't see a light on it.

16 MR. RUBY: Shouldn't see the light.

17 CHAIRMAN BAGLEY: Oh, shouldn't see a
18 light.

19 MR. RUBY: Yeah, you should. I must not
20 have hit the button.

21 CHAIRMAN BAGLEY: There we go. Now we feel
22 better.

23 All right. Please continue.

24 MR. GILBERTZ: Pattern of technology and me
25 not communicating well is continuing.

1 Q. (BY MR. GILBERTZ) Mrs. Fisher, I realize that I
2 did not ask you something earlier. You talked about
3 attending a number of meetings hosted by the Powder River
4 Basin Resource Council. Are you and your husband members
5 of that organization?

6 A. No, we are not.

7 Q. So the way we thought we would come to this
8 point is that Dr. Marino and Mr. Wireman, our experts,
9 would have testified already. So I want to visit with you
10 about that for a moment.

11 A lot of folks have talked about the concerns of
12 subsidence. And we've talked all around those issues. I
13 don't think we need to visit with them any more other than
14 for me to ask you, do you share the same concerns that
15 others do about the risk of subsidence?

16 A. Yes, we do.

17 Q. Are there any special concerns that you have
18 about the subsidence as it may relate to water quantity
19 and quality?

20 A. Yes.

21 Q. And what is that?

22 A. Well, we have evidence of ongoing subsidence. I
23 guess I would have to reserve my comments about that in
24 terms of overall subsidence issues until our -- hearing
25 testimony from Dr. Marino.

1 Q. Well, won't be in a position to reserve further
2 testimony.

3 A. Uh-huh.

4 Q. But let's go about it this way. We've talked --
5 we've talked a little bit as we went through today about
6 if a permit is granted, that we would like to see some --
7 this council consider some conditions on that in relation
8 to variety of issues, correct?

9 A. Correct.

10 Q. By saying that, does that mean that you do not
11 have any remaining reservations about the adequacy of the
12 mine plan with scientific testing or studying that has
13 been done up to this point?

14 A. That I don't have?

15 Q. Yeah. That you don't have any more. That's --
16 all it is is about these conditions we visited about?

17 A. No, I can't say that that's true.

18 Q. Okay. Have you -- as you have been informed
19 about the mine plan, have you kept yourself informed and
20 abreast of the opinions of Dr. Marino and -- the
21 subsidence expert, and Mr. Wireman, the hydrology expert?

22 A. Yes, I have.

23 Q. Do those opinions cause you any concern?

24 A. Yes. I read the reports, and they do cause me
25 concern, just as Mr. Gerlach's testimony caused concern.

1 Q. Okay. And you believe that once the council
2 gets to hear from Dr. Marino and Mr. Wireman, that there
3 will then be evidence that perhaps no permit should be
4 issued at all at this time?

5 A. At this time, yes.

6 MR. GILBERTZ: Thank you, Mrs. Fisher.

7 I have no further questions.

8 CHAIRMAN BAGLEY: Thank you, Mr. Gilbertz.

9 Mr. Sutphin.

10 MR. SUTPHIN: Thank you, Mr. Chairman.

11 CROSS-EXAMINATION

12 Q. (BY MR. SUTPHIN) Good afternoon, Mrs. Fisher.

13 How are you?

14 A. I've been better.

15 Q. I'm sure you have.

16 Let me be the first, after Mr. Gilbertz, to tell
17 you congratulations on your land speed record. I knew
18 there was a reason you and I sort of got along.

19 You heard Ms. Malone testify right before you,
20 right?

21 A. Yes.

22 Q. And did you hear her expressing some concerns
23 about how this operation Brook is proposing could affect
24 the city of Sheridan?

25 A. Yes.

1 Q. Just to be clear, Ms. Malone was not speaking on
2 your behalf, was she, Mrs. Fisher?

3 A. No, she was not.

4 Q. And I think you just told us that you are not
5 currently a member of the Powder River Basin Resource
6 Council, correct?

7 A. Correct.

8 Q. But you have relied on the Powder River Basin
9 Resource as a part of this case, right?

10 A. Yes.

11 Q. You've heard in the opening statement that my
12 client or maybe me personally, I don't know, would attempt
13 to call the Powder River Basin Resource Council activists.
14 Did you hear that in Ms. Anderson's opening?

15 A. I believe -- yeah. I can't specifically recall
16 that, but, yes.

17 Q. That was -- oh, I'm sorry, Mrs. Fisher. That
18 was actually a term you brought up in your deposition,
19 right?

20 A. Correct.

21 Q. And I think you said that you saw in a newspaper
22 article that Randall Adkins, the CEO at Ramaco, had made a
23 comment calling landowners activists, right?

24 A. That was my recollection, yes.

25 Q. And you didn't like the idea of being called an

1 activist, correct?

2 A. I didn't like the idea of being generalized. I
3 don't -- Mr. Adkins doesn't know me or my husband.

4 Q. And, in fact, I think in your deposition, as one
5 of the reasons why you are not a member of the Powder
6 River Basin Resource Council, you told me you didn't want
7 to be lumped in with a bucket of activists, right?

8 A. Correct.

9 Q. Now, I know you're -- you felt uncomfortable
10 about the formalities of this proceeding, right?

11 A. Yes.

12 Q. By the way, you're doing a marvelous job. And I
13 understand that it's not a fun seat to be in. But
14 notwithstanding the formalities, you would agree with me
15 that you've now had an opportunity to have the public
16 meeting that you were hoping to get with your objection
17 letter, right?

18 A. Well, it's not exactly the forum that I was
19 expecting, no.

20 Q. Okay. Would you agree with me that the denial
21 of your request for an informal conference was a decision
22 made by the director of the DEQ?

23 A. Could you restate that, please?

24 Q. I certainly can.

25 What I'm getting at is you don't believe that

1 the decision to deny the informal conference was a
2 decision made by my client, Brook Mining Company, do you?

3 A. I don't have any evidence to that effect, no.

4 Q. The letter that you received denying the
5 informal conference was a letter you received directly
6 from DEQ, right?

7 A. Correct.

8 Q. Okay. You told me at your deposition that
9 you're not an expert, right?

10 A. No, I'm not. Not in mine plans.

11 Q. Okay. And to be fair, that's true. I've seen
12 you in action now, and I would have to say you are most
13 definitely an expert at being a paralegal. But you're not
14 an expert at mine plans, right?

15 A. Right.

16 Q. Now that you've heard in this meeting, in this
17 evidentiary hearing, from the representatives of the
18 Department of Environmental Quality, would you agree with
19 me that they are experts?

20 A. Yes. I would say that they are experts, uh-huh.

21 Q. And I mean --

22 A. Very well qualified --

23 Q. Excuse me.

24 A. -- some of them, yes.

25 Q. I mean, you would agree, for example, that --

1 that Dr. Kuchanur, with his PhD and his experience, is an
2 expert in groundwater modeling, right?

3 A. Yes.

4 Q. And I understand that there are yet some experts
5 to testify, but is it your position today that the
6 testimony you heard from the experts at DEQ is not enough
7 to satisfy the objections that you've raised?

8 A. Yes.

9 Q. When you moved to the area out around -- well,
10 when you moved into the area where you live now, you knew
11 that there had been historic coal mining out in that part
12 of the county, right?

13 A. Yes.

14 Q. And you also knew at that time that because
15 there's still coal out there, there could be coal mining
16 in the future, right?

17 A. I suppose. But in talking with other adjacent
18 neighbors and landowners in the area, they had
19 indicated -- well, I don't believe we even talked about it
20 at that point, when we were purchasing the property. The
21 thought never occurred to us that a new coal mine would be
22 developed there. There hadn't been coal activity -- coal
23 mine in that area in over 50 years. And, of course, the
24 fact that we lived along the Tongue River in an alluvial
25 valley floor, I guess, again, we never thought that there

1 would ever be a new coal mine opening in that proximity.

2 Q. Even though you had these questions and concerns
3 that ultimately you raised in your objection letter, you
4 never asked Mr. Barron to explain any of the company --
5 Brook Mine's position on this, did you?

6 A. No. As I indicated, we discussed this with
7 other neighbors, other landowners, of which there are
8 many, and our thoughts were that it would be beneficial
9 for us to collectively, as a group, to attempt to visit
10 with DEQ and/or Ramaco. After our experience with the
11 trespassing incident, I guess we didn't have a high level
12 of comfort with this new company that had never done
13 business in Wyoming, that had never made an effort to
14 communicate with any of the landowners, and I understand,
15 in reviewing the documents that I've reviewed in this mine
16 plan, out of the 13 volumes and thousands of pages of
17 material here, I don't believe that there's one page
18 devoted to landowner concerns, and there are well over a
19 hundred landowners, maybe closer to 200 landowners, within
20 that half a mile boundary. Mr. Kristiansen had indicated
21 in his testimony, I believe, that they had never had such
22 a large number of landowners involved.

23 Q. So I understand that you have some other things
24 that sounds like you want to say to the council, but in
25 the interest of my questions and moving them along, we'll

1 try to keep it a little more focused. Is that okay?

2 A. Yes.

3 Q. Okay. So my question was you did not ask
4 Mr. Barron to address any of the questions you and your
5 husband had, right?

6 A. No.

7 Q. Okay. Nor did you ask anyone else from Brook
8 Mining or Ramaco to address any of your questions, right?

9 A. No. I didn't know anybody from Ramaco.

10 Q. Well, you testified earlier that you knew
11 Shelleen Smith was there on behalf of Ramaco, right?

12 A. Right. Right. She was. That's correct.

13 Q. But you never asked Ms. Smith to answer any of
14 your questions, right?

15 A. No, I didn't know what her capacity was with
16 Ramaco.

17 Q. Okay. On that same line, you never went
18 personally to ask anyone at the Department of
19 Environmental Quality to address any of your concerns or
20 Mr. Fisher's concerns, right?

21 A. As I indicated, we were approaching this from
22 the perspective of there were a large group of us who were
23 questioning a number of things, had concerns. Many of us
24 were not experts in anything to do with a mine plan, and
25 we were anticipating all along, maybe naively, that given

1 the fact that all those other public hearings were going
2 on on a regular basis in this community, that at some
3 point the company would have come forward or DEQ would
4 have come forward and agreed to meet with us.

5 Q. So, again, I appreciate you -- it sounds like
6 you have more to say. I know that you told the council
7 some of those things already. But I guess what I'd like
8 to ask is that that's another example of where you and
9 Mr. Fisher were relying on Powder River Basin Resource
10 Council to help in this process, right?

11 A. Right.

12 Q. All right. I think just to wrap up,
13 Mrs. Fisher, you talked about the unfortunate first
14 interaction that your husband and Mr. Buyok had with
15 someone on behalf of -- well, I guess we assume on behalf
16 of Brook Mine, right? The trespass issue?

17 A. That we assume?

18 Q. Well, I just don't know if it was clear. Are
19 you -- how do you know that whoever was out on the
20 property that day was associated with the Brook Mine?

21 A. Well, as I indicated, the two individuals who
22 were trespassing told my husband they were there on behalf
23 of Ramaco.

24 Q. Okay. You now know that -- that those two
25 individuals were on your property mistakenly, right?

1 A. Apparently.

2 Q. Right. I mean -- I guess what I mean is you now
3 know there was no malicious intent with them going to the
4 property, right?

5 A. Well, I know that through the discovery in this
6 contested case proceeding, yes.

7 Q. Right, you now understand that they thought they
8 were actually on a different parcel, right?

9 A. I really -- I don't know that I understand that.
10 No one has directly communicated that to me or my husband.

11 Q. Well, I guess just to wrap up. You understand
12 now that that company, once they spoke to your husband,
13 they did not take any samples from your property, right?

14 A. That's what you indicated in your discovery
15 responses, so I don't know.

16 Q. And you would agree that there's no evidence in
17 the -- in the mine plan or any of the appendices that
18 shows data being collected from your property, right?

19 A. I'm not aware of seeing anything.

20 MR. SUTPHIN: Okay. Well, I don't have any
21 other questions for you. Thank you, Mrs. Fisher.

22 CHAIRMAN BAGLEY: Thank you, Mr. Sutphin.

23 Mr. LaRock.

24 CROSS-EXAMINATION

25 Q. (BY MR. LAROCK) Good afternoon. Again, I'm

1 sorry, the same question I've been asking everyone else.
2 Now that we're on the record, do you have any concerns or
3 any questions about this permit application that you
4 haven't gotten out yet?

5 A. Well, yes.

6 Q. Please go ahead and tell me about them.

7 A. Well, as I indicated earlier, I have read the
8 expert reports of Dr. Marino and Mr. Wireman, who appear
9 to be, by all accounts, very highly qualified
10 professionals. And until such time as I hear additional
11 testimony from them, I guess I would have to reserve the
12 right to address this issue further.

13 Q. Okay. Is there anything else about the permit
14 application you want to talk about?

15 A. Well, that's pretty broad.

16 Q. I know it is very broad. I'm sorry about that.

17 A. I appreciate the time and effort spent by the
18 DEQ folks. I just wish that there would have been a
19 mechanism for us to have some meetings to express our
20 concerns. I really believe we could have resolved a lot
21 of these issues --

22 Q. Okay.

23 A. -- without having to hire an attorney, I might
24 add.

25 Q. And I know you just testified that you believe

1 there will be evidence that a permit shouldn't be granted
2 at all. But were a permit to be granted, do you have any
3 other conditions you'd like to suggest about the permit?

4 A. You know, again, until hearing from Dr. Marino
5 and Mr. Wireman, I can't say that for sure. You know,
6 issues that -- that we brought up about the adjudicated
7 versus registered or permitted wells, the issue concerning
8 the additional monitoring the Tongue River upstream and
9 downstream. I guess I sort of wonder why it took us, the
10 lay people, to bring those issues to the attention of the
11 DEQ. So my level of comfort is not extremely high.

12 MR. LAROCK: Appreciate that.

13 I have no further questions for this witness.

14 CHAIRMAN BAGLEY: Thank you, Mr. LaRock.

15 Ms. Boomgaarden.

16 MS. BOOMGAARDEN: No questions. Thank you.

17 CHAIRMAN BAGLEY: Ms. Anderson?

18 MS. ANDERSON: Thank you, Dr. Bagley.

19 CROSS-EXAMINATION

20 Q. (BY MS. ANDERSON) Good afternoon, Mrs. Fisher.

21 A moment ago you were asked about the expertise
22 of DEQ. And you've been in the room most of the week,
23 right?

24 A. Yes.

25 Q. Were you here when Mr. Kristiansen testified?

1 A. Yes.

2 Q. Were you here when he testified on his expertise
3 related to subsidence?

4 A. Yes.

5 Q. Do you remember him saying that he doesn't
6 actually have expertise related to subsidence?

7 A. Yes.

8 MR. SUTPHIN: I'm going to have to object
9 to that. I think it's a mischaracterization of what
10 Mr. Kristiansen said.

11 MS. ANDERSON: Dr. Bagley, I think the
12 transcript will eventually show that he said exactly what I
13 represented he said.

14 CHAIRMAN BAGLEY: Yeah, you can go ahead
15 and ask that.

16 MS. ANDERSON: Maybe I'll phrase it a
17 different way, just for the sake of the record.

18 Q. (BY MS. ANDERSON) Mrs. Fisher, do you have any
19 concerns about Mr. Kristiansen's expertise related to
20 subsidence?

21 A. Yes.

22 Q. Okay. I have another question for you. Are you
23 and your neighbors concerned at all about property values
24 and what can happen to your property value if the mine
25 comes in next door to you guys?

1 A. Absolutely.

2 MR. SUTPHIN: Well --

3 Q. (BY MS. ANDERSON) Go ahead. Can you elaborate
4 on that?

5 A. I was just going to say, quite obviously from
6 the photo of the house when we purchased it, it's quite
7 evident that we spent a lot of time, energy and money
8 improving our property to the condition that it's in right
9 now. This is our retirement, and I am very concerned that
10 it's going to have a major impact in attempting to sell
11 our property at such time if we choose to do so.

12 MR. ANDERSON: Okay. Thank you.

13 I have no further questions.

14 CHAIRMAN BAGLEY: Thank you.

15 Council members have any questions?

16 Nick?

17 COUNCIL MEMBER AGOPIAN: No.

18 CHAIRMAN BAGLEY: Meghan?

19 COUNCIL MEMBER LALLY: No.

20 CHAIRMAN BAGLEY: Deb?

21 COUNCIL MEMBER BAUMER: No, thank you.

22 CHAIRMAN BAGLEY: I have just one question,
23 Mrs. Fisher.

24 EXAMINATION

25 Q. (BY CHAIRMAN BAGLEY) As we look at all these

1 maps -- and you probably heard me ask this question
2 before. I just try to get a feel for where you're
3 located. Are you north or south of the Tongue River?

4 A. We're north of the Tongue River.

5 CHAIRMAN BAGLEY: North. Okay. Thank you.

6 That was the only question I had.

7 I wanted to also thank you for you --

8 THE WITNESS: That was easy.

9 CHAIRMAN BAGLEY: -- yeah -- for your
10 coming and speaking with us today.

11 THE WITNESS: And I will add what has
12 already been indicated by other landowners who have
13 testified, that David and I very, very much appreciate
14 having this opportunity finally. And also having the
15 hearing up here in Sheridan as opposed to Cheyenne, which
16 was originally indicated. So we very much appreciate that.
17 Thank you.

18 CHAIRMAN BAGLEY: Mr. Gilbertz, anything?

19 MR. GILBERTZ: I've been informed that I
20 will be flayed alive if I ask any more questions by my
21 client, so no further questions.

22 CHAIRMAN BAGLEY: Not by us.

23 MR. GILBERTZ: No. My client was very
24 clear about that.

25 CHAIRMAN BAGLEY: Okay. Good. Thank you,

1 Mrs. Fisher.

2 So it is 12:20, Friday afternoon, May 26th. We
3 will shortly recess this hearing. There are additional
4 witnesses that will be presented and their testimony. And
5 we are working on a time for that. We are looking at the
6 June 8th timeframe. But Mr. Ruby will be in contact with
7 all of the parties to confirm these dates and times early
8 next week.

9 So I want to thank everybody who's been here.
10 Council members who have remained, thank you very much as
11 well. Others had wanted to be here, but had other duties
12 as well.

13 And all the folks who have been in the audience,
14 appreciate everyone's testimony. And I would like to wish
15 everyone an excellent Memorial Day weekend. I hope the
16 weather stays nice for us. And we are now recessed.

17 (Hearing proceedings recessed
18 12:23 p.m., May 26, 2017.)

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C E R T I F I C A T E

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Dated this 28th day of June, 2017.


KATHY J. KENDRICK
Registered Professional Reporter



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Subject: E-Transcript & PDF of the EQC Hearing Proceedings, Volume IV, In Re: Brook Mine, Taken 5/25/17
Date: Tuesday, June 27, 2017 10:02:05 AM
Attachments: [Brook Mine, LLC - Vol. IV.ptx](#)
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Attached are the E-Transcript & PDF of the EQC Hearing Proceedings, Volume IV, In Re: Brook Mine, Taken 5/25/17.

Thank you,

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1 BEFORE THE ENVIRONMENTAL QUALITY COUNCIL

2 STATE OF WYOMING

3 -----

4 IN RE BROOK MINE APPLICATION Docket No. 17-4802

5 -----

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7 TRANSCRIPT OF HEARING PROCEEDINGS

8 VOLUME IV

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10 PURSUANT TO NOTICE duly given to all parties
11 in interest, this matter reconvened for hearing on the
12 25th day of May, 2017, at the approximate hour of
13 8:30 a.m., at the Sheridan College, Thorne-Rider Campus
14 Center, Room TRCC 008, 3059 Coffeen Avenue, Sheridan,
15 Wyoming, before the Wyoming Environmental Quality Council,
16 with Chairman David Bagley, presiding, and Council Member
17 Meghan Lally, Council Member Megan Degenfelder, Council
18 Member Nick Agopian and Council Member Deb Baumer in
19 attendance.

20 Mr. Ryan Schelhaas, Wyoming Attorney General's
21 Office, Attorney for the Council; Mr. Jim Ruby, Executive
22 Director to the Council; Mr. Joe Girardin, Business Office
23 Coordinator, were also in attendance.

24

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1 P R O C E E D I N G S

2 (Hearing proceedings reconvened

3 8:30 a.m., May 25, 2017.)

4 CHAIRMAN BAGLEY: Good morning. It is

5 8:30 a.m., May 25, 2017. I am Dr. David Bagley, the

6 hearing officer in Docket 17-4802 in regards to Brook Mine,

7 LLC.

8 Present today from the council are Meghan Lally,

9 Megan Degenfelder, Nick Agopian and Deb Baumer. Tim

10 Flitner is absent. Councilman Fairservis has recused

11 himself.

12 Parties present today are, on behalf of Brook

13 Mine -- again, I'll let you introduce yourselves -- on

14 behalf of Brook Mine.

15 MR. SUTPHIN: Thank you, Dr. Bagley.

16 Isaac Sutphin, Jeffrey Pope and Tom Sansonetti from Holland

17 & Hart.

18 CHAIRMAN BAGLEY: Thank you.

19 On behalf of DEQ.

20 MR. KUHLMANN: Andrew Kuhlmann and James

21 LaRock.

22 CHAIRMAN BAGLEY: Thank you.

23 On behalf of Powder River Basin Resource Council.

24 MS. ANDERSON: Shannon Anderson. Thank

25 you.

1 CHAIRMAN BAGLEY: On behalf of the Fishers.

2 MR. GILBERTZ: Jay Gilbertz form Yonkee &
3 Toner.

4 CHAIRMAN BAGLEY: Thank you.

5 On behalf of Big Horn Coal.

6 MS. BOOMGAARDEN: Good morning. Lynn
7 Boomgaarden and Clay Gregersen.

8 CHAIRMAN BAGLEY: Also present for the
9 council are Jim Ruby, Executive Officer; Joe Girardin,
10 Council Business Coordinator; and Ryan Schelhaas from the
11 Attorney General's Office.

12 This hearing is being held at Sheridan College,
13 Room TRCC 008 in the Thorne-Rider Campus Center, 3059
14 Coffeen Avenue, Sheridan, Wyoming. There is a court
15 reporter present.

16 So yesterday we completed direct on the first
17 witness from Brook Mine.

18 So, Mr. Barron, can you please come forward
19 again. We'll begin cross-examination. And I want to just
20 remind the witness is he is still under oath from
21 yesterday.

22 THE WITNESS: I understand.

23 JEFF BARRON,
24 called for examination by Brook Mine, having been
25 previously sworn, testified further as follows:

1 CHAIRMAN BAGLEY: All right. Mr. Kuhlmann,
2 please begin.

3 MR. KUHLMANN: DEQ does not have any
4 questions for cross-examination.

5 CHAIRMAN BAGLEY: Great. Thank you.
6 Ms. Boomgaarden or Mr. Gregersen, please.

7 MR. GREGERSEN: Thank you, Mr. Chairman.
8 Could I get the cord for the projector?

9 CROSS-EXAMINATION

10 Q. (BY MR. GREGERSEN) All right, Mr. Barron. We
11 had the opportunity to meet a couple weeks ago, but I'll
12 go ahead and introduce myself for the record. My name is
13 Clayton Gregersen I'm with Crowley Fleck. I'm here on
14 behalf of my client Big Horn Coal Company.

15 Now, Mr. Barron, you may have come right out and
16 said it yesterday, but in any event, I think you implied
17 that you were, in fact, the lead person with WWC in
18 compliance -- in compiling, excuse me, the Brook Mine
19 permit application, weren't you?

20 A. I was, yes.

21 Q. And you were also the chief person from WWC in
22 addressing the various comments from DEQ regarding the
23 permit application and what they would like to see in it,
24 right?

25 A. Yes.

1 Q. Okay. Great. So based on that, then you would
2 be the best person for me to ask if I had any questions or
3 if I wanted to know where something was in the permit
4 application, right?

5 A. Yes.

6 Q. Now, I believe you testified yesterday that you
7 understand a coal mining permit to be a living and dynamic
8 document, and even compared it -- and compared the rules
9 and regulations regarding the permit application to
10 performance-based standards. Is that right?

11 A. That's correct.

12 Q. And I think that I understood what you were
13 getting at, but is it indeed your position that these
14 rules and regulations, along with the applicable statutes,
15 dictate what information the permit application must
16 contain, right?

17 A. It does.

18 Q. Okay. Now, I believe you testified yesterday
19 that when you're putting together the permit application,
20 you have to use and reference both the DEQ rules and
21 regulations and the applicable statutes, right?

22 A. I do, yes.

23 Q. And you also testified that in preparing
24 adequate permit application, collaboration and
25 consultation with the DEQ is critical, right?

1 A. It is, yes.

2 Q. Would you also agree, then, that collaboration
3 with nearby landowners is similarly important?

4 A. Certainly in instances where available, we do
5 want to collaborate with the public. As a matter of fact,
6 in my work with the permit application, we had several
7 opportunities to interact with the public. The PRBRC held
8 a meeting on February 12, 2015 to which we were not
9 invited, but we did attend and gave the opportunity for
10 everyone there to visit with -- as a matter of fact, I
11 stood up and spoke and corrected the record on
12 Ms. Anderson. She put herself as the expert on our
13 permit, and I allowed the public to ask me any question at
14 any time. As a matter of fact, at that time I opened the
15 door of my office to anyone to stop in from that point
16 forward and I would answer any questions they had.

17 Q. Thank you, Mr. Barron.

18 And you testified yesterday that you're okay
19 with permit conditions coming from DEQ because I believe,
20 as you stated it, they make the permit stronger or better.
21 Do I have that right?

22 A. You do.

23 Q. Okay. So then just to be clear, in order to
24 make this permit stronger or better, you'd be okay with
25 any permit condition imposed by the DEQ or even requested

1 by this council?

2 A. I would, yes.

3 Q. Now, shifting gears a little bit. I believe you
4 testified that Brook Mine only intends to mine about
5 45 percent of the coal in mine panels. Do I have that
6 right?

7 A. In the highwall mining panels, we have a range
8 of extraction from about 45 percent to 60 percent.

9 Q. But didn't we hear yesterday from -- or maybe
10 not yesterday, but this week -- from DEQ personnel that
11 with this method of highwall mining, extracting over
12 50 percent of the coal in the mine panels would be
13 dangerous?

14 A. As you heard Mr. Kristiansen say, that's a
15 general rule of thumb. Of course, once you studied the
16 area, extracted the cores and tested the samples, you can
17 be over that number or under that number based on what is
18 in the ground.

19 Q. Okay. So as I understand it, Mr. Kristiansen's
20 testimony that there's -- you should only mine up to
21 50 percent, more than that will be dangerous, that's not
22 applicable in some of the areas that you're mining?

23 A. So I'll repeat again. That's a general rule of
24 thumb. It's put out by OSM to give a guidance. It's a
25 mechanism to use when you're designing a panel to go,

1 okay, I'm within the rule of thumb. I should be adequate.
2 And I've got -- OSM -- an OSM number to help guide me down
3 the road.

4 Q. Okay. So my next question, then, is how is it
5 that DEQ can know or ascertain exactly how much of the --
6 of the coal from the mine panels that you guys are
7 removing?

8 A. As we said before, when we design each panel, we
9 will supply a ground control plan. That will dictate the
10 height of the extraction, the width of the extraction and
11 the amount of coal that is left. So they will have the
12 tool that will tell them how much we're going to extract
13 per panel. And even while we're mining it, that may
14 change as we encounter changes in the ground while we're
15 there.

16 Q. Okay. So I think you got to what I'm wondering
17 about here is. So as I understand it, you're saying that
18 you provide them with a plan of what you're going to do
19 and how you're going to do it, but, as you just testified,
20 you may deviate from that plan based on what you
21 encounter. So how it is when you may deviate DEQ knows
22 exactly how much of that coal you're removing and can make
23 sure you're staying under the threshold to keep it?

24 A. We report to DEQ as we operate.

25 Q. So that's a consistent reporting basis?

1 A. Yes.

2 Q. How often do you do that?

3 A. Monthly.

4 Q. Okay. Now, you also testified yesterday that as
5 far as you know, there's no underground coal seam fires
6 in -- within the permit area, right?

7 A. To my knowledge, no.

8 Q. And what is that knowledge based on?

9 A. AML puts forth a report on known underground
10 fires.

11 Q. Has Brook Mine or has WWC done any independent
12 surveying of whether or not there's coal fires in the
13 area?

14 A. We have not.

15 Q. Okay. And that information you reference from
16 AML, is that found in the permit application?

17 A. It is not.

18 Q. All right. So throughout this hearing there's
19 been a lot of discussion with DEQ personnel about how a
20 lot of the overburden material in this area is dry, but
21 also about how the overburden in the TR-1 area is
22 different because it's actually backfill material and
23 saturated with groundwater. So I don't think we need to
24 rehash any of that. But what I don't think anybody has
25 directly testified, and what I think you might be just the

1 guy to answer for me, is -- is there anywhere in the
2 permit application that specifically addresses the TR-1
3 overburden and its saturation with groundwater?

4 A. No.

5 Q. Okay. So based on that, there can't be anywhere
6 in the permit application that specifically describes the
7 pre-mining groundwater conditions in the TR-1 overburden,
8 can there?

9 A. In the permit application, in the geologic
10 cross-sections, we describe that area as backfill, as a
11 mixture of coals, clays, sands, however it was mixed by
12 Big Horn Coal and placed in that area. That is in the
13 permit application.

14 Q. But as you just said, there's no specific
15 portion of the permit application that addresses the
16 groundwater in the TR-1 overburden. So there cannot be
17 any specific portion of the permit application that
18 describes the pre-mining conditions of that groundwater,
19 can there?

20 A. Again --

21 MR. SUTPHIN: I'm going to object to that
22 question as asked and answered. He already referenced the
23 cross-sections.

24 CHAIRMAN BAGLEY: Any --

25 MR. GREGERSEN: I can move on.

1 CHAIRMAN BAGLEY: Okay.

2 Q. (BY MR. GREGERSEN) And so similar question,
3 then. If there's nowhere in the permit application that
4 addresses the TR-1 saturated backfill material, there
5 can't be anywhere in the permit application that
6 specifically addresses the drawdown in the TR-1
7 overburden, can they?

8 MR. SUTPHIN: I'm sorry, Mr. Chairman. I'm
9 going to have to object again. Mr. Gregersen, implicit in
10 that question is saying that there is no information in the
11 permit. Mr. Barron just said that there is.

12 CHAIRMAN BAGLEY: Your response to that?

13 MR. GREGERSEN: Yes, Mr. Chairman. So I
14 initially asked Mr. Barron -- we can check the transcript
15 if we need to -- whether there's any information that
16 specifically addresses the groundwater in the TR-1 area.
17 He said no. I asked him if there was any portion of the
18 permit application that specifically addresses the over --
19 the pre-mining conditions. He says there is information
20 that addresses the pre-mining conditions. This next
21 question was whether or not there was any information in
22 the permit application that specifically addresses the
23 drawdown that will occur specifically to the TR-1 area.
24 And those -- these are separate requirements in the rules
25 and regulations, so I just wanted to go through each one of

1 those.

2 CHAIRMAN BAGLEY: It's very similar, but
3 I'll allow that question.

4 Q. (BY MR. GREGERSEN) Would you like me to
5 rephrase, or do you --

6 A. No. So the first part of your question you
7 stated that nowhere in the permit describes the TR-1 area.
8 And I'll reiterate it is described in the Appendix D5.

9 As to your question on saturation. Oftentimes
10 in mines -- and our company has been involved in them --
11 when they're mining, for instance, they'll nick a scoria
12 face and it will have water in it that they have to deal
13 with it. This TR-1 area, if it is, indeed, saturated, is
14 no different than that scenario. If we discover water,
15 which we will study the area pursuant to the ground
16 control plan, we will have to drill holes that area. And
17 if we determine there is water and it is saturated, then
18 the mine will develop a plan for dealing with that
19 saturation.

20 Certainly Big Horn Coal has already mined there.
21 They had to deal with the inflows that are saturating that
22 area. I assume that they have constructed some kind of
23 barrier to deal with the water. Brook would do no
24 different.

25 Q. Thank you, Mr. Barron. But I still don't think

1 you answered my question, so I'll ask it a different way.
2 Please direct me to where in the permit application the
3 TR-1 overburden and groundwater is specifically modeled or
4 discussed as to the drawdown that will occur specifically
5 in that area.

6 A. I'll reiterate. Brook Mine has an obligation to
7 study that area prior to mining. We will conduct
8 sampling, and we will know what it is when we mine it.

9 Q. Do you believe you have the obligation to study
10 that before permit issuance?

11 A. The baseline for the area has been studied.
12 Mr. Bj Kristiansen was satisfied with that study, as well
13 as Dr. Kuchanur. That area is no different than a small
14 scoria outcrop, if you will, that may contain water, and
15 we'll deal with it as we approach it.

16 Q. First of all, your position is it may contain
17 water?

18 A. Correct.

19 Q. And I guess what I'm getting from your answer,
20 then, is that this information is not in that permit
21 application; is that correct?

22 A. The presence or absence of water in the backfill
23 of that area is not in the permit.

24 MR. GREGERSEN: No further questions,
25 Mr. Chairman.

1 Thank you, Mr. Barron.

2 THE WITNESS: Thank you.

3 CHAIRMAN BAGLEY: Thank you.

4 MS. ANDERSON: Can I have the little thing?

5 CHAIRMAN BAGLEY: Ms. Anderson.

6 MS. ANDERSON: Thank you, Dr. Bagley. Just
7 going to get my little computer set up here.

8 CROSS-EXAMINATION

9 Q. (BY MS. ANDERSON) All right. Let's see if I
10 can get this here.

11 All right. Good morning, Mr. Barron.

12 A. Good morning.

13 Q. All right. I just had a couple of follow-up
14 questions to what was just asked of you before I get to my
15 own questions.

16 A moment ago you testified that you're not aware
17 of any coal seam fires within the permit boundary,
18 correct?

19 A. Correct.

20 Q. Okay. Do you have any role in preparing the
21 company's responses to interrogatories that we asked
22 during the discovery for this proceeding?

23 A. I had some, yes.

24 Q. Okay. Would you please look at the screen.
25 This is our Exhibit 22, Interrogatory Number 9 that we

1 asked of the company. Were you involved in answering this
2 question at all? Do you remember?

3 A. Yeah.

4 Q. Okay. You were? All right.

5 And -- I mean, you'll see that the question
6 there in Interrogatory Number 9, "Please disclose whether
7 Brook is aware of coal fires in the area at the present or
8 in the past." And the answer has a bunch of objections in
9 it. But could you please read the last sentence there?

10 A. "Without waiving these objections, Brook is
11 aware of coal fires within its proposed permit boundary."

12 Q. Okay. So is your testimony that you're not
13 aware of coal fires within the permit boundary, that this
14 was a wrong answer given to us?

15 A. No, not at all.

16 Q. Okay.

17 A. So we know that there are coal fires adjacent to
18 the permit boundary. We can't completely say that there
19 is nothing within the permit boundary. But there is no
20 evidence on the surface, nor is there evidence from AML
21 that there are coal fires --

22 Q. Okay. But --

23 A. -- in the area.

24 Q. Sorry.

25 But this answer says "...Brook is aware of coal

1 fires within its proposed permit boundary." That's what
2 you gave us during discovery. Is that not your testimony
3 anymore?

4 A. We could have worded it differently, I suppose.

5 Q. You could have worded it differently, you
6 suppose.

7 Okay. So at the current time you're not aware
8 of coal fires within the permit boundary?

9 A. I'll reiterate, there's no evidence on the
10 surface of coal fires. We know there's historic mining
11 and the potential for oxidation and for coal fires to
12 occur. So we wanted to make sure that we were aware of
13 the possibility of coal fires existing.

14 Q. Okay. Thank you.

15 Have you done any surveying about the presence
16 of coal fires within the permit boundary?

17 A. We have not.

18 Q. Have not. Okay.

19 All right. You also just answered some
20 questions about a public meeting that our organization
21 held. Do you remember when that meeting was?

22 A. It was on February 12, 2015.

23 Q. Okay. After that time -- and you said you were
24 there at that meeting?

25 A. I was there, yes.

1 Q. Okay. Do you remember me saying something that
2 it's sort of odd that we're here because we're holding
3 this public meeting, the company isn't? Do you remember
4 me saying that?

5 A. I do remember you saying that, yes.

6 Q. Okay. After that meeting, at any time did the
7 company hold their own public meeting?

8 A. We did not.

9 Q. Okay. Why didn't you do that? You just said
10 engaging the landowners is important, so I'm wondering why
11 you didn't.

12 A. I did --

13 MR. SUTPHIN: I'm going to object to that
14 question as argumentative.

15 MS. ANDERSON: Okay. He just testified to
16 the importance of landowners, but that's fine. I'll
17 withdraw it.

18 Q. (BY MS. ANDERSON) Okay. Did you ever meet with
19 any other landowners in the area and the adjacent lands?
20 For instance, Mr. Buyok or Mr. Bocek?

21 A. I did not with those --

22 THE REPORTER: I'm sorry?

23 THE WITNESS: I met with -- with those
24 individuals during depositions.

25 Q. (BY MS. ANDERSON) During depositions. And that

1 was just a few weeks ago, right?

2 A. It was.

3 Q. Okay. All right. Mr. Gilbertz may have some
4 questions for you on that.

5 All right. Let's get to my questions. So just
6 to clarify your testimony yesterday and today, you keep
7 using the word "we." But you don't actually work for
8 Brook Mining Company, correct?

9 A. Our company is employed by Brook.

10 Q. Okay. But you're not directly employed by
11 Brook?

12 A. No.

13 Q. Okay. Do you have plans to work for Brook
14 Mining Company in the future?

15 A. No.

16 Q. Okay. And you don't work for Ramaco Wyoming
17 Coal Company?

18 A. No.

19 Q. Okay. Or any of the other Ramaco companies?

20 A. No.

21 Q. Okay. Do you have an ownership interest in the
22 mine or any of the facilities planned at or near the mine?

23 A. No.

24 Q. Okay. You're getting compensated for your time
25 today here, right?

1 A. My company does pay me, yes.

2 Q. Okay. And so those bills are submitted by your
3 employer, WWC?

4 A. Yes.

5 Q. Okay. So to be very clear, you're just a
6 consultant to the company, right?

7 A. I am an engineer working for a consulting
8 company, yes.

9 Q. Okay. So, in fact, isn't it correct that the
10 Brook Mining Company currently has zero full or even
11 part-time employees?

12 A. I don't know the employment structure of Ramaco.

13 Q. Okay. Did someone at any of the Ramaco
14 companies give you authorization to testify on the
15 company's behalf today?

16 A. I'm here as a consultant for Western Water
17 testifying for the work I conducted as a consultant hired
18 by Ramaco to prepare this permit application.

19 Q. Okay. Who -- who in the company gave you
20 authorization to testify on their behalf today?

21 MR. SUTPHIN: I'm going to object to this
22 line of questioning. It's irrelevant and it's calling for
23 legal conclusions.

24 MS. ANDERSON: And, Mr. Chairman, I think
25 it's relevant because it speaks to the witness's

1 credibility with you and with us as parties here, and to
2 his knowledge about his role in these proceedings and why
3 it matters and me -- and having a company meet their burden
4 showing that their work is sufficient to approve.

5 CHAIRMAN BAGLEY: Yeah, I think it's -- we
6 should know who has hired WWC, but I'm not sure we would
7 know an individual of that. Go ahead and ask the question
8 again, but let's kind of -- let's keep this moving forward.

9 Q. (BY MS. ANDERSON) Okay. Mr. Barron, are you
10 aware of the individual within the Ramaco companies that
11 hired your company to be their consultant?

12 A. Randy --

13 THE REPORTER: I'm sorry?

14 THE WITNESS: Randy Adkins.

15 Q. (BY MS. ANDERSON) Okay. Did anyone at the
16 Ramaco companies help you prepare your testimony for
17 yesterday and today?

18 A. No.

19 Q. No. Okay.

20 So just to clear this up. When you say "we" in
21 your testimony, you mean your employer, WWC, right?

22 A. I may have used that term interchangeably with
23 we as Ramaco and we as Western Water.

24 Q. Okay. I have another preliminary question for
25 you. You mentioned yesterday that a professional

1 geologist certified some of the data or findings provided
2 to the Department of Environmental Quality, right?

3 A. Yes.

4 Q. Who was that?

5 A. Mike Evers.

6 Q. Mike Evers. Okay.

7 But he doesn't plan to testify in these
8 proceedings?

9 A. I have not seen him on any list to testify, no.

10 Q. Okay. And you're not a geologist, right?

11 A. No, as stated on the record, I'm an engineer.

12 Q. Okay. Let's talk a little bit about your
13 experience. You just explained your role as something
14 like coordinating the permit application and working with
15 some subcontractors pulled together various portions of
16 the permit application. Is that an accurate way to
17 describe what you did for the company?

18 A. That's kind of a broad description, but I'll go
19 with it, yes.

20 Q. Okay. Have you ever coordinated preparation of
21 a new coal mine permit before?

22 A. As I stated on the record, this is the first new
23 coal plan -- coal mine permit in decades. So the answer
24 to that question is no.

25 Q. Okay. Have you ever coordinated preparation of

1 a highwall coal mine permit before -- a new or an
2 amendment?

3 A. No.

4 Q. Okay. In your testimony yesterday, you
5 explained a bit about the highwall mining method via a
6 picture that we actually had in one of our exhibits. Have
7 you ever been on a highwall mining site before?

8 A. I have not.

9 Q. Okay. Have you ever personally seen highwall
10 mining?

11 A. I have not.

12 Q. Have you ever worked for a company that has
13 conducted highwall mining?

14 A. I have not.

15 Q. Do you have any other personal experience with
16 highwall mining?

17 A. No, I do not.

18 Q. Okay. So when you talked about highwall mining
19 yesterday, it was based on maybe some assumptions you've
20 drawn from reading some information or seeing some
21 pictures?

22 A. It's more than seeing some pictures. Obviously,
23 when I prepared this permit application, I had to become
24 familiar with highwall mining. And, certainly, I've
25 investigated that and that went into my thinking in this

1 permit application.

2 Q. How did you investigate highwall mining, as you
3 just put it?

4 A. We worked with a person by the name of Ken
5 Woodring, who has a great deal of knowledge with highwall
6 mining, and have interacted with him in preparation for
7 the permit application.

8 Q. Okay. And Mr. Woodring is going to testify
9 later today, probably?

10 A. I assume so, yes.

11 Q. Okay. I might have some questions for him on
12 that.

13 Okay. You testified yesterday about -- and you
14 just got to this a little bit ago with Mr. Gregersen. But
15 you testified about the performance standards and how they
16 allow some level of flexibility in meeting them, correct?

17 A. Yes.

18 Q. Okay. But wouldn't you agree that in the case
19 of coal mining, there are actually some pretty specific
20 performance standards that require certain things of a
21 company like, for instance, the blasting performance
22 standards?

23 A. Correct. And Mr. Emme outlined what those were.

24 Q. Okay. So they're not all just flexible
25 standards. Some of them are fairly specific.

1 A. In cases, yes.

2 Q. Okay. And wouldn't you agree that it is good
3 practice and in some cases necessary to have measures in
4 the permit or, as we've been talking about, these
5 conditions of approval that ensure these performance
6 standards will be met and that DEQ can enforce them during
7 the life of the mine?

8 A. They are in the permit application.

9 Q. So all of those measures to meet the performance
10 standards are in the permit application. Is that your
11 testimony?

12 A. Yes.

13 Q. Okay. Wow.

14 All right. And wouldn't you agree that the
15 performance standards are distinct from the requirements
16 that need to be met in a permit application? So --

17 A. Define distinct.

18 Q. Okay. So in other words there are different
19 chapters of the coal regulations that deal with permit
20 requirements versus performance standards, right?

21 A. The entire body of the regulations are
22 performance-based standards.

23 Q. So there aren't special rules related to permit
24 application requirements?

25 A. Maybe to help the council clarify, there's two

1 ways to regulate. You can either have a prescriptive
2 regulation or a performance-based regulation.
3 Prescriptive regulation says that, for instance, in runoff
4 on a mine permit application, you should always use a rock
5 check dam. The trouble with using a prescriptive
6 regulation is a rock check dam doesn't always work in all
7 circumstances.

8 The other end of the spectrum is a performance-
9 based regulation. Thou shalt treat its sediment so that
10 it meets these criteria, the constituents of the water
11 before you discharge it. And if you want to use a
12 sediment pond instead of a rock check dam, you can go
13 ahead and use that. It's troublesome when you use
14 prescriptive base.

15 So to answer your question, we use performance
16 standards, and those are in the permit application.

17 Q. Okay. But are you basically saying today in
18 your testimony that the permit application requirements
19 and DEQ's regulations are performance based?

20 A. They are. Absolutely.

21 Q. Okay. So there's not prescriptive requirements?

22 A. No.

23 Q. There's not. Okay.

24 So, for instance, you know, in the case of
25 surface coal, let's take that Chapter 2 regulations

1 requirement. You testified yesterday that you're familiar
2 with these requirements, right?

3 A. Yes.

4 Q. Okay. Are you familiar also with the
5 performance standards -- and I think that's the exact
6 phrase -- in Chapters 4 and 5 of the regulations?

7 A. Yes.

8 Q. Okay. Do you see a difference between those two
9 sets of regulations in terms of whether they're
10 performance based or prescriptive?

11 A. I'll reiterate what I stated before. The entire
12 body of Wyoming's regulations are performance based.

13 Q. The entire body.

14 Okay. So I take that also goes for Section 1 of
15 Chapter 7 related to the requirements for what must be in
16 a permit application for underground mining?

17 A. Yes.

18 Q. Okay. You testified yesterday to your review of
19 the rules and statute applicable to this coal mine permit,
20 like the ones we just talked about. Would you agree with
21 me that the rules and statute need interpretation and
22 application based on professional experience and
23 backgrounds?

24 A. Yes.

25 Q. Okay. And to do that you have to rely on

1 scientific principles or standards of best industry
2 practice?

3 A. You can use those as well, yes.

4 Q. Okay. And then in order to know what those
5 scientific principles or standards of best industry
6 practice are, you have to have a certain level of
7 expertise, right?

8 A. Yes.

9 Q. Okay. Well, great. That brings me to the
10 subsidence control plan. So I have up on the screen DEQ
11 Exhibit 12, page 73. I'm wondering if you would read the
12 highlighted portion.

13 A. The subsidence control plan was prepared by
14 Cardno MM&A, Bluefield, Virginia. Addendum MP-6 contains
15 subsidence control measures at the Brook Mine.

16 Q. Okay. And you testified to this yesterday, but
17 this reiterates your testimony that Cardno prepared the
18 subsidence control plan?

19 A. Yes.

20 Q. Okay. Let's go -- we'll go to page 321 of the
21 same exhibit. And you see a similar sentence there,
22 right?

23 A. I do, yes.

24 Q. And is this the beginning of the subsidence
25 control plan?

1 A. It appears to be that way, yes.

2 Q. Okay. Who at Cardno prepared the subsidence
3 control plan?

4 A. There were several individuals involved.

5 Q. Could you name them, please?

6 A. There was Justin Douthat, Jerry --

7 THE REPORTER: Jerry?

8 THE WITNESS: Enigk, E-N-I-G-E-K [sic].

9 I'd have to look that up. I'm not sure how to spell it.

10 A. And a couple other individuals that I don't
11 recall their name.

12 Q. (BY MS. ANDERSON) You don't recall their names?

13 A. No.

14 Q. Do you have any interaction with them at all --

15 A. Yes.

16 Q. -- in your coordination of the permit
17 application?

18 A. I do.

19 Q. You did?

20 A. Uh-huh. Yes.

21 Q. Regular coordination or just maybe one time and
22 you don't remember who it is?

23 A. So this was completed a couple years ago. The
24 coordinator was Justin Douthat. I tried to have all
25 interactions through him, and he interacted with his

1 staff.

2 Q. Okay. You've read the objections, right -- I
3 think you testified about yesterday -- that were submitted
4 to the permit application?

5 A. Correct.

6 Q. Okay. And you know that subsidence was a big
7 concern raised by our organization and some other
8 landowners in the area?

9 A. Yes.

10 Q. Okay. So then why did you -- why didn't you, in
11 your role working with subcontractors, including Cardno,
12 ask them if they could come to testify to their findings
13 regarding subsidence?

14 MR. SUTPHIN: Mr. Chairman, I'm sorry. I'm
15 going to have to object to that question. The fact that we
16 don't have a particular witness here doesn't really matter
17 when it's clear that this witness is familiar enough to
18 address all the concerns. He testified at length yesterday
19 about the ground control plan.

20 MS. ANDERSON: And, Mr. Chairman, I think
21 we'll get to exactly what he's familiar with in just a few
22 minutes. But he didn't prepare this document.

23 CHAIRMAN BAGLEY: I think your question was
24 why didn't he invite them, and it's not -- he wouldn't be
25 the one to do that. He's an engineer, not responsible for

1 putting together this kind of case. So let's stay focused
2 on what he knows as -- in his role as the permit preparer.

3 MS. ANDERSON: Okay. Sure. Let me ask the
4 question maybe a different way.

5 Q. (BY MS. ANDERSON) Are you aware that these
6 experts that prepare the subsidence control plan won't be
7 testifying at this hearing?

8 A. I did not see them on the witness list, no.

9 Q. Okay. Thank you.

10 All right. So are you personally certifying to
11 the findings and data prepared by Cardno?

12 A. Yes.

13 Q. You are. Okay.

14 So you yourself said yesterday that you hired
15 Cardno as a subcontractor because you didn't have the
16 necessary expertise to prepare the subsidence control --
17 subsidence control plan, right?

18 A. I wouldn't say that we have -- didn't have the
19 necessary expertise. I recognized that we had a company
20 that had more expertise than we did, and so in this case,
21 and because I knew the sensitive nature of subsidence in
22 the area, I chose to use them because of their experience.

23 Q. Okay. So Cardno has more experience than you in
24 subsidence control?

25 A. Yes.

1 Q. Yes. Okay.

2 You also testified yesterday that an important
3 part of being a professional engineer is to use your stamp
4 of approval, so to speak, to certify that you were
5 protecting health and safety, right?

6 A. Yes.

7 Q. Okay. So, Mr. Barron, how can you certify that
8 you were protecting health and safety with your
9 professional engineer certification here if you don't have
10 the expertise and experience to know whether you're
11 actually doing that?

12 A. My certification stamp is not on that document.

13 Q. Is not on that document. Whose stamp is on that
14 document?

15 A. I believe Cardno's.

16 Q. You believe that. Can you show me where? If
17 you pull out Chapter 12 -- or Exhibit 12 and show me that,
18 where their stamp is anywhere in this document?

19 A. They prepared the report. I don't know if they
20 stamped the report. I don't know.

21 Q. You don't know if they stamped it?

22 A. Stamping of a report I don't believe is a
23 requirement of the statutes of the rules and regulations.

24 Q. Well, yesterday you said that putting that
25 PE certification on something is really important, right?

1 A. Correct. And throughout this document my
2 certification is on several maps in exhibits.

3 Q. Okay. So you're the only PE that stamped any
4 part of the permit application, right?

5 A. In the parts where the statutes and the rules
6 and regulations require my stamp, my stamp is on this
7 document along with others. We brought up Mr. Evers. His
8 stamp is on there for the geologic sections.

9 Q. So you don't think a PE needs to stamp the
10 subsidence control plan?

11 A. It's not a requirement of the rules and the
12 regulations.

13 Q. Where in the rules and regulations is this
14 subsidence plan even talked about?

15 A. It's talked about in guidance document,
16 Guideline 6A. And then it's further referenced in the
17 statutes. I'd have to break out --

18 Q. It's referenced in the statutes.
19 The phrase "subsidence control plan" is in the
20 statute?

21 A. I believe so, yeah.

22 Q. You believe so. Okay.

23 All right. Let's go back to Cardno a little
24 bit. To your knowledge -- I think you mentioned Justin --
25 what was his last name again?

1 A. Douthat.

2 Q. Douthat. Okay. Mr. Douthat.

3 To your knowledge, did Mr. Douthat ever visit
4 the mine site in preparing the subsidence control plan?

5 A. I'm unaware of him visiting it --

6 Q. Okay. Did he visit the mine site in preparing
7 any other parts of the application?

8 A. Not in preparing other parts of the application.

9 Q. Okay. To your knowledge, has Mr. Douthat ever
10 prepared a mine permit application for a western coal mine
11 permit?

12 A. He helped develop a series of mine plans and
13 mine panels. Their company did come down for a site visit
14 to look at the specific site. They were the company that
15 developed the layout of the panels that Brook uses.

16 Q. Okay. Have they -- to your knowledge, have they
17 ever prepared a permit application or aspects of a permit
18 application for any other coal mine into Wyoming?

19 A. I've only interacted with them with this permit
20 application. I can't speak to what they've done in the
21 past.

22 Q. Okay. Any highwall mine in Wyoming or maybe
23 elsewhere that you know of?

24 A. I know he worked at length with eastern coal
25 mines.

1 Q. Worked at length with eastern coal mines. And
2 some of those mines are highwall mines?

3 A. Yes.

4 Q. Okay. So given their lack of experience with
5 mining in Wyoming, why did you think they had the
6 expertise to prepare the subsidence control plan?

7 A. I don't know whether they have a lack of work in
8 Wyoming. I can't speak to that.

9 Q. You can't speak to that. But it wasn't one of
10 the factors that you looked at when you thought about
11 hiring subcontractors?

12 A. They have extensive knowledge of highwall mining
13 in the East. Eastern coal mines primarily use this
14 method. It's not a western coal mining method that's used
15 a lot. There are some coal mines in the basin that use
16 highwall mining to extract the last portion of coal as
17 they butt up against their permit boundary, but I -- I
18 know they're the most experienced in highwall mining.

19 Q. Okay. A bit ago we talked a little bit about
20 performance standards. Would you agree with me that there
21 are performance standards related to subsidence?

22 A. Yes.

23 Q. Okay. And wouldn't you agree with me that the
24 subsidence control plan should be designed to ensure those
25 performance standards are met?

1 A. We have a commitment in the permit application
2 that we will not subside.

3 Q. Okay. That's exactly what I'm going to get to.
4 So I'm turning to page 325 of Exhibit 12. And would you
5 read the last just highlighted portion there on page 325.

6 A. "Highwall mining should not result in surface
7 subsidence..."

8 Q. Okay. And for the record, that says "due to,"
9 and then there's some factors on the next page, just so
10 we're clear.

11 All right. But the -- would you agree with me
12 that the overall finding of the subsidence control plan is
13 that highwall mining should not result in surface
14 subsidence?

15 A. Yes.

16 Q. And that's specific to the permit area?

17 A. Yes.

18 Q. The whole permit area?

19 A. Yes.

20 Q. Okay. And would you agree that this finding
21 applies for the life of the mine?

22 A. Yes.

23 Q. Okay. Do you believe that the subsidence
24 control plan provides sufficient information to make this
25 conclusion?

1 A. It does.

2 Q. It does. All right. We'll get to that in a
3 minute.

4 You mentioned that you had no issues with the
5 concerns that Dr. Marino had raised about the additional
6 data analyses which need to be collected, right?

7 A. You're going to have to repeat that. Somebody
8 coughed.

9 Q. Yesterday you gave some testimony about
10 Dr. Marino and his report, and his, I guess, ask of the
11 company to do more information, right? To provide more
12 information, geotechnical analysis?

13 A. Yes.

14 Q. Okay. And you testified yesterday that those
15 studies still need to be done, right?

16 A. We will be conducting further studies as our
17 commitment in the permit illustrates, yes.

18 Q. Okay. But your testimony yesterday was that you
19 agreed with Dr. Marino that more study needs to be done,
20 right?

21 A. I agreed with Dr. Marino's study of the area. I
22 agreed with his calculations and the mechanics of how you
23 determine the stability of a highwall mining area and
24 outlying the strengths that are needed to hold up the roof
25 and floor. I disagree with Dr. Marino in the timing of

1 when that data needs to be supplied in the permit. Also,
2 Dr. Marino came to a conclusion that it is highly likely
3 that the permit area would subside. And on the other end,
4 he says that we needed more data to come to such a
5 conclusion. He didn't have the data to even come to that
6 conclusion, and so I disagree with those components of his
7 testimony.

8 Q. Okay. I'm sure Dr. Marino will be happy to talk
9 to that later today or tomorrow or several weeks from now.
10 We'll see.

11 But -- so just to be clear, when we read this
12 sentence "Highwall mining should not result in surface
13 subsidence," it's your opinion that today in the
14 information in the permit application there's enough
15 information to make that conclusion.

16 A. Yes. With the construction of the subsidence
17 control plan and the performance standard that we've
18 committed to in the permit application, that statement is
19 true.

20 Q. Okay. So would you agree that the mine plan, in
21 its entirety, was designed without any planned subsidence?

22 A. Correct.

23 Q. Okay. To your knowledge, do you know if it's
24 typical to have at least some planned sub -- subsidence
25 within underground mining?

1 A. As Mr. Kristiansen pointed out, you can have
2 underground mining with planned subsidence.

3 Q. Okay. We talked a bit about the rules that
4 apply regarding subsidence. Did you share those rules
5 with the Cardno staff for their review in preparing this
6 document?

7 A. Yes. Absolutely. I shared those rules with
8 them, which is why they were prompted to call DEQ and
9 interact with them and follow up on those rules.

10 Q. Okay. I think in your direct testimony, you
11 said that there was only a limited number of tests that
12 were done to submit the conclusions in the permit
13 application, right?

14 A. We submitted data to ascertain a general sense
15 of the mechanics and the strengths of the material in the
16 ground. We did not use those to come to a specific
17 conclusion about any one area.

18 Q. Any one area. Okay.

19 So this sentence again up on the screen,
20 "Highwall mining should not result in surface subsidence,"
21 is general?

22 A. No. It's a commitment to the performance
23 standard.

24 Q. It's a commitment to the performance standard.
25 Okay.

1 Could you remind us on how many tests were done?

2 A. We conducted two tests.

3 Q. Two tests. Okay.

4 Do you know whether those tests accounted for
5 differences in the type of overburden and floor materials?
6 For instance, did they account for the presence of clay?

7 A. For the council, I'll reiterate that we took a
8 couple of samples, tested those to get a general sense of
9 what was in the permit area. We have committed with the
10 ground control plan to provide the material that
11 Ms. Anderson is asking for each specific mine panel area,
12 and recognizing that each one of those are different in
13 nature and that we need to have design standards for each
14 one of those areas.

15 Q. Okay. But, again, you just testified that this
16 finding is for the entire permit area, right?

17 A. I think you're confusing the prescriptive nature
18 of regulating compared to a performance standard of
19 regulating. This is a performance standard that applies
20 to the whole permit area, and we will abide by that. And
21 we will further study each panel so we can achieve that
22 performance standard.

23 Q. Okay. Okay. Okay. So I think you testified a
24 little bit about this ground control plan, right?

25 A. Yes.

1 Q. Yesterday? Okay.

2 And you said it's approved by MSHA?

3 A. We have not submitted ground control plan to
4 MSHA at this time --

5 Q. Okay.

6 A. -- so there is no approved plan.

7 Q. Okay. That's fine.

8 Can you tell us what MSHA stands for. I don't
9 actually think the council --

10 A. Mine Safety and Health Association.

11 Q. Administration, maybe?

12 A. Administration, yeah.

13 Q. Okay. Mine Safety and Health Administration; is
14 that correct?

15 A. Yes.

16 Q. Okay. To your knowledge, is this an agency
17 focused on preventing surface subsidence or protecting
18 miner safety?

19 A. It's an organization whose sole role is the
20 protection of the safety of miners.

21 Q. Okay. Does that difference matter to you, that
22 their focus is on miner safety, not maybe on preventing
23 surface subsidence?

24 A. So in part of their role in protecting the
25 safety of the people, they need to have parameters that

1 surround or deal with how a highwall is held up, and so
2 they -- you're required to provide geotechnical studies
3 and calculations to a factor of safety for miners. And
4 because of that, it actually addresses the issues of
5 subsidence.

6 Q. Okay. But, for instance, MSHA might not be as
7 focused on impacts to the land resources or other things
8 that subsidence could affect?

9 A. No, because people's lives are probably more
10 important than the surface.

11 Q. So you don't -- you don't think surface
12 subsidence has any impacts?

13 MR. SUTPHIN: Object to the form. That is
14 argumentative. And he's already answered all these
15 questions. I think Mr. Barron's testimony about the
16 performance standards and that MSHA ground control plan
17 will be met is more than sufficient, and I -- I just would
18 urge the council to move this along.

19 COUNCIL MEMBER DEGENFELDER: Also, the
20 ground control plan does not have to be part of the permit;
21 is that correct?

22 MS. ANDERSON: Well, we're going to get to
23 some questions on that.

24 COUNCIL MEMBER DEGENFELDER: Okay. So can
25 we focus on the permit, what we're talking about.

1 COUNCIL MEMBER AGOPIAN: I would agree with
2 that sentiment.

3 MS. ANDERSON: Okay.

4 CHAIRMAN BAGLEY: Yeah. He's answered the
5 question about the rule of MSHA and calling -- trying to
6 call speculation on whether subsidence is more than or less
7 important than human lives is more or less irrelevant at
8 that point. MSHA is focusing on miner safety, and how it's
9 used is something we can proceed on.

10 MS. ANDERSON: Okay. Great. That sounds
11 fine with me.

12 Q. (BY MS. ANDERSON) Okay. I pulled up Exhibit 51
13 from our exhibits. I understand that you're not on this
14 email chain, but -- and it also is from a while ago. But
15 if you would, can you just take a brief look at this email
16 from DEQ employee named Brian Wood explaining what's in
17 Bridger's and Black Butte's requirements regarding
18 highwall mining. Just take a moment to review that.

19 MR. SUTPHIN: I'm sorry, Mr. Chairman. I'm
20 going to have to object to this. I know we've lodged
21 multiple objections about hearsay, but this is a great
22 example of something that Mr. Barron did not draft, did not
23 receive, and likely has not studied. So to ask him to draw
24 conclusions about it is highly improper, especially since
25 we won't have an opportunity to cross-examine the folks

1 behind this email.

2 MS. ANDERSON: And, Mr. Chairman, maybe I
3 could ask this a different way.

4 Q. (BY MS. ANDERSON) Mr. Barron, are you familiar
5 with any other coal mine permits in Wyoming and what they
6 have regarding highwall mining and the subsidence control
7 plan?

8 A. I'm aware that highwall mining is conducted by
9 some mines in Wyoming.

10 Q. Okay. But you haven't --

11 CHAIRMAN BAGLEY: Just a minute.

12 MS. ANDERSON: Yeah.

13 CHAIRMAN BAGLEY: I agree. Let's remove
14 this exhibit. We don't need to be looking at it. I don't
15 see that it's -- I can understand how it may appear overall
16 of interest, but I don't see it directly relevant to this.
17 So let's remove the exhibit, continue with the -- the
18 question you asked about whether you're aware is okay. We
19 can ask that question.

20 MS. ANDERSON: Okay.

21 COUNCIL MEMBER AGOPIAN: Please take it
22 down.

23 CHAIRMAN BAGLEY: Yeah, take this exhibit
24 down.

25 MS. ANDERSON: Okay.

1 CHAIRMAN BAGLEY: Thank you.

2 MS. ANDERSON: Sure.

3 Q. (BY MS. ANDERSON) So I take it you're not aware
4 that in the Bridger and -- in the Bridger subsidence
5 control plan and highwall mining components of that permit
6 there is an approved ground control plan from MSHA?

7 A. I have not reviewed their permit.

8 Q. Okay. That's what I need to know there.

9 Okay. Let's go back to page 323 of Exhibit 12.
10 And do you agree is that -- or are you familiar with this
11 page in the subsidence control plan?

12 A. Yes.

13 Q. Okay. Do you agree that it talks about kind of
14 historic mining in the area?

15 A. Yes.

16 Q. And subsidence has occurred from historic
17 mining?

18 A. Yes.

19 Q. Okay. Are you personally familiar with the
20 history of mine subsidence in the area?

21 A. Yes.

22 Q. Okay. Would you agree that this page says that
23 the AML project in the area has, quote, been reclaimed?

24 A. Yes.

25 Q. Okay. Is that an accurate statement? Can I

1 find it for you? It's right here.

2 A. Yes.

3 Q. Okay. So the Historic Mine Number 44 has been
4 reclaimed?

5 A. I think the area that subsidence occurred for
6 that Historic Mine Number 44 has been claimed. That mine
7 is quite expansive.

8 Q. Okay. Would you agree that there are more than
9 just one AML project in the area?

10 A. Yes.

11 Q. Okay. You were present in the room when I
12 talked to Mr. Kristiansen about all the AML projections in
13 the area -- all the historic abandoned mines in the area?

14 A. Yes.

15 Q. Okay. So it's not just an Abandoned Mine Lands
16 project, right? There's more than one?

17 MR. SUTPHIN: Mr. Chairman, again, I'm
18 going to have to object. Ms. Anderson is mischaracterizing
19 this paragraph. It's clearly talking about one AML project
20 for one part of the Historic Mine Number 44, and I continue
21 to see -- or fail to see the relevance of continued
22 questions along these lines.

23 Q. (BY MS. ANDERSON) Okay. Let me maybe ask this
24 a different way. Does the subsidence control plan talk
25 about any other historic mining?

1 A. I don't think the subsidence control plan
2 discusses anything other than this project that's within
3 the permit boundary.

4 Q. Okay. Okay. Let's turn to page 327. Are you
5 familiar with this part of the subsidence control plan?

6 A. Yes.

7 Q. Okay. Would you read the last sentence that's
8 highlighted there?

9 A. "The operator will continue to perform
10 remediation on any subsidence, detected during or
11 subsequent to the 6 month monitoring period, until bond
12 release is approved."

13 Q. Okay. So would you agree with me that this page
14 talks about the monitoring being proposed for subsidence
15 should it occur, correct?

16 A. Yes.

17 Q. Okay. You spoke to this a bit yesterday, but
18 would you agree that the text that you just read says that
19 monitoring will be discontinued -- or let me -- there's
20 maybe another part of that. But would you agree that the
21 subsidence control plan says that monitoring will be
22 discontinued if there's no evidence of subsidence after
23 six months?

24 A. No. Monitoring continues up and to -- up until
25 bond release.

1 Q. Okay. So it's subsequent to the six-month
2 monitoring period. So there's -- just to clarify, so
3 there's an initial six-month monitoring period?

4 A. Correct.

5 Q. And then what happens after that?

6 A. We still continue to monitor.

7 Q. Okay. So why does the subsidence control plan
8 say there's a six-month monitoring period? I guess what's
9 the point of having six months if really the commitment is
10 until bond release?

11 A. So we wanted to highlight in the permit that we
12 wanted to scrutinize an area immediately after mining so
13 that we portrayed to the DEQ that we're sensitive about
14 subsidence, and if we even see indications immediately
15 following mining, we want to know about them and report
16 those to DEQ. Then we further commit to continued
17 monitoring during the life of the mine.

18 Q. Okay. Does this subsidence control plan
19 differentiate between the type of monitoring and that
20 six-month period versus the longer term monitoring?

21 A. No, it does not.

22 Q. Is it -- so it's going to be the same type of
23 monitoring?

24 A. I'll reiterate again. The difference between
25 prescriptive based and performance based. This is a

1 performance standard, and on DEQ visits to the site as
2 they look at it, and so maybe they see indications within
3 the first six months they might prescribe or ask for some
4 additional monitoring. For us to say a more in-depth
5 monitoring during a first six months time frame would
6 overly constrain the permit. However, it allows the
7 latitude for the regulator to come in and say, look, we're
8 seeing issues here and we want you to do this and that.
9 The permit allows for them to give us that guidance and
10 add constrictions or extra monitoring during a six-month
11 window as opposed to a longer-term window.

12 Q. Okay. So just to reiterate, why is there a
13 six-month identification -- why is that period identified
14 in the subsidence control plan?

15 A. I think I said the answer to this, but I'll say
16 it again. The six-month break offers DEQ the opportunity
17 to ask for different monitoring for this first window and
18 maybe a separate type of monitoring for another window
19 without saying this first type of monitoring has to apply
20 throughout the time frame. So if this needs to have
21 additional monitoring during the first window, we can have
22 this type of monitoring in this time gap and a different
23 in another time gap, and that's why the break in the
24 monitoring.

25 Q. But at this time does the company have any plans

1 about monitoring? Do they know what they're going to do
2 to actually monitor for subsidence?

3 A. Again, performance based, we will monitor. We
4 haven't determined exactly how we're going to monitor.

5 Q. So you're going to wait for DEQ to tell you
6 that?

7 A. Absolutely not.

8 CHAIRMAN BAGLEY: I think we need to move
9 on. I think we all have a pretty good idea what -- that
10 there is some vagueness.

11 MS. ANDERSON: Okay. Thank you for that.

12 Q. (BY MS. ANDERSON) All right. Would you agree
13 that subsidence can happen after six months?

14 A. It could, yes.

15 Q. And, in fact, in the area we've seen
16 subsidence -- do you have knowledge about subsidence
17 happening -- I think I talked to Mr. Kristiansen a little
18 bit about subsidence happening years, if maybe not even
19 decades, after mining.

20 A. It can happen, yes.

21 Q. Okay. Are you aware of a current Abandoned Mine
22 Land study in the area, including sampling at the Taylor
23 Quarry, related to mine subsidence?

24 A. Yes.

25 Q. Okay. And the Taylor Quarry was within your

1 permit boundary, right?

2 A. Yes.

3 Q. Okay. So would you agree that kind of based on
4 this AML study that mine subsidence problems still
5 regularly occur in the area?

6 A. As Mr. Kristiansen pointed out, the mining that
7 was conducted historically had planned subsidence.

8 Q. Okay. And so, again, you're aware of this AML
9 study currently going on for subsidence at the Taylor
10 Quarry within the permit boundary?

11 A. I'm aware of some activity with AML at the
12 Taylor Quarry, yes.

13 Q. Did you -- as the permit coordinator for the
14 company, did you interact with the AML division at all in
15 preparation of your permit application?

16 A. I did not.

17 Q. You did not. Okay.

18 Okay. I'd just like to ask a -- a few last
19 simple questions. Based on your knowledge and expertise,
20 can pillar collapse cause subsidence? Do you have any
21 knowledge or expertise about that pillar collapse?

22 A. I don't have expertise in pillar collapse.

23 Q. Okay. How about roof collapse?

24 A. I don't have expertise in roof collapse.

25 Q. Okay. Mine floor failure?

1 A. I don't have expertise in mine floor failure.

2 Q. Okay. Do you have any knowledge about whether
3 the subsidence control plan even discusses mine floor
4 failure and the possibility thereof?

5 A. The subsidence control plan lists -- and the
6 permit has the commitment for the ground control plan,
7 which does address those issues.

8 Q. Okay. So you're sure that the subsidence
9 control plan discusses mine floor failure?

10 CHAIRMAN BAGLEY: That -- he's answered
11 that.

12 MS. ANDERSON: Okay.

13 CHAIRMAN BAGLEY: Whether he's answered it
14 to your satisfaction or not is a different question, but
15 he's answered it.

16 MS. ANDERSON: Okay. Thank you,
17 Dr. Bagley.

18 Q. (BY MS. ANDERSON) Do you know if the subsidence
19 control plan addresses subsidence risk caused by surface
20 mining above highwall mining?

21 A. It will, yes.

22 Q. It will, but it doesn't right now?

23 A. Again, with the permit commitments that are in
24 place, the permit addresses those issues.

25 Q. Okay. Is it your understanding that the company

1 is, in at least part of the permit application, proposing
2 surface mining above highwall mining?

3 A. Yes.

4 Q. All right. You had a little interaction with
5 Mr. Gregersen earlier today, but we've heard quite a bit
6 of testimony about this 50 percent factor, right? The
7 idea that if you leave 50 percent of the coal in the
8 ground, subsidence will be less likely.

9 A. Yes.

10 Q. Okay. I think you just testified that that's a
11 general rule of thumb, right?

12 A. Yes.

13 Q. Okay. But -- were you here for
14 Mr. Kristiansen's testimony?

15 A. I was.

16 Q. And would you agree that he said that that was
17 one of the key parts of your permit application that he
18 relied on to approve it?

19 A. No.

20 Q. Or to deem it technically adequate, I should
21 say.

22 A. No. He relied on that guidance from OSM and the
23 classes that he took in reviewing our permit application.

24 Q. But that was a part of that, right?

25 A. It was a part of his knowledge and his review of

1 our permit, yes.

2 Q. Okay. So you would disagree that it was an
3 important part of Mr. Kristiansen's review.

4 MR. SUTPHIN: I'm --

5 CHAIRMAN BAGLEY: He can't answer that.
6 He's not Mr. Kristiansen.

7 MS. ANDERSON: That's fine.

8 Q. (BY MS. ANDERSON) Okay. So regardless of the
9 validity of this 50 percent factor, is it your
10 understanding that the company is proposing a permit
11 condition that 50 percent of the coal must be left in the
12 ground?

13 A. We've already got a permit commitment for 40 to
14 60 percent in the permit application.

15 Q. Can you show me the page in the permit
16 application where that is discussed?

17 A. So on DEQ Exhibit 12, page 035.

18 Q. 12-035.

19 A. In the last paragraph and about the middle of
20 the last paragraph, "The recovery efficiency for the
21 highwall mining operation is assumed to be forty to
22 sixty-five percent."

23 Q. Okay. Great. Thank you. We were having
24 trouble finding that because I think we were looking for
25 the numbers and not spelled out. So thank you.

1 So would you agree with me that for a good
2 portion of the permit area coal removal could be more than
3 50 percent?

4 MR. SUTPHIN: Mr. Chairman, again, I'm
5 going to have to object. We have been beating this drum
6 now for over an hour. Mr. Barron has already specified
7 that there will be specific engineered designs for each
8 mine panel. Some of them might be 65, some of them might
9 be 40, but to characterize it as a majority is completely
10 improper.

11 CHAIRMAN BAGLEY: I think the panel -- the
12 council has probably now a really good idea that subsidence
13 is a major concern, and we also have an idea what is -- is
14 and is not in the current mine plan with respect to
15 subsidence. So I'd like to kind of move -- if you have one
16 or two more questions related to subsidence, then I think
17 we will -- we will then take a break and move on to what
18 I'm sure you have other questions.

19 MS. ANDERSON: I do. Thank you,
20 Dr. Bagley.

21 Q. (BY MS. ANDERSON) All right. Okay. My next
22 question was going to be would you agree with me that
23 depending on the site-specific factors of the coal seam
24 and different areas, there could be some degree of
25 variability in these production amounts in the permit

1 application?

2 A. Yes.

3 Q. Okay. You testified that you spent four years
4 to prepare this permit application, right?

5 A. I've been interacting with the permit for four
6 years. We prepared the permit in about two years and
7 submitted it to DEQ and have been dealing with the permit
8 from that time period.

9 Q. Okay. And yet you testified that a great amount
10 of work still needs to be done, like the geotechnical
11 studies, the additional hydrologic characterization,
12 right?

13 A. To comply with the commitments within the permit
14 there are additional studies that need to be done.

15 Q. Okay. Couldn't some of that work have been done
16 in the four-year time span so it would be a part of this
17 permit application at the time of public notice and
18 comment?

19 A. No. That's not the way the permit is designed.

20 Q. So it's not designed to -- when it goes to
21 public comment, to allow the public to meaningfully
22 participate?

23 A. They -- the public is to review the permit in
24 its entirety, which includes all the commitments and all
25 of the pre-mine studies that have been conducted to date.

1 As far as the specifics of the designs for each individual
2 panel as they get there, those will not be in the permit
3 per se, but the commitment to do those is.

4 Q. Okay. I have just one last question on this
5 because my professional engineer expert is wanting me to
6 ask this.

7 So for the subsidence control plan, you
8 testified that you didn't directly prepare it, right?

9 A. Correct.

10 Q. Okay. But was it prepared directly under your
11 supervision?

12 A. Yes.

13 MS. ANDERSON: Yes. Okay.

14 All right. That's all on subsidence.

15 CHAIRMAN BAGLEY: All right. Thank you.

16 MS. ANDERSON: Thank you.

17 CHAIRMAN BAGLEY: Let us take a 10-minute
18 break. And we will start at 9:50.

19 MS. ANDERSON: Okay.

20 (Hearing proceedings recessed

21 9:38 a.m. to 9:50 a.m.)

22 CHAIRMAN BAGLEY: All right. Okay. We are
23 back in session.

24 Please continue, Ms. Anderson.

25 MS. ANDERSON: Okay. Thank you,

1 Dr. Bagley.

2 Q. (BY MS. ANDERSON) Mr. Barron, I have some
3 questions for you about roads and transportation. Are you
4 familiar with the requirements for buffers around county
5 roads or public rights of way regarding mining operations?

6 A. Yes.

7 Q. Okay. And would you agree with me that mining
8 will come within 100 feet of at least one county road in
9 the permit area, as currently proposed in the permit
10 application?

11 A. Yes.

12 Q. Okay. I think I heard you testify yesterday
13 that you haven't submitted any concrete plans to the
14 county about relocating or closing any county roads?

15 A. No.

16 Q. Okay. And this would include a lack of plans
17 about Slater Creek Road?

18 A. Right. This would include Slater Creek.

19 Q. Okay. Would you agree that the mining will come
20 within a hundred feet or actually even maybe closer to
21 Slater Creek Road?

22 A. Yes.

23 Q. Under the -- okay.

24 So are you just assuming that the County and DEQ
25 will sign off on your plans at some later date?

1 A. So in working with several coal mines, they've
2 moved county roads, they've moved highways to allow for
3 the buffer while they mine. Brook Mine is no different.
4 We will be able to move the county road in a fashion that
5 is safe for the public.

6 Q. Is it in the permit application right now that
7 the county road will be moved? Is there a statement to
8 that effect?

9 A. There's a discussion about county roads in the
10 permit, yes.

11 Q. Is there a statement in the permit application
12 right now that says the county road will be moved because
13 of -- it will come within this buffer?

14 A. The highwall -- the mining panels are shown in
15 permit application in relation to that road. The timing
16 is such that plans on moving that route are those plans in
17 the permit have not been submitted at this time.

18 Q. Okay. So there's -- just to confirm, because
19 you're not really answering the question directly -- but
20 there's nothing in the permit application that says
21 anything about moving county roads at this time?

22 A. There is a discussion in the permit application
23 about county roads and how we will deal with county roads
24 as they are encountered in mining.

25 Q. Okay. I have up on the screen Exhibit 33 from

1 our exhibits. Are you familiar with this email chain? It
2 was a while back, but it was an email from you.

3 A. Yes.

4 Q. Okay. And would you agree that the highlighted
5 portion there says it is anticipated that at least
6 one mile of road relocation may be required?

7 A. Yes.

8 Q. Okay. Was this in reference to Slater Creek
9 Road?

10 A. I believe it was, yes.

11 Q. Okay. Pulling up Exhibit 34 of ours. Are you
12 familiar with this map at all?

13 A. It looks likes Google Earth image.

14 Q. Did you help in producing discovery to us?
15 Production documents?

16 A. Yes.

17 Q. Okay. Are you familiar enough to know that this
18 was produced by Brook Mining Company in discovery to us?

19 A. There was a plethora of data supplied to you. I
20 imagine this was amongst them.

21 Q. Are you familiar with the geographic area shown
22 on that map?

23 A. Yes.

24 Q. Okay. Would you agree that that's Slater Creek
25 Road coming off under the interstate?

1 A. That appears to be Slater Creak Road, yes.

2 Q. Okay. And so this is the area you're going to
3 have to relocate?

4 A. Yes.

5 Q. Okay. So at the time it was definite enough to
6 know that at least one mile of the county road would have
7 to be relocated, you have it geotagged on a map, and yet
8 it's not definite enough in the permit application?

9 MR. SUTPHIN: Mr. Chairman, I would like to
10 object to this line of questioning as beyond the scope of
11 the direct examination of Mr. Barron, and particularly
12 asked and answered. He's already addressed that the County
13 has not done any work on this. They haven't done it yet.
14 It's been preliminarily -- I just -- I see this as another
15 waste of time, with all due respect.

16 MS. ANDERSON: Okay. I wouldn't say it's a
17 waste of time, but I think it does point out what is and
18 isn't in the permit application. So maybe we have
19 established that to some degree.

20 CHAIRMAN BAGLEY: Yeah, I would say that we
21 have established that the plans to relocate that county
22 road are not in the permit application.

23 MS. ANDERSON: Okay. Thank you.

24 Q. (BY MS. ANDERSON) Mr. Barron, are you aware
25 that certain landowners in the area depend on this road to

1 access their property?

2 A. Yes.

3 Q. Okay. Have you or anyone affiliated with the
4 company reached out to the landowners who use this county
5 road?

6 A. Yes. Phil -- stopped by my office --

7 THE REPORTER: I'm sorry. Who?

8 THE WITNESS: Phil Klebba.

9 MS. ANDERSON: It's K-L-E-B-B-A.

10 A. Is a resident that uses that road. He stopped
11 at my office. I was not in at the time he stopped, but I
12 followed up with a phone call to Mr. Klebba and told him
13 that he could stop in my office at any time and we can
14 discuss any of his concerns. He has, to date, not stopped
15 by my office.

16 Q. (BY MS. ANDERSON) Okay. I just have one last
17 question on transportation. Did the company consider
18 using conveyors to transport coal as opposed to trucks at
19 any time?

20 A. The conveyance by conveyors in the permit
21 application is contemplated.

22 Q. Is contemplated?

23 A. It's allowed within the permit.

24 Q. Okay. But you don't know for sure whether
25 you're going to use conveyors?

1 A. No.

2 Q. Okay. At the time is the company planning to
3 use just trucks to move coal around?

4 A. At this time, yes.

5 Q. Okay. All right. Let's switch over to blasting
6 a little bit. Did you prepare the blasting sections in
7 the mine plan?

8 A. Yes.

9 Q. Okay. Are you familiar with the limitations on
10 blasting proposed in the mine plan?

11 A. Yes.

12 Q. Okay. Yesterday we heard some testimony that
13 DEQ regulations limit blasting to sunrise to sunset,
14 right?

15 A. Yes.

16 Q. And blasting can happen any day of the week,
17 right?

18 A. Yes.

19 Q. Okay. Did the company consider additional
20 limitations on blasting to smaller windows of time, say
21 regular work hours or regular work days?

22 A. We applied the performance standards outlined in
23 the rules, regulations, statutes and guidelines.

24 Q. But you didn't think to do anything more, given
25 the presence of homeowners in the area?

1 A. We complied with the state statutes, rules and
2 regulations.

3 Q. All right. Let's turn to page 337 of DEQ 12.
4 Is this part of the blasting plan attachments or
5 addendums?

6 A. Yes.

7 Q. Okay. You're familiar with this page?

8 A. Yes.

9 Q. Okay. Does it read the -- I'll highlight a
10 portion here for you. Does that say "Seismograph (if
11 required)"?

12 A. It does.

13 Q. So is it accurate to say this page requires
14 recordings of seismograph readings?

15 A. It says "if required."

16 Q. "If required."

17 Do you know if it's common to have a seismograph
18 between a mine site and homes or structures?

19 A. It's neither common or uncommon.

20 Q. At the time is the company proposing to use a
21 seismograph?

22 A. It's been stated earlier by Mr. Emme, but it's
23 worth repeating here, any resident within one-half mile of
24 the permit boundary can request a pre-blast survey.
25 That's a study of the home, usually like was described

1 before, as video or pictures of the home to establish how
2 the home is this day, along with wells. That can include
3 the request for a seismograph to be placed at the
4 residence during blasting to ascertain the vibrations of
5 the home.

6 Q. Okay. Thank you.

7 And you just testified a little bit that the
8 company didn't consider any additional limitations to
9 blasting, say, for instance, limiting blasting if it's a
10 high and -- windy day?

11 A. I'll reiterate the answer that I've previously
12 given. We have commitments in the permit application to
13 comply with the Wyoming rules, regulations and statutes.

14 Q. Okay. Great.

15 All right. Let's go to bonding. I think you
16 testified to this a little bit. Did you write and prepare
17 the proposed bond amounts that's -- that was submitted to
18 DEQ?

19 A. I put together a bond estimate that was
20 submitted to DEQ, yes.

21 Q. Okay. Have you ever prepared a bond estimate
22 before for a coal mine?

23 A. Yes.

24 Q. Was this a surface mine?

25 A. Yes.

1 Q. Have you ever prepared a bond estimate for an
2 underground mine?

3 A. No.

4 Q. How about a highwall mine?

5 A. No.

6 Q. Okay. Would you agree that no matter how small
7 the disturbance is, that there is a period of monitoring
8 necessary to ensure reclamation success?

9 A. Yes. DEQ outlines a phased bond release for
10 reclamation.

11 Q. Okay. How were monitoring costs considered in
12 the proposed bond amount that you submitted to DEQ?

13 A. As Mr. Emme pointed out, DEQ goes through great
14 lengths to revise and update Guideline 12, which is the
15 document that we used in preparation of our bond estimate.
16 It is current. News to me, we actually overestimated some
17 components. And it includes everything necessary for bond
18 estimate.

19 Q. Okay. Can you tell me a little bit about what a
20 contingency factor is in the miscellaneous portion
21 referred to in Guideline 12?

22 A. A contingency factor is an additional cost for
23 some unknowns.

24 Q. Okay. And would you agree that in -- for some
25 unknowns -- would you agree that's important, actually, if

1 the State takes over in the case of a bond forfeiture, as
2 Mr. Emme testified to yesterday?

3 A. It could be an important factor, yes.

4 Q. Okay. Do you have understanding that actually
5 those items are really important for the State because the
6 State has to hire people to do reclamation work in the
7 case of bond forfeiture?

8 A. Yes. The State does need to hire people in case
9 of bond forfeiture to conduct reclamation.

10 Q. Did you hear Mr. Emme's testimony yesterday that
11 it's important not to have zeros in the contingency line
12 items for that reason?

13 A. I don't recall Mr. Emme saying that.

14 Q. Okay. That's fine.

15 All right. Let's turn to Exhibit 65 of our
16 exhibits. Are you familiar with this chart at all?

17 A. Yes.

18 Q. Okay. Would you read the number there -- I'm
19 going to highlight it there for you at the bottom. Can
20 you read it for me?

21 A. Yes. It -- 8,593,642.

22 Q. Okay. And yesterday we heard some testimony
23 that the proposed bond estimate is about 372,000, right?

24 A. So to help council, this bond is not one that is
25 submitted to DEQ, so its relevance here is questionable.

1 Q. Okay. So at one point, though -- did you
2 prepare this chart?

3 A. I did, yes.

4 Q. Okay. So at one point you had a chart that was
5 8 and a half million dollars as a proposed bond amount.

6 A. Yes.

7 Q. And then now the proposed bond amount is
8 371,000?

9 A. Yes.

10 Q. Okay. Was -- where did the difference come
11 from, and why did the company make that distinction?

12 A. The bond that has been submitted to DEQ shows
13 30.8 acres of disturbance. We have told DEQ what we're
14 going to do in the first year. And using Guideline 12, we
15 came to a dollar figure 371,000. As Doug pointed out, 372
16 is the likely amount that it will be.

17 Q. Okay. So the previous estimates maybe had more
18 acreage or -- I guess I'm trying to figure out what the
19 difference is, if you can identify that for me.

20 A. I'll point out again --

21 MR. SUTPHIN: And, Mr. Chairman, first, I
22 am dying to hear Mr. Barron's answer, so please keep that
23 in mind as I make this objection. But I have to make the
24 objection that the witness himself made. The relevance of
25 this is completely suspect. This was not part of the

1 permit file and has not been submitted.

2 But with that said, I am anxious to hear the
3 answer.

4 A. The answer is this has not been submitted to
5 DEQ. This was a prior estimate that we did for an earlier
6 evaluation of the application, and it's no longer
7 relevant.

8 Q. (BY MS. ANDERSON) Okay. So yesterday you -- I
9 think you used the phrase that the company will submit a
10 "financial instrument of sorts" to provide for the bond,
11 right?

12 A. Yes.

13 Q. Okay. Are you aware of what sorts of financial
14 instruments will be submitted by the company?

15 A. I am not.

16 Q. You're not? So you don't know if it's a letter
17 of credit?

18 A. I am not.

19 Q. Or a CD?

20 A. I am not.

21 Q. Or cash or --

22 CHAIRMAN BAGLEY: I think it's clear --

23 MS. ANDERSON: Okay.

24 CHAIRMAN BAGLEY: -- he doesn't know what
25 the instrument will be.

1 MS. ANDERSON: Okay. Great. Thank you.

2 That's all I have.

3 CHAIRMAN BAGLEY: Thank you, Ms. Anderson.

4 Mr. Gilbertz.

5 MR. GILBERTZ: Thank you.

6 CROSS-EXAMINATION

7 Q. (BY MR. GILBERTZ) Mr. Barron, while I fuddle
8 with my technology, good morning.

9 A. Good morning.

10 Q. So I don't forget to ask it, I've got a couple
11 of questions that are going to jump around a little bit.
12 In the course of having been involved in this permit, fair
13 to say you're pretty familiar with its contents?

14 A. Yes.

15 Q. Can you tell me what the length -- the combined
16 lineal feet in length is of all the proposed trenches or
17 box cuts, whichever term you prefer?

18 A. I cannot.

19 Q. Okay. You can sure give me some sort of
20 estimate, can't you?

21 A. There are several panels and pits ranging from
22 hundreds of feet to thousands of feet.

23 Q. Do they add up to more than a mile?

24 A. I think they potentially do, yes.

25 Q. Do they add up to as much as 10 miles?

1 A. Probably not, no.

2 Q. Okay. There was a little discussion about
3 meeting with landowners. Were you -- you mentioned that
4 you went to a meeting that had been hosted by the Powder
5 River Basin Resource Council in 2015, right?

6 A. Correct.

7 Q. Are you aware that in April of 2016, a group of
8 landowners and the PR -- PRBRC had requested a meeting
9 with DEQ and potentially Ramaco to discuss their concerns?

10 A. I was not aware of that.

11 Q. DEQ did not notify you of that request?

12 A. No.

13 Q. All right. So. Let's talk about the group of
14 people that are impacted here. Part of the mine
15 preparation was to identify all the landowners within
16 one-half mile of the permit boundary, correct?

17 A. Yes.

18 Q. And you did that?

19 A. Yes.

20 Q. And that document with the landowners and legal
21 descriptions goes on for pages and pages, doesn't it?

22 A. It does.

23 Q. Fair to say that they're more than a hundred
24 folks on that list?

25 A. Yes.

1 Q. Okay. And the water wells identified as within
2 that same zone in the permit and within one-half mile of
3 it, any knowledge about how many that is?

4 A. Hundreds.

5 Q. Okay. Would the number 357 sound right to you?

6 A. That would sound reasonable, yes.

7 Q. Okay. So let's talk -- then of that 357, the
8 water modeling identified in a number of wells that are
9 likely to be impacted by the dewatering procedures.
10 You're aware of that, right?

11 A. Yes.

12 Q. And that the Fishers' well is one of those
13 wells.

14 A. They actually have two wells.

15 Q. Okay. And those wells are within the group that
16 may be impacted by the dewatering, correct?

17 A. Correct.

18 Q. Do you know, as you sit here today, should that
19 well fail, is it even possible to drill a replacement well
20 for the Fishers?

21 A. Yes.

22 Q. Okay. How do you know that?

23 A. There are aquifers below the depth to which the
24 Fishers' wells are completed that contain water.

25 Q. All right. Any idea what that would cost?

1 A. Typically a water well installation is about a
2 hundred dollars a foot.

3 Q. How many feet are we going down?

4 A. You may need to go down as far as 500 feet.

5 Q. Okay. So I think it occurred to me yesterday
6 that there might be an easy way for you and I to visit
7 about some of these concerns of the landowners. Let me
8 start with this question for you, though. As a local
9 engineer, are you aware of the problems in the Beatty Spur
10 subdivision with all the domestic water wells going dry as
11 a result of coal-bed dewatering?

12 A. I'm aware of coal-bed development and that in
13 that process they dewater the coal.

14 Q. Okay. And you're not aware of the fact that the
15 entire aquifer was dewatered in the coal -- in the Beatty
16 Spur subdivision?

17 A. Again, I'm aware of CBM development, and I'm
18 aware of the process. I'm not aware to the extent they
19 dewatered a specific area.

20 Q. Okay. And so you're not aware, then, that those
21 landowners had to be in litigation with the company that
22 dewatered the aquifer for years?

23 A. I did not study any of the litigation
24 surrounding that.

25 Q. Okay. You said yesterday that you would welcome

1 permit conditions that this council deems appropriate. Do
2 you remember that?

3 A. Yes.

4 Q. Okay. If there is a condition that states if
5 this council deems it appropriate, that should the DEQ
6 find a reasonable relationship between the loss of water
7 quantity or quality, that the operator, Brook Mine, will
8 be obligated to replace that water without the right of
9 ensnarling the landowners in years of litigation?

10 MR. SUTPHIN: I'm going to just have to
11 object as calling for a legal conclusion.

12 MR. GILBERTZ: No, it's not. I'm asking
13 him if this council were to determine that an appropriate
14 condition on this permit is one that states that if the DEQ
15 finds a reasonable relationship between the loss of water,
16 quantity or quality, for any of these owners, that Brook
17 would then be obligated to replace that water at DEQ's
18 direction.

19 Q. (BY MR. GILBERTZ) Would you welcome that?

20 A. To reiterate -- and this has been stated
21 before -- the permit already has an obligation to replace
22 quality and quantity of wells that show causation for loss
23 of quality and quantity in their well.

24 Q. Well, that's not quite good enough for me, sir,
25 because that leaves it to -- the landowners to the mercy

1 of years of litigation. So my question is very specific.
2 Would you welcome it if this council found that a
3 condition of the permit states that should the DEQ find a
4 reasonable relationship between a loss of quantity or
5 quality in the water wells of these owners, that the
6 operator will be obligated to supply the replacement water
7 on that finding?

8 CHAIRMAN BAGLEY: I -- the -- he's
9 answered -- the part he hasn't answered is would he welcome
10 that. I think he's answered that they would be obligated
11 by the permit, and so I don't know -- yeah, I think you're
12 suggesting a permit condition, which I think is useful
13 information for the council. You can re-word that so he
14 doesn't have to -- whether he welcomes it or not is sort of
15 an emotional issue, legal issue, and not sure that that's
16 what we need this expert to be commenting on.

17 MR. GILBERTZ: Sure.

18 Q. (BY MR. GILBERTZ) If that were a condition, you
19 wouldn't find that to be a problem if it satisfied the
20 landowner's concerns?

21 A. In the confines of the permit, I'm okay with the
22 commitments we've made. And I'm also okay with any
23 conditions that this council will find are necessary for
24 the permit application.

25 Q. Perfect. Thank you.

1 Let's talk about the blasting issues for a
2 moment. Testimony was that Brook does not need to blast
3 continuously like the mines in Gillette, right?

4 A. Yes.

5 Q. And you agree with that?

6 A. Yes.

7 Q. Okay. I noticed this morning that it was light
8 at 5:30 in the morning. And so I looked and upcoming in
9 June, about the 20th, the civil daylight hours will be
10 from 4:45 in the morning until 9:45 at night.

11 A. Okay.

12 Q. Okay? I doubt you're familiar with the grooming
13 habits of the Fishers, but do you know whether they're up
14 and puttering around at 5:45 in the morning?

15 A. I cannot speak intelligently on what they do any
16 time during the day.

17 Q. Perfect.

18 Given that Brook and DEQ has told us repeatedly
19 that there is no need to blast like they do in the open
20 pit mines in Gillette, should this commission determine
21 that it is appropriate to put a condition on the mine plan
22 that limits blasting from 8 a.m. until 5 p.m., is there
23 any reason that could not be accommodated?

24 A. Again, I'll defer to the council. Any condition
25 they see fit to put on the permit, we would welcome.

1 Q. Including ones that would say there would be no
2 blasting on Christmas, Thanksgiving, major holidays like
3 that?

4 A. I can't say what they would impose.

5 Q. Okay. Now, there was a little discussion about
6 the seismic monitoring, and you responded by saying that
7 the owners are entitled to have a pre-blast survey, which
8 I agree with. I do not believe that regulation
9 necessarily provides them with the right to request a
10 seismic monitor for air blasts and shockwaves through the
11 ground near their location. Should this council determine
12 that if any landowner within one-half mile of the permit
13 boundary should request that seismic monitoring be
14 installed at their request, is there any reason that
15 cannot be facilitated?

16 A. Western Water actually has a couple of
17 seismographs and we have, for mines in the basin, used
18 those at residence per their request. So I see no reason
19 why that couldn't be done here.

20 Q. Okay. And as you point out, this is a condition
21 that has been placed on some of the mines in Gillette,
22 right?

23 A. I'm not aware of that as a condition. I know of
24 it as a request that's been made and answered.

25 Q. And, likewise, should this commission determine

1 that it would be appropriate for a condition of the permit
2 to be that blasting only be conducted within the weather
3 restrictions that were established for the mines in
4 Gillette in relation to the orange clouds, that is
5 something that could also be facilitated, correct?

6 A. Again, I would defer to whatever conditions the
7 council may impose.

8 Q. Okay. And will they choose to include with
9 those conditions consideration of inversions?

10 A. Again, I'll repeat, I'll defer to their
11 judgment.

12 Q. Okay. Let's talk about the Tongue River
13 alluvium. I understand that there's now a commitment to
14 put monitoring wells within the Tongue River alluvium; is
15 that correct?

16 A. Yes. It's made known through discovery that
17 monitoring wells would be upstream and downstream on the
18 southern portion -- southern boundary of the Brook Mine
19 permit.

20 Q. Okay. And you and I are talking about two
21 different things, I think. You're talking about
22 monitoring the quality and quantity of water in the Tongue
23 River, right?

24 A. Yes.

25 Q. Okay. Is there or is there not a commitment at

1 this point in time for the operator to install monitoring
2 wells in the alluvium of the Tongue River?

3 A. No.

4 Q. There is no commitment?

5 A. Not that I'm aware of.

6 Q. Okay. Should this council determine that it
7 would be appropriate to put monitoring wells in the Tongue
8 River alluvium to determine whether or not there are
9 quantity or quality problems developing in the alluvium,
10 that is something that could be accomplished, correct?

11 A. I see no reason that couldn't be accomplished.

12 CHAIRMAN BAGLEY: I'd like to ask -- I
13 mean, you're bringing up some points about the kinds of
14 conditions the council could add, and I think it's clear
15 that if the council feels conditions need to be added to
16 the permit, we would -- we would add those, and I think
17 they have to abide by those.

18 MR. GILBERTZ: I agree with that. I'm
19 exploring with this witness whether there's any technical
20 objection to that, that that cannot be done.

21 CHAIRMAN BAGLEY: So you're asking if
22 there's technical issues related to installing this?

23 MR. GILBERTZ: Yeah.

24 CHAIRMAN BAGLEY: Okay, so let's go ahead
25 and phrase it so we focus on that technical side, because

1 I'm hearing will they abide by our conditions, and the
2 answer is, yes, they will abide by our condition. So add
3 the technical side.

4 MR. GILBERTZ: All right.

5 Q. (BY MR. GILBERTZ) Should the council determine
6 that it is appropriate to place as a condition on the
7 permit a stipulation that in the event these monitoring
8 wells in the alluvium register a change in the quantity or
9 quality of the water in the alluvial valley floor, while
10 mining operations are in process, that all mining will
11 stop until Brook can demonstrate that it is not the source
12 of this change, could that be accomplished?

13 A. So Brook Mine falls under DEQ supervision and
14 regulation. We have a monitoring plan within the mine
15 plan for events during mining. DEQ has reviewed that plan
16 and found it technically adequate. Should this council
17 see fit to additional commitments, we welcome those.

18 Q. Very good. Let's visit, then, about --

19 COUNCIL MEMBER AGOPIAN: Mr. Chairman.

20 CHAIRMAN BAGLEY: Just a minute.

21 Yes, Councilman.

22 COUNCIL MEMBER AGOPIAN: I've heard now at
23 least 10 times from the witness that they are willing to
24 consider conditions applied by this council to a permit. I
25 don't feel the need to continue to hear that comment in the

1 line of questioning that is getting us to that same
2 response.

3 CHAIRMAN BAGLEY: Thank you, Mr. Agopian.

4 Please continue asking questions, but please
5 recognize I think the council does understand where you're
6 going and that we understand our duty is to help ensure
7 that if there are appropriate conditions that need to be
8 added, we will add those, and that they have the
9 responsibility to comply.

10 MR. GILBERTZ: Very good.

11 Q. (BY MR. GILBERTZ) As it stands right now,
12 Mr. Barron, if you were performing your mining
13 operations -- well, let's back up one step.

14 One of the things you're telling this council is
15 it can rest assured that your mine plan is such there will
16 be no subsidences as a result of the mining, correct?

17 A. So it was stated earlier no one can say no
18 subsidence will occur. Certainly there's always a chance.
19 But the mine plan itself was designed so that no
20 subsidence will occur.

21 Q. Okay. The -- and nowhere in the mine plan, as
22 it stands today, does it say should this unexpected
23 subsidence occur, that mining will stop, does it?

24 A. No, it does not.

25 Q. Okay. And so if this council were to put a

1 stipulation on this, that this unexpected subsidence were
2 to occur, all additional mining would stop until the DEQ
3 is satisfied with what the explanation for that is, that
4 is something that the mine could accomplish, correct?

5 THE WITNESS: I'm sorry, Mr. Agopian.

6 A. But any commitment that the council deems
7 necessary to put on permit application, we'll accept.

8 Q. (BY MR. GILBERTZ) Just two more questions,
9 Mr. Barron. I just want to confirm that you are the
10 author of a couple of statements. We've seen one already.

11 You remember -- let this thing fuddle for a
12 second and then we should get there. It does not like the
13 Trial Pad for some reason. There we go.

14 Earlier in these proceedings you heard me ask
15 questions about part of the reclamation plan. You
16 remember that?

17 A. Yes.

18 Q. Are you the author of the portion of this report
19 that says that the Carney seam subcrops into the Slater or
20 Tongue River alluvial material?

21 A. Yes.

22 Q. And then further down below, the blue -- second
23 set of blue highlighting where it says, "There is
24 communication with the river alluvium"?

25 A. Yes.

1 Q. Okay. Then let's move to another part of what I
2 believe is DEQ 12. We are now looking at page 231 in that
3 exhibit. I have highlighted for us here, therefore, it is
4 likely the Carney seam would lose water to the Tongue
5 River alluvium. Do you see that?

6 A. I do, yes.

7 Q. And are you the author of that?

8 A. Yes.

9 Q. You stand by these statements as a professional
10 engineer, correct?

11 A. Yes.

12 Q. I will visit with the other witnesses about the
13 implications of those statements. Thank you, Mr. Barron.

14 MR. GILBERTZ: I have no further questions.

15 CHAIRMAN BAGLEY: Thank you, Mr. Gilbertz.

16 Does council have any questions? We'll start
17 with Deb.

18 COUNCIL MEMBER BAUMER: No questions.

19 Thank you.

20 CHAIRMAN BAGLEY: No?

21 Nick?

22 COUNCIL MEMBER AGOPIAN: No questions.

23 CHAIRMAN BAGLEY: Meghan.

24 COUNCIL MEMBER LALLY: Yeah I have a few
25 questions.

1 EXAMINATION

2 Q. (BY COUNCIL MEMBER LALLY) Earlier -- yesterday
3 you said -- I thought you said that you weren't going to
4 mine in an area where there was previous mining. But I
5 thought that DEQ said you were going to undermine some of
6 the --

7 THE REPORTER: Some of the what?

8 COUNCIL MEMBER LALLY: BHC, Big Horn Coal
9 works.

10 Q. (BY COUNCIL MEMBER LALLY) And I'm just trying
11 to clarify in my mind what exactly is going on.

12 A. So Big Horn Coal mined the Monarch seam.

13 Q. Right.

14 A. And the Carney seam is below that.

15 Q. Right.

16 A. So we are going to mine in the Carney seam below
17 the old surface mine works that are now backfilled.

18 Q. Okay. And then -- I can't remember the exhibit.
19 The one where it kind of -- trees on top and shows how
20 you're going to mine through.

21 A. Okay. Yes.

22 Q. And the way it looks to me, you're going to take
23 a lot less than half of the coal. But everything we've
24 heard it's going to be half the coal. And I guess I don't
25 understand how that diagram actually translates into

1 actual mining, because there's like big columns of coal.
2 You take out 12 feet, 12 feet, 12 feet, and there's
3 another big column of coal.

4 A. So maybe to clarify again. That is a figure
5 just to show the general nature of what a highwall would
6 look like as you're facing it. It is not in any way a
7 specific description on how we would mine any specific
8 panel. This is just a general figure to show the reader
9 what this looks like as you're facing it, showing that
10 it -- and it's somewhat exaggerated because in order to
11 depict a barrier pillar and illustrate that it's wider
12 than the webs, it gets stretched out in this figure to
13 accentuate that.

14 Q. Okay. I'm just -- I don't know much about
15 mining, so I'm trying to figure it all out.

16 A. Correct. Which is why a picture is good.

17 Q. Okay. And then on the blasting notice, Mr. Emme
18 stated that the general notice that most mines give out is
19 anytime during daylight hours, basically any time of the
20 year. Considering the nature of the blasting that's going
21 to go on at the Brook Mine, is it going to be the general
22 notice or will it be more specific like June 1st through
23 the 15th during daylight hours, or with 30-day notice as
24 opposed to we can blast whenever we want to during
25 daylight hours?

1 A. At this point, notice will be more like the
2 general notice, but I can't say specifically which one
3 will be at this time. After this hearing we might have
4 some extra considerations to take into that notice.

5 Q. Okay. And then what if a water well needs
6 replaced and you can't -- I'm echoing -- and you can't get
7 to a seam -- or water? Because the Fishers have stated
8 they tried to a thousand feet, haven't encountered water.
9 You have to haul water in for an indefinite amount of
10 time, and then there's no company that was in business
11 changed ownership, or whatever, how do the Fishers
12 continue to get water or anybody whose water well is
13 dewatered?

14 A. So at this point we're aware of much thicker
15 coal seams that are below ours, specifically the wall seam
16 is one of those seams. We're confident wells could be
17 completed in that formation and provide the type of water
18 that needs to replace both quality and quantity. If -- if
19 trucking needs to happen, we'll have to put in place and
20 haul water per the permit to replace both quality and
21 quantity.

22 COUNCIL MEMBER LALLY: Okay. That's all
23 the questions I have.

24 CHAIRMAN BAGLEY: Megan?

25 COUNCIL MEMBER DEGENFELDER: No questions.

1 Thank you.

2 CHAIRMAN BAGLEY: Mr. Barron, I have a few
3 questions.

4 EXAMINATION

5 Q. (BY CHAIRMAN BAGLEY) Since we're on this slide,
6 I -- as I look at the subsidence control plan language and
7 I look at this slide, I hear you use the words webs and
8 pillars, I get confused. What -- versus -- so -- but with
9 the highwall mining that you're planning -- or the Brook
10 Mine is planning, are we going to actually produce pillars
11 as opposed to just walls?

12 A. So to help clarify and answer your question, the
13 smaller segments that are -- of coal that are left, those
14 are webs, and they'll be 6 to 8 feet in width. And then
15 between series of those, a barrier, a pillar, which is
16 much wider than that. That's a safety mechanism, so that
17 should a failure occur in a series of webs, that that
18 failure can't propagate to another series of webs. So
19 it's a -- a mechanism that's left in the ground as a
20 protection -- an additional protection for the supporting
21 structure should we encounter something and have some kind
22 of failure.

23 Q. Okay. I'm still confused, because I think I
24 heard -- I don't remember who said it, but that we were
25 thinking about 12-foot wide going in, to take coal out,

1 then 12-foot wall left, then the next 12-foot -- you know,
2 12 feet wide by 2,000 feet deep and we have another
3 12-foot wall, but that doesn't sound like what you're
4 saying. And I know this is probably a bad picture because
5 I don't think it describes what you're planning. But I
6 have a struggle, I got 12 foot, 12 foot, 12 foot, or do I
7 have 12 foot and 6 foot? Or what --

8 A. So in general we'll have -- the highwall miner
9 won't mine to the heights of the coal seam. And we will
10 leave a web of coal that's generally 6 to 8 feet wide.
11 And we'll do that for a series of holes. And after that,
12 we will leave a barrier pillar. Now, this is structured
13 so that it is at least as wide as the coal seam is high.
14 And then we'll start another series of webs and pillars.
15 These are placed on either side of this series to help
16 protect should a failure occur, that that failure can't
17 process along to the next set of webs and holes.

18 Q. Okay.

19 COUNCIL MEMBER LALLY: But are they pillars
20 or are they walls that go all the way --

21 THE WITNESS: They're walls just like this
22 room. Imagine us in this space right here, and these walls
23 represent a wall on either side. And then let's say to
24 buttress this wall we put another larger wall against it to
25 hold it for a failure and it would be on the outside of

1 that wall and that's --

2 COUNCIL MEMBER DEGENFELDER: As wide as it
3 is high?

4 THE WITNESS: Correct.

5 Q. (BY CHAIRMAN BAGLEY) So if I, looking at, you
6 know, one of those thin, smaller dark sections, which I
7 assume is coal remaining.

8 A. Correct. Remaining, yes.

9 Q. At some point, as I go back into that, are you
10 going to cut through that somewhere?

11 A. No.

12 Q. So it really -- okay. You're calling it a
13 pillar, but really I would think of it as a wall.

14 A. It's a wall, correct.

15 Q. The reason I ask is I looked at some of these
16 historical mines that were underground and they use a room
17 and pillar type approach, which is different --

18 A. Yes.

19 Q. -- whereas it would be room and there were
20 actual pillars as opposed to just straight walls?

21 A. Correct.

22 Q. Okay. So these really, at least for me, I'm
23 going to think of it as walls.

24 Now, as I listen to concerns -- and I think, you
25 know, subsidence is a major concern. I mean, historically

1 there's been a lot of subsidence out there. People are
2 concerned that a new mine would add to that. And so the
3 question is at what time -- since it doesn't appear to be
4 specified in the plan right now, at what time will the
5 specifics of a particular -- I guess we'll call it panel,
6 mine panel -- what time will that be identified -- you
7 know, designed out, and then at least somebody will know
8 what the specific details will be for an individual panel.
9 What time does that happen?

10 A. So we will have to submit the ground control
11 plan to MSHA. That usually takes 30 to 60 days for
12 review. And upon its approval, that will be submitted to
13 DEQ for insertion into the permit application. And that
14 will all happen prior to mining for any given panel.

15 Q. Okay. So that happens as we move through the
16 mine -- the 12 years of the mining operation. It happens
17 before any panel -- the design has to be done, has to be
18 sent to MSHA. They will examine it specifically to make
19 sure it doesn't fall in because they're worried about
20 miner safety. And your feeling is that would also, if
21 it's not falling in, it won't cause subsidence.

22 A. Correct.

23 Q. And then that goes to DEQ, gets put in the
24 plan -- or the permit. Does -- when does it -- when does
25 it become available for public -- not comment, but just

1 for the public to be able to see it?

2 A. Immediately upon submission to the DEQ. The
3 public can review that at any time.

4 Q. So as soon as it goes to DEQ, it becomes a
5 public document. Up to that time you're working with
6 MSHA, making sure engineering's right, that it's going to
7 be safe, then, as soon as that's submitted. So we won't
8 know on trench number 7 what the design of that panel will
9 be until you're actually ready -- shortly before -- 30 to
10 60 days before you plan to mine that panel in trench
11 number 7 12 years from now?

12 A. Correct.

13 Q. Okay. And is that the -- is it required, to
14 your knowledge, by statute, that you have to provide the
15 information any sooner than that?

16 A. No. The ground control plan, actually, isn't a
17 requirement of Wyoming state statutes. It's commitment
18 that we added over and above the regulations.

19 Q. So you've added that in -- that you're going to
20 follow that approach. So that we would know. You don't
21 have to -- you're not aware of any law that says at this
22 moment before you've begun mining, you have to plan out
23 all -- all the mine panels for all the trenches. That
24 does not have to be done at this moment?

25 A. That does not have to be done per Wyoming

1 statutes or regulations.

2 Q. Okay. I'm hearing -- I'm hearing some people
3 may wish it had. I just wanted to know whether it was
4 required by statute to be done.

5 Okay. Since it was brought up, there was an
6 exhibit about a very high bond amount of -- 8 million was
7 initially proposed, but I have no idea -- that document
8 didn't appear to be in anything. Where did that document
9 come from?

10 A. So in one of the earlier renditions -- and
11 Mr. Kristiansen alluded to this -- we had proposed a
12 loadout facility like you see in the Powder River Basin
13 for a train loadout some three miles long. That bond
14 estimate related to that activity in year 1.

15 Q. Okay. So the table, which didn't have any
16 accompanying narrative, was related to previous version of
17 what you were planning. You changed the plan, so that
18 table is no longer relevant. And you've now submitted an
19 estimate of what you feel is relevant for the -- what
20 you're planning to do in the first year at this point?

21 A. Correct.

22 Q. Okay. Okay. I think I'll -- I'll add this,
23 that I think -- I think you've been hearing this as
24 well -- you know, there's concern -- people want to know
25 as many details as possible because of the -- some of the

1 historic concern when things were done in a manner that
2 was not necessarily the best way to do things. You know,
3 that we have old mines out there that are subsidizing
4 because they weren't designed as well as they could have
5 been, which is all historical. But there's concern that a
6 new mine could exacerbate that. And also the concerns of
7 the water, which -- yeah, because of other activities that
8 weren't related to -- to your activity at all, but had
9 caused problems, people are concerned about that. So I --
10 I think it's -- we're going to hear those questions over
11 and over again. I know that's frustrating probably for
12 people. But it is important. These are important issues
13 and we need to know -- we also need to know what the law
14 tells us we have to do as well.

15 So with that, any other questions from council
16 members?

17 Mr. Sutphin.

18 MR. SUTPHIN: Thank you, Mr. Chairman.

19 REDIRECT EXAMINATION

20 Q. (BY MR. SUTPHIN) Mr. Barron, I'll just follow
21 up on a few of those questions. And let's just begin with
22 what Chairman Bagley was asking you about.

23 What is your -- I'm trying to think of a good
24 way to ask it. Do you believe that too many commitments
25 or too many details in the mine plan would render the

1 operations too rigid to be done safely?

2 A. Yes. There is opportunity for a permit
3 application to be overcommitted. As a matter of fact,
4 Mr. Emme had pointed out a portion of our permit
5 application that was overly constrained and actually
6 needed to be broadened in order to operate safely.

7 Q. So along those same lines, I think I've heard
8 you say now that you would be okay with any permit
9 condition that this council chooses to impose, right?

10 A. Yes.

11 Q. But I want to make sure that we're clear on
12 this. I mean, do you believe that any additional
13 conditions are necessary to protect the environment or for
14 this permit to be considered to be technically adequate?

15 A. At this point, I think the permit application is
16 sufficient to protect the safety of the residents. And
17 then in the discovery there were a couple additional
18 commitments that had already been stated, and I think
19 those are good additions.

20 Q. Okay. I want to be clear. And I -- because, in
21 my mind, there's a distinction between -- of course -- I
22 mean, will Brook Mine, in your opinion, respect the
23 decision of this council?

24 A. Yes. Absolutely.

25 Q. Okay. But are you suggesting to the council

1 that in some way the permit application is deficient?

2 A. No. I am not.

3 Q. So, for example, Mr. Gilbertz asked you about
4 conditions regarding blasting. Would you be okay limiting
5 it to certain times of day or maybe not doing it on
6 Christmas or Thanksgiving? Do you believe that adding
7 those types of restrictions would make the permit too
8 rigid to be done safely?

9 A. In some cases, yes. And Mr. Emme alluded to
10 this. In the case of an equipment breakdown in the middle
11 of a shot, if you were overly constrained to a certain
12 time period and your equipment broke down just before the
13 time period closed or some time where you couldn't repair
14 it, then you've got unexploded material sitting overnight
15 or even through a weekend and rendering it probably likely
16 to have an orange cloud where you wouldn't have one
17 before.

18 Q. Okay. So other than the conditions that the DEQ
19 witnesses have already explained, do you believe any
20 additional conditions are necessary or appropriate for
21 this permit?

22 A. Outside of those that have already been
23 suggested, no.

24 Q. Now, just briefly as to Councilwoman Lally's
25 comment about what happens if a water well is impaired and

1 you can't drill a new one and then the company goes out of
2 business. Would the reclamation bond cover the costs of
3 restoring a water well?

4 A. DEQ could ask for a line item to take care of
5 that, if necessary.

6 Q. On the subject of water wells, you had some
7 questions from Mr. Gilbertz about the Fishers' wells. Do
8 you remember that?

9 A. I do.

10 Q. Are you familiar with the Fishers' water wells?

11 A. I am, yes.

12 Q. Can you tell the council how deep those water
13 wells are drilled to?

14 A. They have one well that is 220 feet deep and
15 another well that is 170 feet deep.

16 Q. And what is that knowledge based on, Mr. Barron?

17 A. That is data that I've gathered from the state
18 engineer's website.

19 Q. Do you also have predictions about the amount of
20 drawdown that is projected to occur in the vicinity of the
21 Fishers' water wells as a result of Brook Mine's proposed
22 operations?

23 A. Our groundwater -- groundwater model predicted
24 about a 5-foot drawdown in those wells.

25 Q. Okay. Can you tell the council, as you sit here

1 today, what you believe the water column at the Fishers'
2 wells to be?

3 A. Data reviewed on the SEO websites says the well
4 that's closest to their house has a negative 4-foot
5 elevation, meaning it's somewhat artisanal at the surface
6 of the whole 220 feet of that well has water in it. And
7 then the second well that's 170 feet deep has a water
8 level that's 25 feet below the surface.

9 Q. And, again, where did you get this information?

10 A. This was at the SEO, State Engineer's Office.

11 Q. So based on what you have reviewed, can you
12 please tell the council -- again, you probably just said
13 it, but how -- how tall is the water column in the first
14 well at Fishers' place?

15 A. The water column in the first well is 224 feet.

16 Q. And what about in the second well?

17 A. The second well, the water column is 150 -- or
18 45 feet.

19 Q. So based on the projections from the groundwater
20 modeling, do you believe that there will be an impact on
21 the Fishers' wells?

22 A. The wells will be impacted, but they wouldn't be
23 substantively impacted.

24 Q. And why do you say that?

25 A. Because the model predicts only a 5-foot

1 drawdown. So in the 224-foot column of water, they'll
2 still have 219 feet of water in that well.

3 Q. Okay.

4 A. It will --

5 Q. I didn't mean to cut you off. I apologize,
6 Mr. Barron?

7 A. It would be the same for the other well.

8 Q. Let's talk very briefly about subsidence. I --
9 I don't have the map -- exhibit memorized, but what --
10 generally speaking, what is the surface area under the
11 mining panels as proposed by Brook? What sort of
12 conditions are on the surface as they exist today?

13 A. On the surface above the highwall mining panels,
14 it's just natural vegetation and drainages.

15 Q. Okay. Let me ask the question a different way.
16 Do any of the -- as far as you know, are there any homes
17 built on top of where your proposed mining panels are
18 going to be?

19 A. No.

20 Q. Are there any barns above where your proposed
21 mining panels are going to be?

22 A. No.

23 Q. What about shops or garages?

24 A. No.

25 Q. Okay. So -- I mean, the point I'm trying to

1 make, if -- if there is any subsidence, what -- what is
2 your opinion about where that subsidence will be located?

3 A. It will be located in open prairie.

4 Q. So if you're -- if we're out here constructing
5 one of these highwall panels, do you have any reason to
6 believe, based on your engineering expertise, that
7 somebody's house is going to fall in a hole half a mile
8 away?

9 A. No.

10 Q. But -- and I don't mean be flippant. Do you --
11 does Brook Mine consider subsidence an issue that needs to
12 be addressed as part of this process?

13 A. Yes. It's outlined in the permit application.

14 Q. There were some questions about how is DEQ going
15 to know if you're actually extracting 45 to -- 40 --
16 whatever the percentage was. I don't even remember. Can
17 you remind the council of what the technology on the
18 continuous miner allows you to do with respect to coal
19 extraction ratios?

20 A. So the continuous miner surveys as it goes into
21 each one of these drifts, and that information is turned
22 into a report on production that is given to DEQ, and so
23 we know exactly how much we removed.

24 Q. You had a question about whether or not you have
25 personally done any surveying for coal fires in the permit

1 area. Do you remember that?

2 A. Yes.

3 Q. As part of the permit application are you
4 required to do surveying to identify underground coal
5 fires?

6 A. No.

7 Q. In your opinion, who has more expertise
8 regarding subsidence control and prevention? Department
9 of Environmental Land Quality Division or MSHA?

10 A. In this case, MSHA.

11 Q. And what's that based on?

12 A. Because they review several mines in several
13 other areas outside of Wyoming and would have an expertise
14 in subsidence.

15 Q. You testified that you personally have not been
16 involved in a new permit for a coal mine. Do you remember
17 that testimony?

18 A. Yes.

19 Q. And we had some questions along these same
20 lines, but what about Western Water Consulting? Do you
21 have any knowledge of their involvement in new coal
22 permits?

23 A. Yes. We've been involved in new -- our company
24 has been involved in new permit applications.

25 Q. You spoke with Ms. Anderson about performance-

1 based standards. And just to clarify, are performance-
2 based standards a way of setting a standard while leaving
3 the method of compliance with that standard up to the
4 permit applicant?

5 A. Yes. So a performance-based standard, in a lot
6 of the guidance documents and some of the regulations, say
7 exactly that. It's a standard we have to meet. But how
8 we meet that standard is up to the operator.

9 Q. So just to wrap up, then. We'll end where the
10 cross-examination began, and those are questions from
11 Mr. Gregersen about the TR-1 area. Do you remember those
12 questions?

13 A. I do.

14 Q. And, again, to confirm, is it your understanding
15 that there are no monitoring wells in the vicinity of the
16 TR-1 area, right?

17 A. We -- we have not placed any monitor wells
18 there.

19 Q. And, again, because it's been overnight, please
20 remind the council why there are no monitoring wells in
21 the overburden in or around the TR-1 area.

22 A. While we were in the process of drilling and
23 placing monitor wells, we were escorted from the site by
24 the county sheriff.

25 Q. So, Mr. Barron, do you believe it's fair for

1 Brook -- or rather for Big Horn Coal Company to -- to
2 object to the lack of data in that area when they were the
3 ones responsible for not allowing you to gather that data?

4 A. I think it's somewhat disingenuous.

5 Q. So, again, just to conclude, do you believe that
6 the Brook Mine permit application file is technically
7 adequate?

8 A. I do.

9 Q. And do you believe that other than those
10 conditions that have been suggested by the Department of
11 Environmental Quality, there should be any additional
12 conditions placed on your -- on the Brook Mine permit?

13 A. I don't feel any additional restrictions are
14 required.

15 MR. SUTPHIN: The words you've been waiting
16 to hear, Mr. Barron. I have no further are questions.

17 CHAIRMAN BAGLEY: All right. Thank you,
18 Mr. Barron.

19 THE WITNESS: Thank you.

20 CHAIRMAN BAGLEY: We will take a 10-minute
21 break and so be back at 11:00.

22 (Hearing proceedings recessed

23 10:51 a.m. to 11:01 a.m.)

24 CHAIRMAN BAGLEY: All right. Let us
25 re-commence.

1 Any other witnesses, Mr. Sansonetti?

2 MR. SANSONETTI: Yes, Mr. Chairman. We
3 would like to call Mr. Ken Woodring to the stand.

4 (Witness sworn.)

5 KENNETH WOODRING,
6 called for examination by Brook Mine, being first duly
7 sworn, testified as follows:

8 DIRECT EXAMINATION

9 Q. (BY MR. SANSONETTI) Would you state your name
10 to the council, please.

11 A. Kenneth Woodring.

12 Q. And where do you live, Mr. Woodring?

13 A. I live in Greensboro, Georgia.

14 Q. What is your relationship with Ramaco and the
15 Brook Mine?

16 A. I am the senior adviser -- operating adviser for
17 the Brook Mine.

18 Q. And how long have you been associated with
19 Ramaco and the Brook Mine?

20 A. Just under five years.

21 Q. And what is the nature of your duties as the
22 senior operations adviser?

23 A. Primarily assisting with conceptual mine
24 planning.

25 Q. Let's talk about your background, how you came

1 to this position. What is your education?

2 A. I have a BS in mining engineering from
3 Pennsylvania State University. Graduated in 1972. I
4 attended the advanced management program at Harvard
5 Business School in 1996.

6 Q. Okay. When did you first become associated with
7 coal mining?

8 A. Well, during my college years I worked summers
9 and some weekends for Bethel Mines Corporation and
10 Pennsylvania Power & Light. Upon graduation, I took a job
11 with Pennsylvania Power & Light working at two large
12 underground mines in central Pennsylvania. They were
13 longwall operations. I had jobs as a construction
14 foreman, assistant longwall superintendent and ultimately
15 mine superintendent.

16 I left there in 1997 to join a new coal company
17 with operations and reserves in east Kentucky, southern
18 West Virginia. Ashland Coal decided it wanted to enter
19 low sulfur coal production at that point in time. And I
20 had the opportunity to go to work with a very young
21 company with some large reserves. I primarily was charged
22 with developing a large dragline surface mine in West
23 Virginia. The first dragline came into operation in 1982.
24 We did a second one in 1984.

25 In the latter part of the '80s, Ashland brought

1 in two other partners to try to take some of the capital
2 back off the table, and ultimately they went public with
3 the intention of further growing the company.

4 We purchased a company operating in the
5 Pikeville, east Kentucky area, Coal Mac, operating several
6 primarily surface mines, but with some contracting mines,
7 but operating three highwall miners around the properties.
8 That's my first involvement with highwall mining on a
9 day-to-day basis.

10 Q. What was the title of your responsibilities when
11 you were working for the Ashland, Kentucky coal mine?

12 A. At that point in time I was promoted to vice
13 president of operations, so I was responsible for all the
14 company's operations.

15 Q. Okay. And you noted in your first exposure to
16 highwall mining was approximately when? The late '80s?

17 A. Yes.

18 Q. Okay. And would you describe for the council
19 the size of operations that you have managed in your
20 district?

21 A. Well, at that point we had grown to 5, 6 million
22 tons a year. Further expansions included a very large
23 deep mine reserve we acquired in Mingo County, West
24 Virginia where we established a large longwall operation.
25 We also had a large contract surface mine and some smaller

1 contract deep mines associated with that property.

2 In the early '90s we acquired another large
3 surface property on which we added yet another dragline.
4 We were also operating two highwall miners on that
5 property. And at that point the company had grown to
6 about 20 million tons a year.

7 In 1997, Ashland Coal was merged with Arch
8 Mineral, forming Arch Coal. Ashland Oil had interest in
9 both those companies and had a very strong desire to get a
10 merger accomplished because we were at that point in time
11 competing with each other in Central App.

12 With that merger, I was made executive vice
13 president of operations for then a 40-million-ton-a-year
14 company. But that was my first real exposure to mining in
15 Wyoming. Arch Mineral had the old Seminoe Mines and
16 Medicine Bow Mines south here in the Hanna Basin, and were
17 actually operating a highwall miner there. So yet another
18 exposure to highwall mining and this time in Wyoming.

19 But getting to the 40 million tons and being
20 publicly traded, we were still looking at opportunities to
21 expand. In the late '90s ARCO decided to sell their coal
22 mining operations, which included Thunder Basin Coal
23 Company, Black Thunder, Coal Creek, three large deep mines
24 in Utah that contained fuel operations and a large deep
25 mine, excuse me, in Colorado, the West Elk Mine. And we

1 were successful winning that auction. We acquired those
2 properties. And at that point the company grew to about
3 hundred million tons a year.

4 Q. And what was your responsibility at that point?

5 A. Executive vice president of operations.

6 Q. Okay. And how many years did you end up working
7 for Arch Coal?

8 A. Well, I retired in 2005. But from the late '90s
9 until 2005, we grew Black Thunder. We did the LBA at
10 Thunder Cloud across the highway from the Black Thunder
11 office building and added a dragline there. Then we
12 acquired Triton mining operations to the south of Black
13 Thunder and consolidated the whole thing. At that point
14 Black Thunder was right at a hundred million tons a year.

15 So when I left the company, we were doing close
16 to 150 million tons per year. Worked on my golf handicap
17 for about a year and decided I wasn't going to make the
18 senior four, so I wanted to go back to work.

19 Q. So what brought you out of retirement?

20 A. I had the opportunity to join a company called
21 Trinity Coal, which was owned by a private equity firm.
22 They were in the process of attempting to merge their
23 company with another company, James River Coal Company.
24 And they hired me to come in as president and CEO and run
25 the merged entity once the merger was finished. So I went

1 to work. Unfortunately, we weren't able to get the merger
2 consummated, but they still had a very strong interest in
3 monetizing their investment. So I stayed on and we pretty
4 quickly did an auction. There was a change -- actually, a
5 beneficial change in the coal markets, and they decided
6 not to accept the offers they had. So they continued to
7 operate.

8 And in the late, you know, 2009 neighborhood, we
9 were able then to sell the company, the mining assets, to
10 an Indian-based, Mumbai-based company, SR Holdings, who
11 had the Algoma Steel plant on the Great Lakes and in
12 Canada and were developing an iron ore deposit in
13 Minnesota. So we were really just trying to consolidate
14 their steel operations with the met coal we were mining in
15 Trinity.

16 Q. So while you were president and CEO of Trinity
17 Coal, did you also have cause to oversee any other
18 highwall mines?

19 A. Yes. We were running at Trinity five highwall
20 miners.

21 Q. Okay. How did you get involved with Ramaco?

22 A. Well, when SR acquired the company, they were
23 very interested in growing the platform and became very
24 insistent with me that I bring in a business development
25 guy. And somehow he was able to pluck Mike Bauersachs

1 away from Massey Energy Company. He had been their
2 business development VP for 15, 20 years and very
3 successful and one of the very best in the business.

4 SR did, I think, genuinely intend to grow the
5 company, but we found out fairly quickly, within 12
6 months, that they had too many other things going on
7 internationally and really didn't have the capital to grow
8 the company. Mike got a little disenchanted and decided
9 to look at some other opportunities, which, in the end,
10 ended up with him partnering with Randy Atkins, Randall
11 Atkins of Yorktown Capital Partners, to form Ramaco.

12 Q. About what year would this have been?

13 A. In 2011 I retired from Trinity. Mike left a
14 little bit ahead of me. And I, again, worked on my golf
15 handicap and fished a little bit. But about a year after
16 my retirement from Trinity, Mike called and said we've got
17 some assets in Wyoming that I think you could help us
18 with, and they invited me to come in as a consultant and
19 help them with a conceptual mine planning here.

20 Q. Okay. Are you familiar -- and we'll zero in on
21 this particular permit application. Are you familiar with
22 the Brook Mine permit application?

23 A. I am.

24 Q. And did you work with Mr. Jeff Barron in regard
25 to the permit application?

1 A. Yes, I did.

2 Q. There's been a lot of discussion about the
3 abilities and background of the Cardno Company that
4 obviously helped produce some of these studies. What
5 interactions have you had with Cardno Company in your
6 history?

7 A. Well, historically, back really into the '80s, I
8 had done a lot of work on many of our acquisitions with
9 Cardno, evaluating reserves we were buying, certifying the
10 reserves we were buying. We were publicly trading. It
11 was important to have an independent consultant verify the
12 numbers. And also really at least do a sore thumb [sic]
13 on the mine plans that we were developing for those newly
14 acquired properties to give the board of directors some
15 comfort.

16 So Cardno has had, while varied experiences,
17 primarily Central App, but certainly worked wider. I
18 don't know how much work they've done in Wyoming, but I'm
19 sure they've done some. And, really, all the major coal
20 basins in the country.

21 Ramaco had been working, when I came on board,
22 excuse me, with Golder Engineering, a Denver-based
23 company. It's the old Marston & Marston Mining
24 Consultants. And had actually developed a conceptual mine
25 plan for the property that was more of an area strip, area

1 surface mine like you would see over in the Gillette area.
2 They had several scenarios. One was just shovel truck.
3 One was shovel truck with dragline. One was shovel truck
4 with some dozer assist in overburden production with a
5 dragline.

6 And they were good plans. And I looked through
7 those plans. I thought there might be a little better way
8 to do it, so we asked them to do another derivation, which
9 did turn out to be a little better, but still not getting
10 the cash cost structure down in the neighborhood that we
11 were trying to get to. And I -- I thought that perhaps a
12 highwall miner approach, which would not mine as many
13 reserves, but potentially mine them more cost effectively
14 could work.

15 So thinking back to the past, the Cardno folks
16 have done a lot of layout work for highwall miner
17 operations in the East. They know the folks that the --
18 that manufacture and operate the highwall miner systems
19 very well. So they just seemed like a logical solution,
20 recommended Ramaco that we bring them in to help with some
21 additional conceptual planning, and we did that.

22 They did a plan first in this Phase I area
23 that's being permitted presently in the subject permit.
24 They also did a Phase II plan on the eastern portion of
25 the property. By design Phase I was intended to cap at

1 about 2 million tons a year. Phase II's in a little
2 larger reserve area. It's designed to do about four
3 million tons a year. And assuming all those plans would
4 be implemented, Ramaco could either run for a longer
5 period of 2 million tons a year, or they could do
6 6 million tons a year if everything was mobilized at the
7 same time. So we thought we had a good solution, flexible
8 solution. The cost structure pretty good. And at that
9 point Ramaco directed that we move forward with the
10 permitting. And Jeff Barron's been involved from the
11 get-go there.

12 Q. Okay. So just briefly describe the mine plan
13 from an operational point of view.

14 A. Well, as we discussed it's a series -- primarily
15 a series of trench cuts in Phase I with highwall miner
16 panels on either side.

17 Q. Okay. Once the permit is issued, there's been
18 discussion about the need to do additional studies. What
19 type of additional technical studies will be performed
20 prior to mining actually commencing?

21 A. Primarily the ground control plan, the
22 subsidence issue we've been talking about. And as
23 Jeff Barron pointed out, as we move in each new set of
24 highwall miner panels, we'll have strata samples taken of
25 the immediate roof, the coal seam and floor material.

1 That information, along with the geological information in
2 that area, the height over the coal seam that we're
3 mining, the thickness of that coal seam, will be run
4 through the ARMPS process, and that then will tell us what
5 size webs we need between those holes, depending, again,
6 on the cutting height, to provide a safety factor of 1.3,
7 which should, then, in turn provide for no surface
8 subsidence.

9 Q. You were present during the testimony of
10 Mr. Barron?

11 A. Yes.

12 Q. And you heard the questions asked of him by the
13 chairman in regard to walls and pillars and webs and
14 things like that. Do you have anything to add to help
15 make that more clear as to whether or not we're talking
16 about holes and walls and some big walls?

17 A. Well, I call the penetration the hole -- I call
18 it hole or a cut. The in between webs I typically call a
19 web. And then the larger web between several holes and
20 web series is a barrier pillar that he alluded to. And it
21 provides you another safety device that if, for whatever
22 reason, there would be a failure in that segment, it would
23 be stopped at that barrier pillar and not override into
24 next set of panels.

25 Q. Okay. Were you also present yesterday when

1 DEQ's Mr. Emme testified?

2 A. I was.

3 Q. And did you hear his testimony in regard to the
4 topics of both blasting and bonding?

5 A. Yes.

6 Q. Is it Ramaco's intention -- Brook Mine's
7 intention to abide by DEQ's rules and regulations in
8 regard to bonding and blasting?

9 A. Absolutely.

10 Q. How would you compare the plan of Brook Mine to
11 others that you have been involved with?

12 A. Well, by Wyoming standards it's a small mine.
13 Compared to Black Thunder, there's just no comparison.
14 It's, in my opinion, much more similar to an eastern
15 surface mine. The equipment for the Phase I area is a
16 992 Cat loader and three 777 Cat trucks. You would find
17 that complement of equipment on a lot of small mines
18 around in southern West Virginia, Kentucky. A mine
19 running that equipment is going to move 3.3, 3.4 million
20 yards of overburden a year. In the East, that's just a
21 couple hundred thousand tons of production. Here it's
22 more than that. Coupled with a highwall miner, it's 2
23 million tons per year. The mining ratios here are just
24 4-to-1 and in the East they're typically in the high teens
25 or even little bit higher.

1 So the overburden activity, which is the primary
2 activity on any surface mine, is comparable to one of
3 those mines in the East. And they're very common.
4 They're all over the place. I've been involved in
5 goodness knows how many of them. They're efficient. They
6 typically don't run on reserves quite as large as this
7 reserve variably. And they might mine for five or six
8 years and then move on to another site.

9 They're often coupled with highwall miner
10 operations. The highwall miner cost structure is far
11 superior to the surface mine structure so the overall
12 project is just far more economical to run, if you can
13 work a highwall miner --

14 Q. Mr. Woodring, have you operated highwall mines
15 in areas with similar density as far as landowners are
16 concerned --

17 A. Yes.

18 Q. -- surrounding the mine?

19 A. Yes, sir. Many of the eastern mines, really.
20 Most of the eastern mines are in mountains surrounded by
21 valleys or hollows. And the topography is such in the
22 east that most of the people live in the valleys. There's
23 usually no good way to get up on top of the mountain. And
24 if you do, there's no flat land up there to build on.
25 There is a small river valley with some flat land on

1 either side, but the hills are very steep. The valleys
2 are not anywhere near the broadness of the Tongue River
3 Valley here. So there are people in very close proximity
4 to the base of that mountain and it's challenging.
5 They're very close to the mine and -- but with the proper
6 blasting and other safety measures, it -- it's not an
7 issue at all, and that's just the way most eastern mines
8 operate.

9 Q. Do we have any doubts about being able to
10 operate this particular Brook Mine with the same safety
11 and health --

12 A. Oh, none --

13 Q. -- concerns?

14 A. None whatsoever.

15 MR. SANSONETTI: Okay. I have no further
16 questions.

17 CHAIRMAN BAGLEY: Thank you,
18 Mr. Sansonetti.

19 Mr. Kuhlmann, any questions?

20 MR. KUHLMANN: No questions for this
21 witness. Thank you.

22 CHAIRMAN BAGLEY: Thank you.

23 Mr. Gregersen?

24 MR. GREGERSEN: Mr. Chairman, we have no
25 questions.

1 CHAIRMAN BAGLEY: Ms. Anderson.

2 MS. ANDERSON: Thank you, Mr. Chairman.

3 I just have a few questions, Mr. Woodring.

4 CROSS-EXAMINATION

5 Q. (BY MS. ANDERSON) Good morning. How are you?

6 A. I'm good. How are you?

7 Q. Good. I'm doing well.

8 So you talked a little bit about this. So can
9 you just clarify again what's your current role with
10 Ramaco?

11 A. I'm senior operations adviser for the Brook
12 Mine.

13 Q. Okay. And do you plan to be involved with the
14 Brook Mine going into the future?

15 A. That's up to Ramaco. I do have an engagement
16 agreement with them that runs for about the next year. At
17 this point I would expect that I will be around, but,
18 again, in advisory role, not a day-to-day operating role
19 in the coal mine.

20 Q. Okay. Great. That answers my next question for
21 me without even asking it.

22 Okay. All right. We've heard some testimony
23 about -- you know, that the company isn't planning to
24 mine, at least in the first year of its permit, right?

25 A. That's correct.

1 Q. Okay. You're just going to move some dirt
2 around? I mean, that's probably a general way of saying
3 it, but --

4 A. Yes.

5 Q. Okay.

6 A. Topsoil.

7 Q. Topsoil. Okay.

8 And we've heard, you know, a lot about the
9 testimony about various geotechnical and hydrologic
10 studies that still need to be done before the company
11 starts mining, right?

12 A. Uh-huh.

13 Q. Okay. And we've heard some testimony about
14 other permits the company still has to get, like a WYPDES
15 permit or MSHA permit?

16 A. (Deponent nods head.)

17 Q. Right?

18 A. Yes.

19 Q. Okay. So I guess my question to you,
20 Mr. Woodring, given all this, when is the company even
21 going to start mining?

22 A. I'm sorry?

23 Q. When is the company going to start mining?

24 A. Well, we'd have to have a mining permit. And we
25 can't go to potential customers and try to sell people

1 coal if we can't tell them when we expect to start the
2 coal mine. That's been a difficulty now for quite some
3 time, and we're just anxious to get to that point where we
4 can move forward with process. And it's very involved.

5 Q. Okay. So sitting here today, you don't know
6 when the company's going to start mining?

7 A. If you tell me when we're going to get the
8 permit, I can give you some pretty good ideas.

9 Q. I don't think that's under my control.

10 All right. So given all of this, if you were
11 sitting in the shoes of one of the neighbors to this mine,
12 would you characterize this as a speculative permit?

13 A. I'm sorry?

14 Q. Would you characterize this permit application
15 as speculative?

16 A. In what regard?

17 Q. In regard that you don't know when you're going
18 to mine or you don't know who you're going to sell the
19 coal to.

20 A. No.

21 Q. Why not?

22 A. I think that's fairly common.

23 Q. That's fairly common. Okay.

24 Mr. Woodring, is public confidence in your coal
25 mine project a concern of yours?

1 A. Again, it's not my company, but I think that's a
2 normal concern for anyone operating anything anywhere.

3 Q. Okay. Thank you for that.

4 Have you read the objection letters to this
5 permit application?

6 A. I have certainly perused through them.

7 Q. But you haven't read them in all detail?

8 A. No.

9 Q. Okay. Would you agree, generally, that there
10 are a lot of concerns and questions from the public about
11 this coal mine permit application?

12 A. Well, certainly based on what I've looked at
13 there are concerns, but I think they're fairly common
14 concerns for anyone's opening a coal mine.

15 Q. You mentioned a lot of your experience back East
16 in Appalachia. Is it similar to get, you know, a dozen
17 permit letter objections to coal mine permits out there?

18 A. Oh, sure.

19 Q. Sure. Okay.

20 So given the concerns, what have you or other
21 agents or employees in your company done to alleviate the
22 concerns of neighboring landowners?

23 A. Well, trying to develop a good operating plan
24 and a good valid permit.

25 Q. And have you reached out to, say, Mr. Buyok?

1 A. I haven't personally.

2 Q. Have you reached out to Mr. Bocek?

3 A. I haven't personally reached out to anybody.

4 Q. Okay. Does the company plan to have any public
5 meetings or, I guess, open dialogs with landowners in the
6 area?

7 A. I don't know.

8 Q. You don't know. Okay.

9 MS. ANDERSON: I think that's all for you.

10 Thank you.

11 CHAIRMAN BAGLEY: Thank you, Ms. Anderson.

12 Mr. Gilbertz.

13 CROSS-EXAMINATION

14 Q. (BY MR. GILBERTZ) Good morning, Mr. Woodring.

15 A. Morning.

16 Q. My name is Jay Gilbertz. I'm an attorney for
17 Mary and David Fisher. I have only a few questions for
18 you.

19 A. Uh-huh.

20 Q. You spoke a little bit about your experience in
21 managing and running coal mines.

22 A. Yes.

23 Q. And so in the course of this hearing, we've sort
24 of heard that, you know, these are evolving operations.
25 Not all contingencies can be planned for. Does that sound

1 correct to you?

2 A. Yes.

3 Q. Okay. And so then what we sort of know is that
4 unforeseen problems might be encountered during coal
5 mining, right?

6 A. They do at any coal mine.

7 Q. And because the previously unforeseen problems
8 or contingencies, those sorts of things are not covered by
9 the reclamation bonds, right?

10 A. Some of them well could be, but certainly things
11 come up and company must address that have nothing to do
12 with the reclamation bond.

13 Q. Let's go ahead and make it specific to the
14 permit we have in front of us. What Brook's told the
15 council is that Brook is confident that there won't be
16 impacts to the alluvial valley floor aquifers. Is that
17 your understanding?

18 A. Yes.

19 Q. And also that there wouldn't be any other
20 impacts to hydrology that are going to impact the
21 landowners, right?

22 A. Of substance in a negative way.

23 Q. Not -- not affect them negatively?

24 A. Yes.

25 Q. Okay. And there's a belief that subsidence for

1 this will be a nonsubsiding mine; is that right?

2 A. That's correct.

3 Q. And, therefore, if those things were to happen
4 in these circumstances in an unforeseen fashion, they
5 wouldn't be covered by the reclamation bond that is being
6 proposed, right?

7 A. Potentially not.

8 MR. SANSONETTI: Do you know the answer to
9 that question? Have you studied the bond?

10 MR. GILBERTZ: He's answered already.

11 A. Well, I think in cases they could be and other
12 cases they might -- might not.

13 Q. (BY MR. GILBERTZ) Okay. Let's then -- in most
14 circumstances, that's when the mine operator would need to
15 rely on its resources in order to remedy any of these
16 unforeseen problems, right?

17 A. That's correct.

18 Q. Okay. Can you tell me who Byron Ubernosky is?

19 A. No.

20 Q. Okay. Are you aware that Brook Mine's formal
21 report under penalty of perjury with the Wyoming Secretary
22 of State reveals that its assets everywhere are worth
23 \$250,000 or less.

24 A. I'm not familiar with that.

25 Q. Okay. At this point in time, Ramaco itself has

1 not agreed to guarantee the reclamation or environmental
2 liabilities of Brook Mine, has it?

3 MR. SANSONETTI: I'm going to have to
4 object there, Mr. Chairman. Where is this line of
5 reasoning going on? We're here because of a permit and
6 whether or not it's technically adequate. This is some
7 sort of examination of financing and the like, which is
8 beyond the scope of direct and certainly beyond the mine
9 operator's knowledge.

10 MR. GILBERTZ: Happy to respond to that.

11 The door to this has been blown wide open. This
12 whole hearing we have heard that these are unforeseen
13 contingencies, contingencies will be dealt with and the
14 operator will step up. The statute requires that the
15 demonstration -- that the reclamation plan can be
16 accomplished. The fact that Brook Mine itself has less
17 than \$250,000 in total assets is directly relevant to
18 whether it can fulfill those obligations.

19 CHAIRMAN BAGLEY: That would seem to be
20 related to the bonding. My understanding, the bonding is
21 not set until after -- before -- immediately before the
22 permit is approved, after this meeting.

23 MR. GILBERTZ: Dr. Bagley, I think that's
24 precisely the point. The bonding, as we have been told,
25 isn't going to cover any of these things, and, therefore --

1 MR. SANSONETTI: That's not true. That's
2 not true.

3 CHAIRMAN BAGLEY: Well, the bonding -- my
4 understanding from yesterday's discussion is the bonding is
5 one year at a time. The DEQ reviews that prior to the --
6 the year beginning and the bond has to be set.

7 MR. SANSONETTI: And the bonding was also
8 not self-bonding.

9 CHAIRMAN BAGLEY: We did also hear that.

10 MR. SANSONETTI: That's right.

11 MR. GILBERTZ: My question --

12 CHAIRMAN BAGLEY: So, yeah, the
13 financial --

14 MR. GILBERTZ: Here's what I'm going to do,
15 is I'm going to make an offer of proof for the record. And
16 I will offer the filings of Brook Mine for 2015 and 2016
17 with the Wyoming Secretary of State, which revealed that
18 they only paid \$50 in filing fees, which can only be
19 accomplished if the value of all assets reported by the
20 filing LLC are worth \$250,000 or less. And I'll ask that
21 the council receive these as an offer of proof.

22 CHAIRMAN BAGLEY: What Mr. -- okay. We
23 will receive that as -- as a -- an offer.

24 MR. GILBERTZ: Thank you. I have no
25 further questions.

1 CHAIRMAN BAGLEY: Thank you, Mr. Gilbertz.
2 Mr. Sansonetti.

3 MR. SANSONETTI: No further questions.

4 CHAIRMAN BAGLEY: Forgot to ask the
5 council.

6 COUNCIL MEMBER BAUMER: No questions.
7 Thank you.

8 CHAIRMAN BAGLEY: Questions? Questions?
9 Do you have any questions?

10 COUNCIL MEMBER AGOPIAN: No.

11 CHAIRMAN BAGLEY: Meghan?

12 COUNCIL MEMBER LALLY: No, thank you.

13 CHAIRMAN BAGLEY: I'm trying to see if I
14 have some questions. I do have some questions.

15 EXAMINATION

16 Q. (BY CHAIRMAN BAGLEY) Mr. Woodring, you
17 mentioned different phases, and so I got confused.
18 and you mentioned 2 million tons per year in -- at
19 one point in production. You mentioned 6 million tons
20 per year production. And so I got confused. What --
21 this current mine plan we're looking at, do you -- do
22 you recall or do you know what the production is for
23 this mine plan?

24 A. It's on for 2 million tons a year. This is the
25 Phase I. There is a Phase II, which is the permit

1 application hasn't been completed yet.

2 Q. So Phase II is a -- a separate -- complete
3 separate?

4 A. Correct.

5 Q. These seven trenches and things that we're
6 looking at this --

7 A. Has nothing to do with this.

8 Q. -- are 2 million tons per year?

9 A. That's correct.

10 CHAIRMAN BAGLEY: Okay. Thank you. That
11 was my only question.

12 So now, Mr. Sansonetti, I still -- since I got
13 out of order, do you have any redirect?

14 MR. SANSONETTI: I don't. I said we would
15 get done in 30 minutes, and we are 29.

16 CHAIRMAN BAGLEY: All right. Thank you,
17 Mr. Woodring.

18 Do you have any other witnesses?

19 MR. SANSONETTI: We do not.

20 CHAIRMAN BAGLEY: So it is 11:35. We are
21 at, I think, a good point to take say an hour and 15 minute
22 lunch break. So little bit early for lunch, but then we
23 come back and we will start with Big Horn Coal witnesses.
24 So let us say at 10 to 1:00 we'll be back. We're in
25 recess.

1 (Hearing proceedings recessed

2 11:35 p.m. to 1:51 p.m.)

3 (Council Member Degenfelder

4 is no longer present.)

5 CHAIRMAN BAGLEY: All right. Let's go
6 ahead and get started.

7 So, Ms. Boomgaarden, please call your first
8 witness.

9 MS. BOOMGAARDEN: Thank you, Dr. Bagley.

10 Big Horn Coal calls its first witness,
11 Mr. Jordan Sweeney.

12 And I've advised Mr. Sweeney that there is a
13 witness notebook right there in front of him. There you
14 go. That has Big Horn's exhibits.

15 I apologize to the council --

16 THE REPORTER: Oops. Swear him in or --

17 MS. BOOMGAARDEN: Yes. Thank you.

18 (Witness sworn.)

19 JORDAN SWEENEY,
20 called for examination by Big Horn Coal, being first duly
21 sworn, testified as follows:

22 MS. BOOMGAARDEN: Thank you.

23 I apologize in advance for the poor quality of my
24 voice and the fact that I've been the one interrupting the
25 audio-recording with coughing. I am trying my best to keep

1 that under control. I don't think I have anything
2 contagious. I think it's just an allergy-asthma issue I'm
3 dealing with this afternoon.

4 So, Mr. Sweeney, if you can't hear me, please say
5 so, and I'll speak up.

6 DIRECT EXAMINATION

7 Q. (BY MS. BOOMGAARDEN) Now, Mr. Sweeney I know
8 you testified in front of this council before.
9 Councilwoman Baumer was not at the council at that time,
10 so we're going to be conscientious with going through a
11 few of these exhibits to at least allow some familiarity
12 for Councilwoman Baumer and to get some information on the
13 record. But please understand council members are not
14 going to exhaustively go through certain of these exhibits
15 that I know many of you already have some familiarity
16 with.

17 Mr. Sweeney, if you could first please turn to
18 what has been marked as Big Horn Coal Exhibit BHC 1. And
19 do you see that exhibit?

20 A. I do.

21 Q. Can you please identify it?

22 A. That is my resume.

23 Q. And in the interest of time, we'll have the
24 council review for themselves your education and prior
25 experience. It says you're currently the regulatory

1 affairs manager for Lighthouse Resources; is that correct?

2 A. That is correct.

3 Q. And the general manager for Big Horn Coal?

4 A. Yes.

5 Q. Can you please just briefly describe what your
6 responsibilities are in those roles.

7 A. Yes. As the regulatory affairs manager for
8 Lighthouse Resources I am responsible for all the
9 permitting and overseeing activities for coal operations
10 that Lighthouse owns and managers.

11 Q. And for Big Horn Coal, what's your
12 responsibilities here in the Sheridan area?

13 A. For Big Horn Coal, it is an active mine permit,
14 and it is in stages of reclamation. We do have operations
15 going on with utilization of the shop and rail spur. So I
16 manage the properties from Big Horn -- Big Horn mine.

17 Q. Have you ever been responsible for preparing and
18 submitting a mine permit application to the DEQ Land
19 Quality Division?

20 A. I have been in the permitting -- or
21 environmental realm for about 10 years, and I have
22 prepared and submitted various types of permit
23 applications to the DEQ.

24 Q. Have you ever prepared and submitted a new
25 permit application?

1 A. I have not prepared and submitted a new permit
2 application.

3 Q. A major revision?

4 A. Yes, I've submitted major revisions.

5 Q. Renewals?

6 A. Yes.

7 Q. And your role in preparing and submitting those,
8 could you describe that a little more fully?

9 A. Yes. So as a permit coordinator or
10 environmental engineer in my past, I am responsible for
11 working with landowners, working with outside independent
12 consultants to collect the necessary baseline data and
13 perform the proper analysis of that data. And to
14 incorporate that into existing permits, revising the
15 permit text for those amendments or revisions, and
16 submitting that in collaboration with the DEQ.

17 Q. And were those permitting activities related to
18 surface mining?

19 A. They were.

20 Q. Have you done any permitting for underground
21 mining?

22 A. No underground mining permitting, no.

23 Q. How about highwall mining?

24 A. I have been involved with highwall permitting at
25 the Black Butte Mine. We did some highwall mining in the

1 year 2007.

2 Q. So is it fair to say that you have direct
3 personal knowledge and experience with the Wyoming coal
4 permitting requirements and processes?

5 A. I do.

6 Q. Excuse me.

7 A. Sorry. I do.

8 Q. Tell us a little bit about Lighthouse Resources.

9 A. So Lighthouse Resources is a resource-based
10 company. They own various coal resources and mine those
11 various coal resources throughout the states of Wyoming
12 and Montana. And they also have an interest in port
13 facilities in the Pacific Northwest where the business
14 strategy for the Decker coal mine, for example, up in
15 Decker, Montana, is to export that resource to Asian
16 customers, mainly Japan and South Korea.

17 Q. And please tell the council what the
18 relationship is between Lighthouse and Big Horn Coal?

19 A. So Big Horn Coal is a direct subsidiary of
20 Lighthouse Resource -- Resources, Inc. -- Lighthouse
21 Resources. And it is owned 100 percent by Lighthouse
22 Resources.

23 Q. And when did Lighthouse acquire Big Horn Coal's
24 operations and assets?

25 A. It was a transaction that occurred during

1 November of 2011, when Ambre Energy came to the United
2 States and they acquired the Level 3 properties, formerly
3 managed by Kiewit Mining Group. And that occurred in
4 November of 2011. And then in September 2014 we had a
5 name change from Ambre Energy, which you may know that
6 name, to Lighthouse Resources.

7 Q. And just please remind us when you began working
8 for Lighthouse Resources?

9 A. I was working at the Black Butte Mine during the
10 transaction, and shortly thereafter, February of 2012, I
11 came down to the Salt Lake office and began working for
12 Lighthouse Resources.

13 Q. Thank you.

14 I'd like you to turn to what we've marked as
15 Big Horn Exhibit 2. And I'd like to use this exhibit to
16 allow you to briefly acquaint the council members with
17 Big Horn's interests in the areas -- mine permit areas
18 that we've been talking about. Do you recognize
19 Exhibit 2?

20 A. I did. I put that exhibit together.

21 Q. And what was the source information that you
22 used for that exhibit?

23 A. A couple sources. The aerial photograph in the
24 background, you can see that it may be two different
25 shades. That's due to various years of that aerial

1 photograph. And that was pulled from an ARMP map program,
2 GIS software. And also you can see the trench cuts. The
3 TR-1 trench cut, TR-2 trench cut, and this pink hatched
4 polygon on this exhibit. And those were taken directly
5 from the Brook Mine permit application and superimposed
6 onto this exhibit.

7 Q. Thank you. I think we've had a fair amount of
8 discussion with regard to the trench 1 and trench 2. But
9 what about that pink hatched polygon? Can you please
10 explain how that area is denoted in the mine permit
11 application?

12 A. So the legend is very hard to read, but down
13 here in the bottom left-hand corner, states Brook surface
14 disturbance. All the area within that pink boundary could
15 be disturbed at one time or another by the Brook
16 operation.

17 Q. And how does that disturbance area in the pink
18 crosshatch relate to Big Horn Coal's existing permit
19 boundary?

20 A. That occurs with inside the Big Horn permit
21 boundary. As you can denote by the red polygon, that is
22 the current Big Horn permit boundary. And the yellow --
23 the polygon -- is the Brook Mine permit boundary. You
24 notice it overlaps. Also, pointed out -- I can point out
25 on this map the vicinity of the Big Horn mine that's

1 located just about six miles north of the town of
2 Sheridan. I-90 is located to the west of the operation.
3 County Road 338 is located to the south and east of the
4 operation. This blue big polygon to the south and east of
5 the Big Horn permit boundary is a state coal lease that is
6 currently leased by Big Horn Coal Company.

7 Also denoted on this map is the Big Horn rail
8 spur outlined in this blue line. The green line on this
9 map that goes up and through the Big Horn -- or pink
10 crosshatched area is the Big Horn Coal access road, which
11 is currently classified an approved post-mine access road.

12 Just north of the pink disturbance area is the
13 Big Horn shop. So that shop was used during mining and is
14 still being used. We had tenants in that facility. And
15 directly to the east of that shop is a bridge. And that
16 is going across the Tongue River, and that is how the Big
17 Horn accesses the lands north of the Tongue River. At
18 this time, that's about it.

19 Q. Thank you.

20 If you could bring your attention back to the
21 TR-1 trench. I want to make sure that the council
22 understands the relationship of that trench. So you're
23 showing from here it looks kind of like a brown polygon
24 that's oriented horizontally. Can you please put your
25 pointer on the TR-1 trench?

1 A. That's correct. The legend states the brown
2 crosshatched, located directly south of the shop area.

3 Q. And if you were to orient that to the Skittles
4 map that we've all become so familiar with this week, that
5 Skittles map seems to extend further both to the north and
6 south of that trench. Can you just please explain the
7 difference between the trench and what is shown on that
8 Skittles map?

9 A. Certainly. So that trench, also known as a box
10 cut, is where the surface mining would occur. So the dirt
11 material would be removed out of that trench, or box cut,
12 and then highwall miner would go in and penetrate with the
13 panels going south and north from that trench cut.

14 Q. And, Mr. Sweeney, is it your understanding this
15 TR-1 area is the first area that Brook intends to mine?

16 A. That is correct.

17 Q. As part of your responsibilities to manage Big
18 Horn Coal operations and assets, are you responsible for
19 monitoring Brook Mine's plans and overlapping permitting
20 activities?

21 A. I was, yes.

22 Q. I'm going to ask you to please turn to Big Horn
23 Exhibit 3. Can you please identify that exhibit?

24 A. This is a document dated January 25, 2017. It
25 is addressed to Mr. Alan Edwards of Wyoming DEQ. And it

1 is the Big Horn objections filed on behalf of -- filed by
2 Big Horn on the review of the Brook Mine application.

3 Q. And is that your signature at the end of the
4 letter?

5 A. It is.

6 Q. And what was the purpose of you sending this
7 letter?

8 A. During the review of the Brook Mine permit
9 application, myself and independent experts that I
10 solicited help from to review that permit application, we
11 denoted some technical deficiencies that we felt the DEQ
12 should be aware of and should address as a result of --
13 result of this letter.

14 Q. And what was your expectation? What result did
15 you think would come from sending that letter to
16 Mr. Edwards?

17 A. It was our intention to have an informal
18 conference with the administrator, deputy administrator,
19 Mr. Edwards, to discuss the -- what we felt -- Big Horn
20 felt was technically deficient with the permit as relates
21 to the surrounding environment in this area.

22 Q. And did you -- did Big Horn request an informal
23 conference?

24 A. We did, yes.

25 Q. Thank you.

1 Let's talk a little bit further about the Big
2 Horn objection letter at Exhibit 3. Did you prepare the
3 letter by yourself?

4 A. I did not.

5 Q. I think you alluded to this, but who else helped
6 you prepare the text of each objection?

7 A. I solicited help from independent professional
8 experts.

9 Q. And who hired those experts?

10 A. I did.

11 Q. How did you determine who you wanted to hire?

12 A. Big Horn has a working relationship --
13 well, actually the parent company, Lighthouse, has a
14 working relationship with Aqua Terra Consultants, so
15 Mr. Joe Gerlach, as well as with Millcreek Engineering,
16 Mr. Jason Todd. And I specifically solicited the help
17 from the two of them based on their professional
18 experience, as well as their history and knowledge of the
19 area.

20 Q. Thank you.

21 What did you ask them to do?

22 A. I asked them to review the Brook Mine
23 application and to -- based on their areas of expertise,
24 to provide just their opinions and general comments on the
25 technical adequacy of the mine plan application.

1 Q. What did you tell them about Big Horn Coal's
2 interests?

3 A. I did not tell them anything about the interest
4 of Big Horn Coal.

5 Q. Did you instruct them to provide any specific
6 opinions?

7 A. I did not.

8 Q. Did you ask them to reach any particular
9 conclusions?

10 A. No.

11 Q. What did they provide you?

12 A. Based on their review, they provided me comments
13 related to their areas of expertise on what they felt was
14 deficiency in the mine plan application.

15 Q. And how did you use what they provided in
16 preparing the January 25th letter?

17 A. So I incorporated those comments into the
18 January 25th letter and submitted it to the DEQ.

19 Q. You mentioned that you solicited Mr. Jason
20 Todd's input on the mine permit application. Did I
21 understand that correctly?

22 A. I did, yes.

23 Q. And that Mr. Jason Todd work for Millcreek?

24 A. He worked for Millcreek Engineering, yes.

25 Q. And you probably heard in discussion at the

1 beginning of this hearing objections to this objection
2 letter on the basis that Mr. Todd was not going to be
3 available at hearing. Did you hear those comments?

4 A. I did, yes.

5 Q. And why isn't Mr. Jason Todd available for this
6 hearing?

7 A. He informed us shortly after this letter was
8 submitted that he was no longer going to be working for
9 Millcreek Engineering by the date of May 1st, and that he
10 would not be available to testify to these comments after
11 that date.

12 Q. When you asked Mr. Gerlach from Aqua Terra to
13 review Brook Mine's application, did you know that he had
14 previously done work for Brook Mine?

15 A. I did not.

16 Q. When did you first learn of Mr. Gerlach's prior
17 contract with Brook Mine?

18 A. After the January 25th letter was submitted to
19 the DEQ, and we learned we were not having an informal
20 conference with the director of the DEQ, that we were
21 going to prepare for a contested case hearing in front of
22 this EQC council did I find out that Mr. Gerlach had
23 previously worked for the Brook Mine.

24 Q. And at that time, did you consider whether
25 Mr. Gerlach should testify at this hearing?

1 A. I did, yes.

2 Q. And what did you determine?

3 A. I left that up to Mr. Gerlach's discretion and
4 his overall decision whether he felt comfortable
5 testifying in this proceeding.

6 Q. Does Big Horn Coal want to prevent Brook from
7 mining coal in Sheridan County?

8 A. No.

9 Q. In fact, did Ramaco and Big Horn once enter into
10 an exploration agreement?

11 A. We did. From July 19, 2012 through July 19,
12 2014, Big Horn Coal Company had an exploration -- let me
13 back up. AE Coal, LLC had an exploration agreement with
14 Ramaco, LLC to conduct exploration activities, as well as
15 to collect necessary baseline data for permitting a
16 surface coal mine in this area.

17 MS. BOOMGAARDEN: And if it is okay with
18 the council, just for purposes of being efficient, we'll
19 sometimes refer to Ramaco or Brook synonymously. And the
20 difference is the date these different things occurred and
21 who was acting at that time, whether it was Ramaco and then
22 later Brook, or whether it was AE Coal, Ambre Energy,
23 Lighthouse or Big Horn Coal. And if we could refer to
24 those synonymously so we don't have to get tripped up on
25 necessarily which name we're using, if that's acceptable.

1 Q. (BY MS. BOOMGAARDEN) Mr. Sweeney, you said that
2 that agreement was ended in July -- on July 19th of 2014.
3 What happened at that time? Did the agreement -- did Big
4 Horn Coal terminate the agreement?

5 A. It did not. It just lapsed. It was a two-year
6 agreement and it was not renewed.

7 Q. And did Ramaco offer Big Horn any explanation as
8 to why they let that agreement lapse?

9 A. No.

10 Q. Did you hear Mr. Barron testify both yesterday
11 and today that Big Horn denied Ramaco access to gather
12 data in the TR-1 area?

13 A. I did.

14 Q. Was that statement accurate?

15 A. That statement was not accurate.

16 Q. Did Brook ask permission to enter Big Horn lands
17 to drill after the exploration agreement lapsed?

18 A. No.

19 Q. Are you familiar with the incident that
20 Mr. Barron mentioned where the sheriff, according to
21 Mr. Barron, escorted Brook off Big Horn's property?

22 A. Yes, I was aware of that incident.

23 Q. And do you know when that occurred?

24 A. That occurred February 20, 2015.

25 Q. And were you present on the property during that

1 incident?

2 A. I was not. I was in Salt Lake City, Utah.

3 Q. And so how did you come to learn about the
4 incident?

5 A. A coworker from the Decker mine had gone down to
6 Big Horn to run his dogs on the evening of the 19th of
7 February. And he emailed me the next morning to inform me
8 that there was a drill rig and a water truck parked within
9 the Big Horn property gates and the truck had a name on it
10 by the name of Pronghorn Drilling.

11 Q. And had Pronghorn Drilling requested permission
12 for you -- from you or anyone at Big Horn prior to setting
13 up their rig?

14 A. No, they did not.

15 Q. Had Ramaco requested permission from you or
16 anyone at Big Horn to have Pronghorn drill on your
17 property?

18 A. No, they did not.

19 Q. So how did you learn -- how did Big Horn learn
20 that Pronghorn was one of Ramaco's contractors?

21 A. We had an employee -- after I learned about --
22 the morning of the 20th I learned about the drill rig and
23 water truck being on the property, I had a representative
24 from the Decker mine, his name is Mr. Russ Noble. He's a
25 maintenance supervisor for the Decker mine. I had him go

1 down to the mine site to check it out, to verify that the
2 truck and drill rig were still at the premise -- on the
3 premises and had him contact the sheriff's office to
4 escort them off the property.

5 Q. Are you aware of a sworn affidavit that
6 Mr. Noble prepared and that was filed in state district
7 court in Sheridan County reciting the events that occurred
8 on February 20th?

9 A. There was an incident that occurred while
10 escorting the drill rig off the report.

11 Q. Excuse me, Mr. Sweeney. My question is are you
12 aware of an affidavit that Mr. Noble prepared, a sworn
13 affidavit?

14 A. Yes. Sorry. I am aware of the affidavit.

15 Q. Thank you.

16 I'm going to ask Mr. Gregersen to bring that
17 affidavit up on the screen and ask Mr. Sweeney if he can
18 please take a look at that and identify whether that is
19 the affidavit, as Mr. Noble's supervisor, that he has
20 knowledge of.

21 A. Yes. Yes, the affidavit of Russ Noble.

22 Q. Can you please state the date that's on that
23 affidavit.

24 A. February 20, 2015.

25 Q. Okay. And is it your understanding that this

1 sworn affidavit recites the facts as Mr. Noble experienced
2 them on Big Horn's property on February 20th?

3 A. That is correct.

4 CHAIRMAN BAGLEY: Excuse me. Is this an
5 exhibit?

6 MS. BOOMGAARDEN: Mr. Chairman, thank you.

7 This is being offered as rebuttal evidence to
8 Mr. Barron's testimony that Big Horn Coal wrongly denied --
9 excuse me, that Brook wrongly denied access to Big Horn
10 Coal, and that had Big Horn -- had -- Big Horn had Brook
11 escorted off by the sheriff. That left a false inference,
12 and Mr. Sweeney has personal knowledge. And we also have
13 the sworn affidavit of Mr. Noble, since Mr. Sweeney was not
14 present on site to give the council a more full explanation
15 of the events that occurred that will illustrate that Brook
16 was on Big Horn's property without any permission, indeed
17 and in trespass, and it was not a denial of access under a
18 request for permission.

19 MR. POPE: Dr. Bagley, may I have an
20 opportunity to respond to that?

21 CHAIRMAN BAGLEY: Yes.

22 MR. POPE: The issue is not whether this
23 was a trespass or not. What that will inevitably lead us
24 down to is a discussion of the 1954 Deed and the rights
25 under that deed, which this council has already heard as

1 part of the order in lieu of consent procedures.

2 The testimony by Mr. Barron was simply a factual
3 issue of whether or not they were escorted off the
4 property. There does not appear to be a dispute about
5 that, and, therefore, there is no need to rebut that.

6 MS. BOOMGAARDEN: Mr. --

7 MR. POPE: There was no intent ascribed one
8 way or the other by Mr. Barron as to why it happened. It's
9 just a question of did it happen.

10 MS. BOOMGAARDEN: Mr. Chairman, if I could,
11 please, because Mr. Pope just mischaracterized Mr. Barron's
12 testimony. Mr. Barron could not have been more clear at
13 the end of his testimony today that Big Horn denied access
14 and that it was disingenuous for Big Horn to assert that
15 Brook did not have the information, the data necessary in
16 the TR-1 area, when, in fact, as Mr. Barron asserted, Big
17 Horn denied Brook access. That is not the case. There was
18 never a request for access for that purpose, and these
19 facts would illustrate and rebut -- directly rebut
20 Mr. Barron's testimony.

21 CHAIRMAN BAGLEY: Okay. So this was not an
22 exhibit. It's a rebuttal. And you're -- and I -- I -- I
23 understand what you're trying to do. So let's -- but let's
24 go ahead and tidy this up. I definitely do not want to
25 talk about 1954 Deed. This is just some additional facts

1 related to that incidence. So we'll go ahead and share
2 those.

3 MS. BOOMGAARDEN: Thank you, Mr. Chairman.
4 And we do not want to discuss a deed that has continued to
5 be disputed in its interpretation in front of this council
6 either.

7 Q. (BY MS. BOOMGAARDEN) Mr. Sweeney, if you'd
8 please take a look at that affidavit. And we want to go
9 through this quickly. We've already explained Mr. Noble's
10 position.

11 If you could look, please, at paragraph 5. And
12 could you read that quickly for the council.

13 A. "At 9 a.m., Friday" --

14 THE REPORTER: Not too quickly, though.

15 A. Sorry. "At 9 a.m., Friday, February 20, 2015, I
16 contacted the Sheridan County Sheriff's Office on behalf
17 of Ambre, and spoke to Deputy Sanders, the purpose of
18 identifying the individuals that had entered onto the
19 property and for assistance in removing the individuals
20 and their drilling equipment. I was instructed by Deputy
21 Sanders to meet with deed ownership documents at 11 a.m.
22 at the Big Horn Coal property."

23 Q. (BY MS. BOOMGAARDEN) And paragraph 6, did
24 Mr. Noble identify the individuals who entered the Big
25 Horn property as Pronghorn Drilling?

1 A. That is correct.

2 Q. And in paragraph 7, could you please read that?

3 A. "There was no prior notice or agreement to allow
4 Pronghorn Drilling to enter onto the Big Horn Coal
5 property."

6 Q. And the affidavit goes on to explain how
7 Mr. Noble met the sheriff's deputies there and
8 representatives of Pronghorn Drilling in paragraph 8 for
9 purposes of overseeing the removal of Pronghorn's property
10 and personnel; is that correct?

11 A. That is correct.

12 Q. And in paragraph 10, does it say the
13 representatives of Pronghorn Drilling were cordial,
14 removed the property without incident and represented that
15 they had been directed to place the drilling equipment
16 there by Western Water and Ramaco Wyoming Coal.

17 A. That is correct.

18 Q. And in paragraph 11, could you please read that
19 for the council.

20 A. Shortly after Pronghorn Drilling had begun
21 removing their equipment, a representative of Western
22 Water, Jeff Barron, and a representative from Ramaco -- of
23 Ramaco, Mr. Niles Veal arrived at the Big Horn property.

24 Q. I believe the copy says Jeff Barro. Do you
25 believe that just to be a typographical error?

1 A. That's correct.

2 Q. And just for purposes of efficiency, can you
3 just please summarize why Mr. Noble felt that it was
4 necessary to prepare this affidavit? The nature of the
5 encounter that occurred once Mr. Barron and Mr. Veal
6 arrived at the site?

7 A. So if you look at paragraph Item Number 15, that
8 gives you a very good, exact description as to what
9 happened, that there were some altercations between
10 Mr. Veal and Mr. Noble and Mr. Noble felt threatened as a
11 result of this altercation.

12 Q. And then paragraph 18, could you please
13 summarize that representation of Mr. Noble?

14 A. So after Mr. Noble discussed with the sheriff,
15 he too felt that was a direct threat to Mr. Noble.

16 Q. Thank you.

17 After the trespass incident, did Ramaco then
18 come back to Big Horn and ask for permission to access the
19 TR-1 area to drill?

20 A. They did not, no.

21 Q. When did you next hear from Ramaco, then,
22 following the trespass incident?

23 A. The next time we heard from Ramaco was around
24 November 2015, when we were summoned to court.

25 Q. Okay. And what's your understanding of what

1 Ramaco was asking from the court?

2 A. It was Sheridan County court, and Ramaco was
3 asking for their rights underneath the 1954 Deed.

4 Q. And was that lawsuit pending during the order in
5 lieu of consent proceedings?

6 A. That is correct.

7 Q. And did Ramaco subsequently dismiss that suit
8 after these permit objection proceedings began?

9 A. They did.

10 Q. How have the coal companies you've worked with
11 engaged with landowners?

12 A. The landowners are typically very important part
13 of the process. And for coal mining, it is our duty, as a
14 coal -- as an industry, to deal with them with the utmost
15 respect and at the very beginning of the process.

16 Q. Do you wait to be invited to a meeting organized
17 by the landowners?

18 A. No.

19 Q. Has Big Horn's experience with Ramaco given you
20 a new perspective on the importance of early and
21 continuing collaboration with landowners?

22 MR. POPE: Objection. Relevance.

23 MS. BOOMGAARDEN: I'll move on.

24 MR. POPE: We're here about the statutes
25 and regulations, not meetings.

1 MS. BOOMGAARDEN: I'll move on,
2 Mr. Chairman.

3 CHAIRMAN BAGLEY: Thank you.

4 Q. (BY MS. BOOMGAARDEN) Mr. Sweeney, what does Big
5 Horn want the council to do at the conclusion of this
6 hearing?

7 A. One of two things. Number one, most -- I guess
8 top priority, require that the DEQ instructs the Brook
9 Mine to go back and look at the necessary baseline data
10 and perform analysis of that baseline data to -- prior to
11 any written findings of the permit being technically
12 adequate and approve it.

13 Number two, if the DEQ is requested to move
14 forward with the permit, Big Horn requests that they
15 consider conditions set forth by Big Horn to be placed on
16 the permit.

17 Q. Have you given any thought to what specific
18 permit conditions Big Horn thinks would be appropriate
19 under these circumstances?

20 A. I have, yes.

21 Q. Could you please turn to what's been marked as
22 Big Horn Coal Exhibit 5. And does this exhibit represent
23 the permit conditions that you are requesting that this
24 council consider?

25 A. It is, yes.

1 Q. Let's look first at -- we're going to look at
2 pages 1 and 2. Page 1 is up on the screen right now. Is
3 that -- the first bullet with the series of subbullets
4 that continue on to the next page, is that a list of what
5 you're requesting as pre-excavation or pre-mining data
6 requirements?

7 A. It is, yes.

8 Q. Let's go through those. We're not going to
9 belabor them, but let's go through them just to make sure
10 the council has a clear idea, particularly if they'd like
11 to ask questions later of what conditions you've
12 identified so if you would just please go through those
13 individually and discuss why Big Horn believes that these
14 conditions are necessary and appropriate.

15 A. So I will go through them up front. I'd just
16 like to say that, as you heard in prior testimony this
17 week, no permit conditions have been issued on the permit
18 to date. So we felt it was necessary to provide these
19 conditions.

20 Starting with number 1, Brook has obtained
21 additional overburden samples and conducted strength tests
22 in consultation with the approval of results by the DEQ.

23 Q. Maybe slow down just a little bit, Mr. Sweeney.
24 Thank you.

25 A. DEQ has reviewed and accepted a groundwater and

1 surface water impact analysis during mining and
2 post-mining based on specific -- site-specific textural
3 and hydrologic data.

4 The hydrologic control plan is revised to
5 include water treatment facilities approved by DEQ.

6 Brook has geographically identified and
7 individually quantified all water sources to be used by
8 the mine. Groundwater sources shall also be identified by
9 their geologic sources.

10 Brook Mine has corrected to DEQ's satisfaction
11 the design error in Sedimentation Pond SP-8.

12 Brook installs seismic monitoring to ensure
13 proper blasting controls for the protection of the Big
14 Horn infrastructure, improvements and tenants.

15 Q. And let's go over -- go ahead and go on to the
16 second page because these are all related.

17 A. TR-1 trench may not remain open at the
18 conclusion of mining of the TR-1 area for the use -- for
19 use as a water source for subsequent mining operations on
20 adjacent lands.

21 Prior to the commencement of mining operations,
22 DEQ must approve a final report submitted by Brook Mine
23 that provides map locations, descriptions, photographs and
24 any existing evidence of underground coal fires within and
25 500 feet adjacent to the areas of proposed highwall

1 mining.

2 Prior to commencement of mining operations,
3 Brook must submit and DEQ must approve additional
4 downstream surface and groundwater monitoring locations
5 for groundwater in the Tongue River alluvium adjacent to
6 TR-1, within existing backfill of Pits 1 and 2 directly
7 east of TR-1, and for surface water monitoring on the
8 Tongue River north of TR-1 in order to adequately monitor
9 the off-site hydrologic impacts from mining trench TR-1.

10 Q. Mr. Sweeney, again, just to confirm, with regard
11 to any of those that talk about data collection related to
12 the hydrology, did you formulate these requested permit
13 conditions based on the analysis that Mr. Gerlach provided
14 you?

15 A. Yes. He assisted me in preparing these permit
16 conditions.

17 Q. And if I could have you turn back to page 1 of
18 Exhibit 5. I want to touch base briefly on the last
19 bullet there, with regard to the seismic monitoring to
20 ensure proper blasting controls for protection.

21 A. Yes. Something I put in there. And you may
22 have heard over the last few days about pre-blast surveys.
23 This is Big Horn wanting to have a pre-blast survey given
24 the close proximity of its shop and infrastructure to the
25 TR-1 trench.

1 Q. And so do you have safety concerns if that
2 monitoring isn't required?

3 A. Yes, there are active tenants in that shop area,
4 and they need to have maintained access through the area
5 to get to that shop facility.

6 Q. And is it your opinion that if that monitoring
7 were provided, it would provide additional assurance that
8 there wouldn't be interference with Big Horn Coal's
9 business operations in that area?

10 A. That is correct.

11 Q. And did you hear Mr. Barron testify this morning
12 that seismic monitoring like this could be done?

13 A. I did.

14 Q. And that he would defer to the council's
15 discretion if they chose to impose such a condition?

16 A. That is correct.

17 Q. And did you understand from Mr. Kristiansen's
18 testimony that DEQ has already agreed that additional
19 overburden sampling must be conducted prior to mining in
20 the TR-1 area?

21 A. I did.

22 Q. So why do you believe it's still important to --
23 for the council to impose a permit condition?

24 A. Again, back to Mr. Kristiansen's testimony. No
25 permit conditions have actually been placed on the permit

1 at this time.

2 Q. And in your experience, would a company actively
3 engaged in the business of mining typically defer this
4 type of baseline study until immediately before operations
5 began?

6 A. No. The data necessary for these baseline
7 studies is very important for the area. Very important
8 part of this permit application, seeing as this is the
9 trench cut that is going to be the initial area of mining
10 in this proposed plan.

11 Q. Did you understand from Mr. Kunze's testimony
12 that DEQ has already agreed to add and change the location
13 of certain surface water monitoring locations?

14 A. I did, yes.

15 Q. And did DEQ's proposed changes and additions
16 adequately address Big Horn's concerns?

17 A. Not related to that comment. Again, that has
18 the surface water and groundwater comments wrapped into
19 one -- one comment. If you could go back to one of the
20 previous slides. That bottom one there has the one, two
21 and three. After Mr. Kunze's testimony, it does sound
22 like they would like to have monitoring stations for
23 surface water closer to the operations, which I do agree
24 with, but there was no discussion of requiring of any
25 additional monitoring wells in the backfill spoils in Pits

1 1 and 2. And also, again, back to there is no current
2 permit conditions for this particular comment.

3 Q. And just for clarification for the record, when
4 you asked to return to a different slide and pointed to a
5 condition, was that the third bullet on Big Horn Coal
6 Exhibit 5, page 2?

7 A. Yes, it was.

8 Q. Thank you.

9 Let's have you turn to page 3 of Big Horn Coal
10 Exhibit 5. Can you please, not too quickly, read the
11 first bullet and subbullet on page 3.

12 A. No permit shall issue or mine operation commence
13 until Brook's mine plan MP.22 and reclamation plan RP.12
14 are amended to accurately reflect the following.

15 There are no operational, surface use, or
16 overlapping permit boundary agreements between Brook Mine
17 and Big Horn Coal.

18 Big Horn maintains a reclamation performance
19 bond which is adequate to reclaim Big Horn's facilities
20 and all disturbance associated with Big Horn's operations,
21 within the plus or minus 25 acres, within Big Horn's
22 permit area.

23 Big Horn should not -- shall not be responsible
24 for reclamation of any disturbance unrelated to Big Horn
25 operations and facilities, specifically including, but not

1 limited, to Brook Mine disturbance within the 25 acres
2 subject to Big Horn's reclamation performance bond.

3 Brook Mine shall maintain a reclamation
4 performance bond which is adequate to reclaim all
5 disturbance associated with Brook Mine operations within
6 Brook Mine's permit area.

7 Q. Thank you.

8 Why did you believe that this condition is
9 necessary to request?

10 A. One, there are no operational agreements inside
11 the adjudication file between Big Horn and Brook Mine, as
12 well as there's not enough language in mine plan to really
13 understand which party has what reclamation obligations
14 under their individual permits.

15 Q. On that, Mr. Sweeney, could you please turn to
16 Big Horn Coal Exhibit 7. This is a two-page exhibit. And
17 I apologize, we reproduced the pages in opposite order, so
18 I'm going to ask you first to please turn to page 2 of Big
19 Horn Coal 7. And I'd like you to focus on the Section
20 MP.22. Do you recognize that as the same language from
21 Brook Mine's permit application that Mr. Kristiansen
22 referred to as covering the dual permitted areas?

23 A. Yes, it is.

24 Q. And does that paragraph identify that portions
25 of Big Horn Mine's permit boundary are within the Brook

1 Mine's permit boundary?

2 A. It is, yes.

3 Q. And that's accurate, is it not?

4 A. That is accurate.

5 Q. And can you please read the last sentence that's
6 highlighted there.

7 A. Agreement between the permittees are located in
8 the adjudication file.

9 Q. And you just testified a minute ago, I believe,
10 that there is no overlapping permit boundary agreement or
11 use agreement between Big Horn Coal and Brook Mine; is
12 that correct?

13 A. That is correct.

14 Q. So that statement's inaccurate?

15 A. That is inaccurate.

16 Q. Okay. If I could have you now turn to page 1 of
17 Big Horn Coal 7. What is -- what is the purpose of RP.12?

18 A. Discusses the reclamation and bonding of dual
19 permitted areas and license to mine.

20 Q. And if you can please look at the second
21 paragraph, the highlighted sentence that begins "Once"
22 could you please read that?

23 A. "Once a second party enters an area bonding
24 responsibility on all lands they plan to disturb during
25 the appropriate bonding period will be transferred. The

1 last party to disturb an area will have final reclamation
2 responsibility on the disturbed dual permitted lands.

3 Q. Did you hear Mr. Kristiansen testify that each
4 permit area is to be treated as a stand-alone unit and
5 that the parties are treated individually for reclamation
6 purposes?

7 A. I did, yes.

8 Q. Is that how you read the language in this second
9 paragraph of RP.12?

10 A. No, the -- the way I read that language is that
11 once a second party comes in and disturbs an area, then
12 the liability of the first party will be transferred to
13 the second party.

14 Q. Did anyone from Brook Mine or DEQ ever discuss
15 with you or anyone at Big Horn a transfer of bonding
16 responsibility or Big Horn Coal's responsibility under
17 this language in Brook's mine permit?

18 A. No.

19 Q. I'd like you to turn, please, to Big Horn Coal
20 Exhibit 6. Can you please identify -- there are four
21 pages. They reflect two different documents. Can you
22 please identify what these are for the council.

23 A. Yes, I can. So Big Horn Exhibit 6, pages 001,
24 002, are in relation to the Cordero Rojo Mine Permit
25 Number 237. Big Horn Exhibit 6, pages number 003, 004 and

1 005 are in relation to the Buckskin Coal Mine Permit
2 Number 500.

3 Q. And where and how did you obtain these
4 documents?

5 A. We obtained these documents -- and by "we" I
6 mean I asked Aqua Terra to go out and search the permit
7 documents that have discussions of dual permitted areas,
8 and they found them within the public realm of the DEQ.

9 Q. And why did you request Aqua Terra go obtain
10 these documents?

11 A. They were familiar with existing mines that had
12 overlapping permit boundaries and agreements between
13 parties.

14 Q. And let me back up. You asked that they go
15 obtain these. And I should point out, as Mr. Gregersen
16 has showing, are these -- each of these documents file
17 stamped to represent that they were obtained from the
18 DEQ's public files and the date in which DEQ received
19 these documents?

20 A. They are. For example, this Big Horn Exhibit 6,
21 page 001, was received from the DEQ Sheridan office, and
22 it was approved and added to Cordero Rojo Mine per the
23 March 26, 2007.

24 Q. And can you represent to the council that each
25 one of these pages -- again, I'm trying to be efficient --

1 is also stamped as having been received by DEQ in District
2 3?

3 A. They have. They have all been stamped and
4 approved by DEQ.

5 Q. Thank you.

6 If we can go back up to page 1, then. And I
7 don't want you to read that highlighted language. The
8 council's able to read that for themselves. But would you
9 say that the highlighted language here on page 1 is
10 representative of the language you found in both the
11 Cordero Rojo mine permit and the Buckskin mine permit --
12 mine permit applications?

13 A. They are representative, yes.

14 Q. And what did you conclude from the language
15 that's highlighted there?

16 A. There are private overstrip agreements between
17 the parties. For example, on this page 1, Cordero Rojo
18 Mine and Nelson Brothers Mining Services, two overlap the
19 permitting boundaries on top of one area. So they had a
20 mutual overstrip agreement between the parties that
21 specifically spells out the reclamation obligations
22 between the parties.

23 Q. And I understood you correctly, didn't I, a few
24 minutes ago that there is no such operating agreement at
25 outlining the use of overlapping permit areas between

1 Big Horn and Brook Mine?

2 A. That is correct.

3 Q. Did Brook Mine ever offer to negotiate such an
4 agreement with Big Horn?

5 A. They did not.

6 Q. And you've testified that Big Horn has tenants
7 and customers that need safe access to the areas that you
8 outlined on the map?

9 MR. POPE: Objection, Dr. Bagley. There's
10 no relevance to this. Although they have identified it
11 occurs in other permits, they have not identified if it's a
12 permit requirement under Wyoming statutes and regulations
13 that there be these agreements. Just talking about the
14 permit application and its requirements. There's no
15 relevance. And they're asking you to draw an inference
16 that they can't connect to this situation.

17 MS. BOOMGAARDEN: Thank you, Dr. Bagley.

18 I believe that the subject of appropriate permit
19 conditions and this council's willingness to consider such
20 conditions has been made acutely relevant in the
21 proceedings the last few days. Mr. Sweeney is testifying
22 as to he wanted to look at what is in other permit
23 applications to get an idea of what would be appropriate to
24 request and the condition that he's presented to the
25 council today, and that's the extent of the testimony that

1 he's providing on these.

2 CHAIRMAN BAGLEY: Right. So we've seen
3 examples of what's in other permits, and he's told us that
4 he has not found that in the current permit, but -- and so,
5 I mean, it's -- it's a good -- to provide those examples,
6 but --

7 MS. BOOMGAARDEN: Excuse me, Dr. Bagley.

8 My questioning with regard to how Big Horn is
9 using the facilities as additional support for the validity
10 of the permit condition that Big Horn Coal has requested
11 today. And we're nearly done with this.

12 CHAIRMAN BAGLEY: Go ahead.

13 MS. BOOMGAARDEN: Thank you.

14 Q. (BY MS. BOOMGAARDEN) Mr. Sweeney, I believe the
15 question was does Big Horn Coal have tenants and customers
16 that need safe access to the facilities, as you describe
17 them in our exhibit?

18 A. We do. There's also requirements for other
19 access to the property for wildlife monitoring, hydrology
20 monitoring, as you -- as was stated access for tenants to
21 and from the shop facility.

22 Q. And so is it for the safe access and use by Big
23 Horn Coal for obligations within its mine permit boundary
24 and its tenants and customers that you requested the
25 permit condition?

1 A. That is correct.

2 Q. Thank you.

3 If we could please go back to Big Horn Coal
4 Exhibit 5, page 3. There's one more permit condition
5 you're requesting. Could you please read that for the
6 council?

7 A. The last bullet point, no permit shall issue or
8 mine operations commence until Brook Mining Company has
9 executed a bond pursuant to Wyoming Statute 35-11-416(a)
10 for the use and benefit of Big Horn Coal in an amount
11 sufficient to pay for all statutorily coverage -- covered
12 surface damages.

13 Q. I'm going to go ask Mr. Gregersen to please pull
14 up the statute, 35-11-416(a).

15 Can you identify that as the statute that you've
16 referenced in your final requested permit condition?

17 A. It is, yes.

18 Q. And is it your understanding that this statute
19 requires Brook to post a bond prior to the permit being
20 issued under the express language of the statute.

21 MR. POPE: Objection, Dr. Bagley.

22 Ms. Boomgaarden is asking him to interpret what the statute
23 says. Statute says what it says. The council can read
24 that for itself.

25 Q. (BY MS. BOOMGAARDEN) Mr. Sweeney, is it --

1 MS. BOOMGAARDEN: Wait.

2 Q. (BY MS. BOOMGAARDEN) -- because of --

3 MS. BOOMGAARDEN: I'll move on to another
4 question --

5 CHAIRMAN BAGLEY: Okay. Thank you.

6 MS. BOOMGAARDEN: -- Dr. Bagley.

7 Q. (BY MS. BOOMGAARDEN) Mr. Sweeney, is it your --
8 iis it because of your rights under this statute that
9 you're requesting the permit condition?

10 A. I am.

11 Q. Why do you believe it's necessary to ask this
12 council to request this as a permit condition at this
13 time?

14 A. Because no permit shall be approved until a
15 surface owner protection bond is in place.

16 Q. And is there anything in the permit application
17 at this time providing for the commitment required by this
18 statute?

19 A. There is not.

20 Q. Okay. Has Brook Mine offered to negotiate a
21 surface damage agreement with Big Horn Coal?

22 MR. POPE: Objection. There's no relevance
23 to negotiations between Big Horn and Brook on a surface
24 damage agreement. Council went through this exact same
25 issue in the order in lieu of consent proceeding.

1 MS. BOOMGAARDEN: Dr. Bagley, if I could,
2 please. If the council would choose to read this statute
3 and interpret it for themselves, I believe this statute
4 makes clear that this statute only applies if there is no
5 surface damage agreement executed. I'm just trying to
6 establish in Mr. Sweeney's testimony that, in fact, Big
7 Horn Coal is eligible for the protection under this
8 statute.

9 CHAIRMAN BAGLEY: So it would seem to me if
10 there is no agreement, that's a fact that can be stated.
11 But whether the parties have negotiated towards one or not,
12 I really leave that to the parties to decide. So we can
13 just -- you know, is there an agreement or is there not is
14 definitely relevant.

15 MS. BOOMGAARDEN: Thank you. I'll restate.

16 Q. (BY MS. BOOMGAARDEN) Mr. Sweeney, is there a
17 surface use agreement between Big Horn Coal and Brook
18 Mine?

19 A. No.

20 Q. Has Big Horn entered into any kind of agreement
21 or executed any document which would expressly waive its
22 rights under this statute?

23 A. It has not.

24 Q. Thank you.

25 Did you understand Mr. Kristiansen to testify

1 that there will still be a proceeding to determine the
2 amount of the surface owner protection bond?

3 A. I did.

4 Q. And did you understand Mr. Kristiansen to
5 represent that Big Horn will be able to participate in
6 that proceeding?

7 A. Yes.

8 MS. BOOMGAARDEN: One moment, please.

9 I have no further questions at this time. Thank
10 you.

11 CHAIRMAN BAGLEY: All right. Thank you,
12 Ms. Boomgaarden.

13 Ms. Anderson.

14 MS. ANDERSON: Thank you, Dr. Bagley.

15 CROSS-EXAMINATION

16 Q. (BY MS. ANDERSON) I have just one question for
17 you, Mr. Sweeney. I appreciate what you said about
18 landowner engagement, as somebody who works regularly with
19 landowners. If a landowner would bring you a set of
20 conditions like you just talked about, would you be
21 willing to think of them and have they included in permit
22 of yours?

23 A. I would have addressed them with landowner, yes.

24 MS. ANDERSON: Okay. Thank you.

25 CHAIRMAN BAGLEY: Mr. Gilbertz?

1 MR. GILBERTZ: Good afternoon, Mr. Sweeney.

2 I have no questions.

3 THE WITNESS: Thank you.

4 CHAIRMAN BAGLEY: Mr. Pope.

5 MR. POPE: Can we get the technology set
6 up, please?

7 CROSS-EXAMINATION

8 Q. (BY MR. POPE) Good afternoon, Mr. Sweeney.

9 A. Good afternoon.

10 Q. You stated early in your direct that it is not
11 Big Horn Coal's intention to stop Brook from mining in
12 this area. But Big Horn Coal refused to consent to
13 Brook's mine and reclamation plan, correct?

14 A. That is correct.

15 Q. As a result of Big Horn Coal's refusal to
16 consent, this council had to conduct an order in lieu of
17 consent proceeding, correct?

18 A. That is correct.

19 Q. You have -- excuse me. Big Horn Coal has also
20 filed an objection letter that states Brook, in its
21 opinion, should not get permit to mine coal, correct?

22 A. There are technical deficiencies that I believe
23 should be addressed in the permit before it is approved.

24 Q. So let me be specific. Big Horn Coal's
25 objection letter states that Brook's permit application,

1 as it exists now, should not be approved, correct?

2 A. That is correct.

3 Q. But it's true, Mr. Sweeney, that just a couple
4 years ago, Big Horn Coal said it would step aside and not
5 object to any of Brook's operations and sell all of its
6 assets to Brook if Brook was willing to pay it
7 approximately \$29 million, correct?

8 A. That was evaluation --

9 THE REPORTER: I'm sorry. I can't hear.

10 A. That was a valuation conducted a few years ago,
11 yes.

12 Q. (BY MR. POPE) Sorry, Mr. Sweeney. I need a
13 specific answer to my question. My question was a couple
14 years ago Big Horn Coal said that it would step aside, not
15 oppose Brook's operations, and sell all of its existing
16 assets if Brook paid approximately \$29 million, correct?

17 A. That was during times of settlement and
18 negotiations between Ramaco and AE Coal, and that was
19 said, yes.

20 Q. Thank you, Mr. Sweeney.

21 Just a quick clarification on Big Horn Coal's
22 structure. It's true that if Big Horn Coal needs money to
23 fund operations, maintenance or reclamation, for example,
24 it applies to Lighthouse Resources to receive that
25 funding, correct?

1 MS. BOOMGAARDEN: Objection, Mr. Chairman.

2 I have no earthly idea how this line of questioning with
3 regard to Big Horn Coal's finances is related to the
4 adequacy and completeness of Brook's mine permit.

5 MR. POPE: If I may, Dr. Bagley.

6 CHAIRMAN BAGLEY: Respond to that, please.

7 MR. POPE: Absolutely.

8 Mr. Gilbertz intimated in his cross-examination
9 of Mr. Woodring that the finance -- financial ability of a
10 company is relevant. Mr. Sweeney has discussed other
11 examples of how coal companies operate. Big Horn Coal
12 Company operates in a very similar way to Brook's
13 structure, where Brook has a parent company that has money
14 that finances its operations. The point here is that
15 Mr. Gilbertz' insinuation is untrue as it applies to coal
16 mining industry because it is a common practice.

17 MS. BOOMGAARDEN: Dr. Bagley, I'm afraid
18 this is outside the scope and continues to be irrelevant
19 because there is nothing at issue in this proceeding with
20 regard to Big Horn's operations.

21 CHAIRMAN BAGLEY: Yeah, I -- Big Horn's
22 ability to reclaim land is not -- is not part of this
23 proceedings. The concern you mentioned is not direct --
24 directly related to this witness either. So let's move on.

25 MR. POPE: Very well. Thank you,

1 Dr. Bagley.

2 Q. (BY MR. POPE) I'd like to talk really briefly
3 with you, Mr. Sweeney, about Big Horn Exhibit 6. Those
4 were the newly permitted dual permits for Cordero Rojo and
5 Buckskin, correct?

6 A. That is correct.

7 Q. Those dual permit commitments were revisions to
8 those mine permits, correct?

9 A. I would have to say yes, given the fact that it
10 occurred in 2007. I know Cordero Rojo has been operating
11 long before that.

12 Q. So those commitments were not in the initial
13 permit when those mines began operating, correct?

14 A. That is correct.

15 Q. Let's talk briefly about permit conditions. The
16 permit conditions you read through with the council, you
17 did not provide those in the objection letter Big Horn
18 Coal filed with DEQ, correct?

19 A. They were not part of the submittal in the
20 objection letter to the DEQ.

21 Q. They were also not part of Mr. Gerlach's expert
22 report submitted as discovery and as an exhibit in this
23 case, correct?

24 A. That is correct.

25 Q. One of those conditions was the need to collect

1 baseline data in the TR-1 area. If that becomes a permit
2 condition, is Big Horn Coal going to request that Brook
3 enter into some kind of surface or exploration agreement
4 to collect that data?

5 A. Yes.

6 Q. Apologies to Dr. Bagley. I need to briefly
7 visit about the 1954 Deed.

8 You talked about the drilling incident -- the
9 drilling rig incident that caused the removal of a
10 contractor from Big Horn Coal Company, correct?

11 A. I did, yes.

12 Q. You're aware that Brook is operating this area
13 under a 1954 Deed that grants it ownership of the coal in
14 this area, correct?

15 A. Yes, it is.

16 Q. And you're aware that deed comes with surface
17 use rights, correct?

18 A. Related to mining, yes.

19 Q. And one of those surface use rights is
20 the ability to use the surface as is necessary or
21 convenient --

22 MS. BOOMGAARDEN: Objection --

23 Q. (BY MR. POPE) -- to drill.

24 MS. BOOMGAARDEN: Objection, Dr. Bagley.

25 I'm sorry for interrupting, Mr. Pope. There was

1 a pause. I thought you were done.

2 My objection would be first that this line of
3 questioning isn't relevant. As has been discussed with
4 this council before, the 1954 Deed and the interpretation
5 of that deed is beyond the jurisdiction of this council to
6 consider or determine. That issue is on appeal in the
7 First Judicial District as the single issue appealed in
8 this council's order in lieu of consent ruling.

9 And furthermore, Mr. Pope is asking Mr. Sweeney
10 to draw legal conclusions that he's not qualified to draw.

11 MR. POPE: If I may, Dr. Bagley.

12 CHAIRMAN BAGLEY: Uh-huh.

13 MR. POPE: Ms. Boomgaarden, in response to
14 my objection about the trespass issue, stated that the
15 reasons for why it was a trespass were important. This is
16 a rebuttal to that because Brook was operating using its
17 rights under the 1954 Deed. I'm also not asking
18 Mr. Sweeney to interpret the deed. I'm simply asking him
19 if those words "that use of the surface as is necessary or
20 convenient to drill" are in the document.

21 CHAIRMAN BAGLEY: I -- yeah, it seems to me
22 that the issue I'm hearing is that there are folks who want
23 more testing done on land, and yet there seems to be an
24 unwillingness to allow that testing to be conducted.
25 That's what I'm hearing. You know, not to name names or

1 anything, but I'm hearing that there's this, well, we want
2 more testing, but, well, no, I don't necessarily want
3 people to come do the testing. And the issues whether
4 there's trespassing or ownership are not issues that this
5 council will decide. What we're interested to know is is
6 there a need for more testing or not, from a technical
7 standpoint, to protect health of the environment if such --
8 we -- we determine or the DEQ or someone determines, yes,
9 more testing is required, we will somehow have to figure
10 out how to get that testing done. But that's not something
11 this council will determine.

12 So, I mean, we've been through the 1954 Deed
13 before. We have -- our opinion on that has already been
14 recorded in the order in lieu of consent.

15 MR. POPE: Dr. Bagley, I think from your
16 answer there, the point has been made so I can go ahead and
17 move on.

18 Q. (BY MR. POPE) Mr. Sweeney, let's talk about the
19 surface uses you described at the Big Horn Coal property
20 as they relate to your objections in this case. You have
21 objected on the basis of safety issues related to those
22 existing structures and potential effects of blasting on
23 those structures, correct?

24 A. Yes.

25 Q. It's true, though, that Big Horn Coal is

1 required to reclaim both the shop and the spur, per your
2 reclamation plan on file with DEQ, correct?

3 A. Yes.

4 MS. BOOMGAARDEN: Objection, Dr. Bagley.
5 Again, Mr. Pope is going into a realm of testimony that was
6 widely covered in the order in lieu proceeding, which
7 proceeding was relevant to Big Horn Coal's operations and
8 remaining obligations. Big Horn Coal's reclamation
9 obligations, the timing of those obligations and anything
10 other than the fact of what Big Horn is legally entitled to
11 do and has present on its property right now is not
12 relevant to this proceeding.

13 MR. POPE: Dr. Bagley, Ms. Boomgaarden and
14 Mr. Sweeney discussed the use of the shop and the spur as
15 reasons as to why we have objected. We were allowed to
16 point out that the legal obligation that Big Horn has with
17 those structures is to destroy them.

18 MS. BOOMGAARDEN: Dr. Bagley, if I could.
19 The timing of that legal obligation is a matter between
20 Big Horn Coal and DEQ, and, as was established in the order
21 in lieu of consent proceedings, has not yet been
22 determined.

23 CHAIRMAN BAGLEY: Correct. You guys did
24 bring it up, which surprised me. But please go ahead and
25 ask the question. And we need to keep in mind, though,

1 that there are timing issues that may not be able to be
2 answered today.

3 MR. POPE: Understanding that. I thank
4 you, Dr. Bagley.

5 Q. (BY MR. POPE) Mr. Sweeney, my question is Big
6 Horn, per its reclamation plan, must still reclaim its
7 shop and spur, correct?

8 A. According to his bond calculation he had in the
9 reclamation plan, yes.

10 Q. There was some discussion in the objection
11 letter and in Mr. Gerlach's expert report about future
12 uses of Big Horn Coal's surface. As I understand it, from
13 your deposition, the few -- potential future uses of that
14 surface are still on the drawing board, correct?

15 A. Yes, they are.

16 Q. Let's talk for a moment about the work that Aqua
17 Terra, Mr. Gerlach's company, has done in this case. You
18 testified that you retained independent experts, correct?

19 A. I did.

20 Q. Aqua Terra, however, has done work for Big Horn
21 Coal Company for at least two decades, correct?

22 A. They have.

23 Q. And, in fact, Aqua Terra also did work for Brook
24 Mine in the early stages of preparing its permit
25 application, correct?

1 A. Per my discussion with Joe, that is correct.

2 Q. They also did drilling on Big Horn Coal surface
3 in 2013, didn't they?

4 A. I am unaware of them, meaning Aqua Terra, being
5 on-site in 2013 on the Big Horn property.

6 Q. Mr. Sweeney, you're aware that, as we just
7 talked about, Aqua Terra did work for Brook and for Big
8 Horn Coal. Mr. Gerlach has submitted an expert report to
9 this council opposing or suggesting that there should be
10 objections to Brook's permit application. You testified
11 at your deposition that if a company -- if you hired a
12 company to help you with a project, and that company later
13 on turned around and helped oppose that project, it's more
14 likely that you would not hire that company again,
15 correct?

16 A. That was a hypothetical that you presented at my
17 deposition.

18 Q. Is that a yes, Mr. Sweeney?

19 A. It was stated at my deposition, yes.

20 Q. And the reason you gave for why you would never
21 hire that company again is because it creates a loss of
22 trust and credibility, correct?

23 A. In my eyes, I did say that. Could have been
24 re-worded in the fact that it would depend on --

25 Q. Mr. Sweeney, let me interrupt you. My question

1 was -- was just calling for a yes or no. It's true that
2 the reason you gave at your deposition for why you would
3 not hire that company again is because it creates a loss
4 of trust and credibility, correct?

5 A. I did say that, yes.

6 Q. Mr. Sweeney, let's talk about your review of the
7 Brook permit application in preparing the objections for
8 Big Horn Coal. You did not review any statutes in
9 preparing the objection letter on behalf of Big Horn Coal,
10 correct?

11 A. That's why I had third-party experts do it.

12 Q. Mr. Sweeney, my question was you did not review
13 any statutes in preparing Big Horn Coal's objection
14 letter, correct?

15 A. I did not.

16 Q. You did not review any regulations in preparing
17 Big Horn Coal's objection letter, correct?

18 A. I did not.

19 Q. Even though there are subsidence-related
20 objections in Big Horn Coal's objection letter, you did
21 not review any subsidence regulations in preparing that
22 objection letter, correct?

23 A. The subsidence was handled by Mr. Todd. So, no,
24 I did not specifically handle or review the subsidence
25 rules and regulations.

1 Q. You also did not review any DEQ guidelines in
2 preparing Big Horn Coal's objection letter, correct?

3 A. The rules and regs and guidelines I did review
4 would have been in the discovery responses, as I discussed
5 in my deposition.

6 Q. Mr. Sweeney, a couple weeks ago you came to the
7 Holland & Hart office in Cheyenne for a deposition,
8 correct?

9 A. I did.

10 Q. And you sat down at a conference room with
11 myself and a court reporter, correct?

12 A. I did.

13 Q. And that court reporter's job was to take down
14 everything you said, correct?

15 A. Yes.

16 Q. But before she did that, she administered an
17 oath to you, didn't she?

18 A. Yes.

19 Q. And that oath was for you to tell the truth.

20 A. Yes.

21 Q. And you told the truth, didn't you?

22 A. I did.

23 Q. Mr. Sweeney, I've handed you a copy of your
24 deposition transcript. Would you please turn to page 79.

25 COUNCIL MEMBER LALLY: Excuse me. What

1 exhibit is this?

2 MR. POPE: It is not an exhibit,
3 Councilwoman Lally. This is his deposition transcript.
4 We're just using this for the purpose of impeaching his
5 testimony.

6 Q. (BY MR. POPE) Are you at page 79, Mr. Sweeney?

7 A. I am.

8 Q. We were just talking about your review of DEQ
9 guidelines. I'd like to direct your attention to line 7
10 on page 79. Please follow along with me as I read.
11 Question, "Did you review any DEQ guidelines in preparing
12 this objection letter?"

13 Answer, "No."

14 Did I read that correctly?

15 A. Yes, you did.

16 Q. In preparing your objection letter, you did not
17 speak with anyone at the Department of Environmental
18 Quality about Brook's permit application, correct?

19 A. Only time I spoke with DEQ was while filing the
20 letter. I called up Mr. Bj Kristiansen and asked who to
21 file this with, knowing that Mr. Wendtland had recused
22 himself.

23 Q. You also did not review any data about
24 historical underground coal fires in this area in
25 preparing Big Horn Coal's objection letter, correct?

1 A. I did not personally, no.

2 Q. You also, in preparing this objection letter,
3 did not know that Brook had submitted its sampling and
4 testing methodology to DEQ before it began gathering
5 baseline data, correct?

6 A. Correct.

7 Q. Let's talk about your thoughts on the Department
8 of Environmental Quality generally. It's your opinion
9 that generally DEQ's review of permit applications is
10 pretty strong, correct?

11 A. Yes.

12 Q. And you also believe that the DEQ employees in
13 District 3 do very good work, correct?

14 A. Yes.

15 Q. Let's go to your objections in the objection
16 letter for a moment. Your first objection has to do with
17 Standard Operating Procedure 2.1. You would agree with me
18 that DEQ Standard Operating Procedure 2.1 is an internal
19 DEQ policy, correct?

20 A. It is.

21 Q. And you don't know if any statute or regulation
22 requires DEQ to use Standard Operating Procedure 2.1 in
23 evaluating a permit application, correct?

24 A. That's correct.

25 Q. Now, Big Horn Coal has bonds in place for its

1 reclamation obligations, correct?

2 A. It does, yes.

3 Q. And when Big Horn Coal completes its
4 reclamation, DEQ presumably will release those bonds,
5 correct?

6 A. Yes.

7 Q. You heard Mr. Kristiansen testify that Brook's
8 bond, as it applies to the area around Big Horn Coal, will
9 cover all of Brook's disturbance, even if it occurs in the
10 overlapping portions of Big Horn Coal's permit boundary?

11 A. It will cover related disturbance to Brook Mine,
12 yes.

13 Q. Objection Number 1, which is on the screen, you
14 also object on the basis of the lack of indemnity language
15 in the permit, but you would agree with me that no statute
16 supports Big Horn's objection about indemnity, correct?

17 A. That's correct.

18 Q. Let's move to Objection Number 5 in the letter,
19 which is the pink polygon you discussed with
20 Ms. Boomgaarden on direct.

21 You have no statute or regulation on which you
22 rely for your objections related to the pink polygon,
23 correct?

24 A. That is correct.

25 Q. As we talked about in your deposition, you have

1 worked with other mines that have drawn polygons as part
2 of a mine permit, correct?

3 A. Yes.

4 Q. And you would agree that it is possible for a
5 mining operation not to disturb all of the area within a
6 disturbance polygon, correct?

7 A. Yes.

8 Q. But your objection in Number 5 assumes that
9 Brook will disturb all of the area within the pink
10 polygon, correct?

11 A. That is correct.

12 Q. Let's go to Objection Number 6. This
13 objection -- you don't need to blow it up -- discusses
14 roads. You are not aware of any specific statutes that
15 require county agreements as part of a permit application,
16 correct?

17 A. I do know the -- where I work --

18 THE REPORTER: The what?

19 THE WITNESS: The Black Butte Coal Mine
20 where I work does have a county review.

21 Q. (BY MR. POPE) Appreciating that, Mr. Sweeney.
22 My question, however, was you were not aware of any
23 specific statutes governing county agreements in a permit
24 application, correct?

25 A. Correct.

1 Q. Let's go to Objection Number 7. In this
2 objection, you suggest language for Brook's permit
3 application that is related to Taylor Quarry, correct?

4 A. Yes.

5 Q. The language you suggest, however, is not
6 required by Wyoming statute, correct?

7 A. Correct.

8 Q. Let's go to Objection Number 12. Objection
9 Number 12 has to do with topsoil replacement. As we
10 discussed a moment ago, your future uses of Big Horn Coal
11 surface are still on the drawing board. My question,
12 however, is you were at the order in lieu of consent
13 hearing when Mr. Barron testified that if needed, Brook
14 can accelerate topsoil replacement in the area around
15 TR-1, correct?

16 A. Yes.

17 Q. Mr. Sweeney, you discussed on direct the use of
18 Mr. Todd in preparing Big Horn Coal's objection letter,
19 the few questions about Mr. Todd's role in this case. You
20 are not qualified to be an expert witness on anything
21 related to the objections that Mr. Todd drafted, correct?

22 A. That is correct.

23 Q. Now, you -- you told me at your deposition that
24 Mr. Todd just reviewed Volume XI of Brook's permit
25 application, correct?

1 A. I don't recall specifically. I'd have to go
2 back to the deposition.

3 Q. Let's pick up your deposition transcript there.
4 If you would turn to page 64, please.

5 A. I'm there.

6 Q. And this is just for purposes of refreshing
7 what happened at your deposition. On line -- beginning on
8 line 15, there's a question that says "Do you know what
9 Millcreek considered the mine plan document?"

10 Your answer is, "Volume 11, mine plan." Did I
11 read that correctly?

12 A. That's what they considered their mine plan
13 document, yes.

14 Q. Thank you.

15 But you don't know if Mr. Todd reviewed either
16 Appendix D5 or Addendum D5, which may relate to some of
17 the objections you helped craft, correct?

18 A. I'm not aware. I don't know.

19 Q. And you don't know if Mr. Todd relied on Wyoming
20 statutes, Wyoming regulations or DEQ guidelines in forming
21 his opinions, correct?

22 A. I believe he would have submitted me those as
23 part of the discovery request he had.

24 Q. Mr. Sweeney, I understand that, but my question,
25 however, was you don't know if, in preparing his opinions,

1 Mr. Todd reviewed Wyoming statutes, Wyoming regulations or
2 DEQ guidelines, correct?

3 A. I don't know.

4 Q. You also don't know if Mr. Todd, in preparing
5 some of his water-based objections, reviewed Brook's
6 dewatering plan or watering control plan, correct?

7 A. I'm not aware. I don't know.

8 Q. Mr. Todd, in portions of the objection letter
9 that he drafted, discusses the cost per ton to move coal,
10 but you don't know where Mr. Todd obtained his information
11 about the cost per ton to get coal, correct?

12 A. He used industry averages based on his
13 experience in building models and mine plans. But I'm not
14 aware of where he pulled that information specifically,
15 no.

16 Q. Would you pick up your deposition transcript
17 again, Mr. Sweeney. Please turn to page 73.

18 A. There.

19 Q. I'd like to direct your attention to line 5.
20 Before I read this, again, for the council's benefit, you
21 promised to tell the truth at this deposition, correct?

22 A. Correct.

23 Q. Follow along with me on line 5. The question
24 is, "Do you know the basis on which Mr. Todd estimated the
25 8- to \$12-per-ton cost range?"

1 Answer, "I do not." Did I read that correctly?

2 A. You did.

3 Q. Mr. Todd also drafted in your objection letter
4 language that discusses Brook's use of proper analytical
5 data, but you do not know why Mr. Todd said Brook did not
6 use proper analytical data, correct?

7 A. I am not Mr. Todd, no.

8 Q. And for that opinion, you do not know if he
9 relied on a Wyoming statute or Wyoming regulation,
10 correct?

11 A. Correct.

12 Q. Mr. Sweeney, I'll close on this note. I think
13 you and I can at least agree on a basic proposition here.
14 If a permit application complies with all Wyoming statutes
15 and Wyoming regulations, that permit should issue,
16 correct?

17 A. Correct.

18 MR. POPE: I have no further questions.

19 CHAIRMAN BAGLEY: Thank you. Let us take a
20 10-minute break.

21 You have a question?

22 MR. LAROCK: Could DEQ cross the witness?

23 CHAIRMAN BAGLEY: You will, but I want to
24 take a break first.

25 MR. LAROCK: Sure thing. Thank you.

1 CHAIRMAN BAGLEY: Take a 10-minute break.

2 (Deposition proceedings recessed

3 2:18 p.m. to 2:31 p.m.)

4 CHAIRMAN BAGLEY: All right. We are back
5 in session.

6 Mr. LaRock, please.

7 MR. LAROCK: Sorry for asking earlier.

8 CROSS-EXAMINATION

9 Q. (BY MR. LAROCK) Hi, Mr. Sweeney.

10 A. Hello.

11 Q. So I just want to make sure I heard you
12 correctly. You said several times during your direct
13 testimony that no conditions had been placed on the permit
14 at this time; is that correct?

15 A. Yes. I said that.

16 Q. Does Brook have a permit yet?

17 A. No.

18 Q. Can there be conditions on a permit that doesn't
19 exist yet?

20 A. No.

21 Q. Okay. Just checking. Thank you.

22 Second line of questioning. Do you know if a
23 permit can authorize you to do something that would
24 convene a statute or a rule or a regulation?

25 A. No.

1 Q. Okay. Thank you. Check on that too.

2 All right. And so my last line of questioning
3 is about these proposed conditions. As council heard,
4 these proposed conditions were not submitted to DEQ with
5 the objection letter, so first time we got to look at them
6 was the contested case hearing. I have a few questions
7 about them, if you don't mind.

8 A. Yes.

9 Q. So, for example, let me just read out this
10 condition. One of your conditions was -- let me know if
11 I'm getting this wrong -- that the TR-1 trans excavation
12 and the highwall mining thereof shall not commence until
13 Brook has obtained additional overburden samples and
14 conducted strength tests in consultation with and the
15 approval of results by DEQ; is that correct?

16 A. That is correct.

17 Q. Okay. I'm going to throw something up on the
18 screen here and just ask you to read it for me.

19 MR. LAROCK: Is this speed fine?

20 THE REPORTER: Just a little slower.

21 Q. (BY MR. LAROCK) Mr. Sweeney, do you recognize
22 this?

23 A. I do. It is from Appendix D5.

24 Q. Can you read the highlighted section?

25 A. "Samples will be collected and strength testing

1 will be conducted on those samples in order to satisfy the
2 requirements of the MSHA ground control plan, which must
3 be approved prior to mining. The future testing results
4 and analysis in preparation of the MSHA ground control
5 plan will be provided to Wyoming DEQ/LQD."

6 Q. Is it your understanding that when that's
7 referring to samples, it's referring to overburden samples
8 and interburden samples?

9 A. Yes. In relation to site testing, yes.

10 Q. Thank you.

11 I've got a couple of other questions about your
12 proposed conditions, if you don't mind.

13 So you mentioned also in the first page of your
14 requested permit conditions that no excavation or highwall
15 mining shall commence until Brook Mine has corrected to
16 DEQ's satisfaction the design error in Sedimentation Pond
17 SP-8.

18 A. Yes, that is correct.

19 Q. What's the design error in Sedimentation Pond
20 SP-8?

21 A. I'm not an expert on designing sedimentation
22 ponds. I'm going to leave that up to my expert witness.

23 Q. Okay. Thank you. I'm glad to know.

24 Well, I think that answer takes care of the rest
25 of my questions on these.

1 MR. LAROCK: Are there other questions?

2 Sure thing.

3 Q. (BY MR. LAROCK) Let's see here. One of the
4 conditions is TR-1 trench excavation shall not commence
5 until the hydrologic control plan is revised to include
6 water treatment facilities approved by DEQ. Do you know
7 what you mean by water treatment facilities?

8 A. That, again, will be reviewed by my expert
9 witness.

10 Q. Is it your understanding that the Land Quality
11 Division generally permits or handles water treatment
12 facilities?

13 A. Should be handled by -- water treatment
14 facilities? I don't know what regards our expert witness
15 was stating to -- referring to in that matter, so I'll
16 leave that up to him.

17 Q. Okay. I think just one last question. Is it
18 your understanding that in order to discharge any water,
19 water that might need to be treated, they'll have to get a
20 discharge permit from the Water Quality Division at that
21 time DEQ?

22 A. That's correct. WYPDES permit is required.

23 Q. Is it your understanding they can discharge
24 water without that Water Quality permit?

25 A. No.

1 MR. LAROCK: Okay. We have no further
2 questions for this witness.

3 CHAIRMAN BAGLEY: Thank you.
4 Council members, any questions?
5 Deb?

6 COUNCIL MEMBER BAUMER: Not at this time.

7 CHAIRMAN BAGLEY: Nick?

8 COUNCIL MEMBER AGOPIAN: Not at this time.

9 CHAIRMAN BAGLEY: Meghan?

10 COUNCIL MEMBER LALLY: Give me a second. I
11 don't think so.

12 CHAIRMAN BAGLEY: And I don't have any
13 questions either. Wow. So council's done with its
14 questions.

15 Ms. Boomgaarden.

16 MS. BOOMGAARDEN: Thank you, Dr. Bagley.

17 REDIRECT EXAMINATION

18 Q. (BY MS. BOOMGAARDEN) Mr. Sweeney, when Mr. Pope
19 was cross-examining you, he asked you whether Brook --
20 excuse me, whether Big Horn had refused to consent to
21 Brook's mining reclamation plan. And you answered that
22 yes; is that correct?

23 A. That's correct.

24 Q. Why did Brook refuse to consent -- excuse me.
25 Why did Big Horn refuse to consent to Brook's mining

1 reclamation plan?

2 A. They were unwilling to, I guess, discuss it with
3 us, and shortly thereafter the lawsuit occurred.

4 Q. Mr. Pope also asked you whether Big Horn would
5 request that Brook have a surface use agreement or be
6 required permission to access Big Horn Coal's property to
7 gather TR-1 baseline data as requested in your permit
8 condition. And you answered that in the affirmative yes;
9 is that correct?

10 A. That is correct.

11 Q. I'm afraid you might have misunderstood his
12 question, so I'm going to ask you another question just to
13 make sure that the record is clear. Does Big Horn intend
14 to abide by the access that would be provided to Brook
15 under the order in lieu of consent if that order is
16 upheld?

17 A. Yes.

18 Q. Thank you.

19 Mr. Pope referred to a hypothetical which
20 he had presented to you during his deposition of you.
21 and that hypothetical caused you to draw a conclusion
22 based on an assumption that you -- whether -- with
23 regard to whether you would hire an independent
24 consultant who had been hired by someone else to
25 oppose your mine permit application. Do you recall

1 that?

2 MR. POPE: Dr. Bagley, I have to object.

3 That mischaracterizes the question. I asked if Mr. Sweeney
4 hired a company and that company later on opposed that same
5 project and had nothing to do with third parties or other
6 companies.

7 MS. BOOMGAARDEN: Dr. Bagley, based on
8 Mr. Pope's characterization of the hypothetical, which he
9 presented to you more clearly than I did.

10 Q. (BY MS. BOOMGAARDEN) My question to you is did
11 you ask Aqua Terra to oppose Brook's application?

12 A. I did not, no.

13 Q. And did you have any reason to believe that
14 Mr. Gerlach's expertise or credibility would be
15 compromised by his testimony at this hearing?

16 A. No.

17 Q. You had a lengthy discussion with Mr. Pope with
18 regard to a number of specific objections set forth in
19 Big Horn Coal's January 25th objection letter. And I
20 believe you testified earlier that your intent in drafting
21 that objection letter was to set forth items for
22 discussion with DEQ in informal conference; is that
23 correct?

24 A. That is correct.

25 Q. And did you refine your objections specific to

1 the case you wanted to present in this proceeding before
2 the council?

3 A. Yes, we did.

4 Q. And are those refined objections incorporated
5 into Big Horn Coal's requested conditions?

6 A. Yes.

7 Q. And are those the conditions that you set forth
8 in Big Horn Coal Exhibit 5?

9 A. That is correct. Yes.

10 MS. BOOMGAARDEN: Thank you. I have no
11 further questions.

12 CHAIRMAN BAGLEY: Thank you,
13 Ms. Boomgaarden.

14 Thank you, Mr. Sweeney.

15 THE WITNESS: Thank you.

16 CHAIRMAN BAGLEY: You may step down.

17 Do you have an additional witness,
18 Ms. Boomgaarden?

19 MS. BOOMGAARDEN: Yes, we do. Thank you,
20 Dr. Bagley.

21 Big Horn Coal calls Mr. Joe Gerlach.

22 (Witness sworn.)

23 PAUL JOSEPH GERLACH,
24 called for examination by Big Horn Coal, being first duly
25 sworn, testified as follows:

1 DIRECT EXAMINATION

2 Q. (BY MS. BOOMGAARDEN) Good afternoon,
3 Mr. Gerlach. I just want to make sure that you have that
4 notebook there in front of you, which will have some
5 exhibits we'll be referring to. And also Mr. Gregersen
6 will be projecting specific exhibits on this screen.

7 Could you please state your full name for the
8 record.

9 A. Paul Joseph Gerlach.

10 Q. And what is your title or --

11 THE REPORTER: Title or?

12 A. I'm sorry.

13 Q. (BY MS. BOOMGAARDEN) What is your title or
14 position?

15 A. I am president of Aqua Terra Consulting.

16 Q. And what do you do in your capacity as
17 president -- president of Aqua Terra Consultants?

18 A. Well, I do technical studies, and as best I can,
19 I try to direct the business functions of the company as
20 well.

21 Q. And I'd like you to turn to Exhibit Big Horn
22 Coal 8. Excuse me. Yes, 8. Can you please identify that
23 document.

24 A. It is my resume. My curriculum vitae.

25 Q. And did you prepare that document?

1 A. I did.

2 Q. And is it current and accurate?

3 A. It is.

4 Q. And could you briefly summarize your education
5 and experience for the council.

6 A. Well, I have a Bachelor of Arts degree with a
7 minor in hydrogeology from -- dated 1974 from Miami
8 University of Oxford, Ohio. And I have a master of
9 science degree in geology from the School of Mines in
10 Rapid City, 1976.

11 Q. Following the completion of your education,
12 which you got your MS in 1976? Am I reading that
13 correctly?

14 A. That is correct.

15 Q. And so for the last -- I happen to know that
16 that's a lot of years because I have a high school reunion
17 coming up before too long. So for the last few decades,
18 can you summarize for the council what you've been doing?

19 A. Well, for 40 years I've been doing what I still
20 do now, geologic investigations and hydrologic
21 investigations, directed predominantly towards mining in
22 Wyoming and Montana, sometimes elsewhere.

23 Q. Do you have experience specifically in coal mine
24 permitting?

25 A. Most of my experience is in coal mine

1 permitting.

2 Q. Can you give the council an idea, over the
3 course of your career, what types of mines you've
4 permitted, what kind of permit applications you've worked
5 on, what you've contributed to those applications.

6 A. Types of mines. Well, coal predominantly, some
7 uranium, bentonite, hard rock, dolomite and limestone,
8 little bit of gold in Montana.

9 Q. Let's focus on the coal specifically. Have you
10 permitted surface coal mines?

11 A. Yes.

12 Q. Underground coal mines?

13 A. No.

14 Q. Any highwall mines?

15 A. No. I've permitted no highwall mining.

16 Q. And have you been involved in preparing and
17 submitting new permit applications?

18 A. May I make a correction? I did assist with the
19 Black Butte Mine highwall mining back in the late '80s or
20 '90s, trying to -- I'm sorry.

21 Q. No problem. Thank you.

22 Have you worked on new permit applications?

23 A. Oh, yeah.

24 Q. And on permit renewals or modifications?

25 A. Yes.

1 Q. And have you worked specifically with the Land
2 Quality Division, Division 3, here in Sheridan?

3 A. Not exclusively, but very frequently, yes.

4 Q. Are you a licensed professional geologist in the
5 state of Wyoming?

6 A. I am.

7 Q. And for how long?

8 A. Since they started it. Sometime in the '80s --
9 I can't remember when State of Wyoming started the program
10 for professional licensing.

11 Q. So you hold one of the first numbers on your
12 stamp; is that correct? One of the early numbers?

13 A. Yeah. Number 83.

14 Q. Okay. Mr. Gerlach, have you ever been qualified
15 before by a court as an expert witness in the areas of
16 geology and hydrogeology?

17 A. I have.

18 Q. Have you ever been qualified as an expert
19 witness in those same areas by any administrative agency?

20 A. I have.

21 Q. And what agency was that?

22 A. I'm sorry?

23 Q. What agency was that?

24 A. Well, there was the Board of Control, State of
25 Wyoming, once or twice, over contested water rights. And

1 then there was the water court of Montana over contested
2 water rights.

3 MS. BOOMGAARDEN: Thank you.

4 At this point, Dr. Bagley, I'd like to offer
5 Mr. Gerlach as an expert in this proceeding to testify on
6 hydrology and hydrogeology that is related to coal mine
7 permitting.

8 CHAIRMAN BAGLEY: Okay.

9 Q. (BY MS. BOOMGAARDEN) Mr. Gerlach, how did you
10 become involved in this proceeding?

11 A. Well, I was asked to -- to review the Brook Mine
12 permit application.

13 Q. And who asked you that?

14 A. Mr. Sweeney. Jordan Sweeney. Pardon me.

15 Q. And do you remember when Mr. Sweeney contacted
16 you?

17 A. Well, it was early January of this year.

18 Q. Okay. And what did he ask you to do?

19 A. He asked me to review the permit application
20 document, and I responded that, well, I would review those
21 article -- if it was selections of it that I felt
22 comfortable in: geology, hydrology, probable hydrologic
23 consequences, determination of the overall water balance
24 during and after mining. Those are the main features.

25 Q. And did he provide you any specific materials to

1 review?

2 A. He did not.

3 Q. So what did you review in preparing your
4 conclusions?

5 A. I reviewed a copy -- digital copies that he had
6 previously asked in December 2016, during the public
7 review comment period, he had asked Aqua Terra to acquire.
8 And we got those digital copies from the District 3 office
9 here, on a, you know, thumb drive. And that's what I
10 reviewed.

11 Q. Okay. And was it your understanding that with
12 the publication of the mine permit application that there
13 were also copies made available at the Land Quality
14 Division offices, the clerk's office and other places?

15 A. Well, I acquired -- we acquired in December the
16 thumb drive digital copy of what was told to us would be
17 the entire Brook Mine permit application from the District
18 3 office here in town. We went down to the clerk's office
19 here in Sheridan, and all they had were, you know, paper
20 copy. And my coworker that did this file collection
21 thumbed through it, found it was different, substantially
22 different. It had three more rounds of comment and
23 comment responses in it. It all appeared to be related to
24 materials that I did not feel qualified to review anyhow
25 in the adjudication file.

1 Q. So you're confident that you reviewed the most
2 current version of the mine permit application in those
3 areas that you felt qualified to review?

4 A. I am confident, yes.

5 Q. When Mr. Sweeney asked you to review the mine
6 permit application, did he tell you that Big Horn intended
7 to oppose the Brook Mine application?

8 A. What I recall him telling me when he called me
9 in early January was that he was concerned about elements
10 of the Brook Mine permit application related to what he
11 saw in the proposed mine plan of Brook Mine, how those
12 operations looked to him would affect the main entrance
13 route the mine has to the shop, which goes beyond the shop
14 up to the big reservoir, pit 3 reservoir, and goes to the
15 siding area that the mine still has. He was concerned
16 about competing with Brook Mine for the access, the use of
17 those facilities. And the shop itself, he was concerned
18 about it.

19 Q. So did Mr. Sweeney ask you to confine your
20 review to a certain geographic area that was in that TR-1
21 area?

22 A. No. He really didn't give me any instructions.
23 He just asked me to review what I felt -- I told him what
24 I feel comfortable. That's what I reviewed.

25 Q. Did Mr. Sweeney ask you to give any specific

1 opinions or draw any particular conclusions?

2 A. He did not.

3 Q. And what did you provide Mr. Sweeney following
4 your review?

5 A. Well, I prepared some draft comments on it,
6 which were used in the January 25th objections to the DEQ,
7 Mr. Edwards, and followed up, then, with finalizing those
8 on or before -- well, slightly before the 25th of January
9 of this year.

10 Q. Okay. So you understood that Big Horn Coal did
11 intend to file an objection letter with DEQ?

12 A. Yes, I did.

13 Q. Did you understand at that time that Big Horn
14 Coal intended to request an informal conference with DEQ
15 to discuss those concerns or objections?

16 A. Would you repeat that, please?

17 Q. Sure. Did you understand at the time that you
18 were providing this information to Big Horn Coal, that
19 they intended to ask for an informal conference with DEQ
20 to discuss those concerns and objections?

21 A. Yes. That was my understanding.

22 Q. Did you have any prior knowledge of Brook Mine's
23 interest in developing a mine plan in this area?

24 A. Yes.

25 Q. Can you explain how you had that knowledge.

1 A. Well, Brook Mine retained -- contacted me, and I
2 agreed to them retaining my services -- Aqua Terra's
3 services in November 2011.

4 Q. And did you tell Brook that if you became
5 concerned that there -- a conflict could arise between
6 Brook and Big Horn, that your loyalty resided with Big
7 Horn as your existing client?

8 A. Not initially, but as time went on, yes.

9 Q. And did you terminate your contract with Brook?

10 A. I did.

11 Q. I'm going to ask you to turn, please, to Big
12 Horn Exhibit 19. Can you identify that document?

13 A. Yes.

14 Q. And what is it?

15 A. It is my letter of May 9, 2013, terminating Aqua
16 Terra Consultants with Ramaco, Brook.

17 Q. And why did you terminate your relationship with
18 Brook?

19 A. Well, because, as I state first paragraph there,
20 as things had developed over the last six months prior to
21 May 9th, it became quite clear to me I was entering into a
22 probable conflict of interest with two entities that I
23 have a long history and an active current history of doing
24 business with -- providing services for.

25 Q. Did you believe that a conflict of interest had

1 been created at the time you terminated that contract?

2 A. About that time, yes.

3 Q. What kind of work did you do for Brook?

4 A. Well, it was pretty fundamental. It was
5 gathering basic geologic information, drill logs,
6 groundwater hydrology information, all available in the
7 public domain. Some of it from United States Geological
8 Survey, oh, gathering information on who owns what, and
9 making state maps, surface ownership, mineral ownership,
10 all available from like the county tax records here, and
11 mineral ownership from the State of Wyoming of water
12 rights from the State Engineer's Office and mapping those
13 materials and feeding that basic information to Ramaco.

14 Q. Were you charged with responsibility for
15 drafting any portion of an earlier version of Brook's
16 permit application?

17 A. No.

18 Q. Did Brook's mine plans at the time you were
19 working with Brook, did they bear any resemblance to the
20 Brook Mine and reclamation plan that you reviewed?

21 A. Very little. I knew, up to the day of my
22 termination of services, that it was going to be some
23 combination of open pit. I looked at -- there had been
24 things all over the place in terms of having nothing but
25 open pit mining. Golder and Marston you heard about was

1 kicking around lots of ideas of four or five different
2 areas that I believe now were at that time all preexisting
3 Brook permit area. And then there were ideas of, well,
4 we'll do some of that, do some highwall mining. But it
5 was very reconnaissance level.

6 Q. But I understand that was four to five years ago
7 that you did that work; is that correct?

8 A. Well, from -- yeah, 2011 to May 2013, November
9 2011.

10 Q. Thank you.

11 Let's turn back, then, to your review of Brook's
12 2017 mine and reclamation plan. I'd like you to turn, if
13 you would, please, to Big Horn Exhibit 9. Do you see that
14 document, Mr. Gerlach?

15 A. I do.

16 Q. Do you recognize it?

17 A. I do.

18 Q. And could you please identify for the council
19 what that document is.

20 A. It's my expert report In the Matter of Big Horn
21 Coal Company versus Brook Mine is the title.

22 Q. And you prepared this document; is that correct?

23 A. I did.

24 Q. And on the first page that is projected on the
25 screen there, is that your professional stamp or seal and

1 signature on this document?

2 A. It is.

3 Q. Where -- excuse me. When did you prepare this
4 report?

5 A. Well, I prepared it in the -- toward the end of
6 March. The seal's dated the 28th of March, 2017.

7 Q. So do I understand correctly that you provided
8 information for Big Horn to include in its objection
9 letter, but this report was prepared after that objection
10 letter was submitted; is that correct?

11 A. Yeah. Six weeks or so after.

12 Q. And so did you prepare this report specifically
13 for the purpose of these formal proceedings before the
14 Environmental Quality Council?

15 A. Yes.

16 Q. Okay. Thank you.

17 Does the report -- does your expert report
18 reflect the information that you provided to Mr. Sweeney
19 to include in the objection letter?

20 A. Yes, it does.

21 Q. I'd like to refer you to pages 4 through 9 of
22 the report. So that would be Big Horn Coal 9-004. And do
23 you see just underneath that first paragraph, in bold
24 letters -- bold capital letters the word "opinions"?

25 A. I do.

1 Q. And if you flip through to page 005, page 006,
2 007, 008 and 009. Is it fair to say that you provided in
3 your report three different opinions?

4 A. It is.

5 Q. Now I understand the council's admitted this
6 report as evidence. To avoid duplication with the
7 testimony of other experts that are going to be presented
8 by other parties, I'd like to focus your testimony today
9 on your first two opinions. Is that okay?

10 A. That's fine.

11 Q. Would it be fair to summarize the conclusions
12 that you reached in your first two provisions as, first,
13 that Brook's mine and reclamation plans lack the baseline
14 data and study required by LQD rules and regulations?

15 A. It is fair.

16 Q. Thank you.

17 I'm asking you to confirm this because I'm going
18 to ask you in my lay language, because I am not a
19 hydrogeologist. And so in my reading of those opinions,
20 I'm trying to put them in language where we can summarize
21 those for the council. And then your second conclusion,
22 Brook's mine permit application lacks complete and
23 accurate plans as required by the Environmental Quality
24 Act and Land Quality Division Rules and Regulations prior
25 to permit approval. Is that a fair summary of your second

1 conclusion?

2 A. That is correct.

3 Q. Now, Mr. Gerlach, you cite a number of
4 applicable regulatory provisions in your report. And in
5 order to be as efficient as possible here today, we're
6 going to put a series of laws, rules and regulations on
7 the screen, and I'm going to ask you whether you can
8 please confirm whether these are provisions that you
9 have -- that you are familiar with and that you considered
10 in rendering your expert opinion.

11 MS. BOOMGAARDEN: Can we enlarge that at
12 all?

13 Q. (BY MS. BOOMGAARDEN) Mr. Gerlach, on this first
14 document, do you see up in it looks like blue font in the
15 box at the top the identification of what this document
16 is, and can you please tell the council?

17 A. Well, your rules and regulations currentness,
18 Department of Environmental Quality, Land Quality-Coal
19 Chapter 2, Permit Application Requirements For Surface
20 Coal Mining Operations.

21 Q. Thank you. And we're going to scroll down then
22 to Section 4 in this chapter. I'm sorry. I'm too slow.
23 I apologize. Is the document on the screen now -- can you
24 please tell me the title of Section 4?

25 A. Other -- Other Baseline Requirements.

1 Q. Is this a chapter and section of the DEQ rules
2 and regulations on which you rely?

3 A. It is.

4 Q. I'm going to go now and ask you to look down to
5 (a)(viii). There are three provisions that I believe you
6 identified as having particular importance to your
7 conclusions. Do you recognize that as Chapter 2,
8 Section 4(a)(viii), the highlighted language with multiple
9 lines?

10 A. Can you flip up a little bit. Make sure we're
11 still in Chapter 4. I recognize this, yes.

12 Q. Okay.

13 A. Oh, yes. Sure, I do.

14 Q. Okay. And can you, please, just generally
15 summarize the baseline requirements for mine permit
16 applications in this provision?

17 A. Well, that there be an identification in the
18 mine permit application of the geologic strata, all the
19 way through the minable sequence stack, down below the
20 lowest stratum of the mine. Keyword here "or any
21 aquifer" -- "aquifer" -- "below the lowest coal seam to be
22 mined which may be adversely impacted by mining."

23 Q. Okay. Thank you.

24 Is there anything that we've missed in that
25 provision or should we move to the next one?

1 A. Well, very next highlighted section is indeed
2 very pertinent. Location of any groundwater.

3 Q. Okay. Thank you.

4 So let's scroll down -- we're still in Chapter 2
5 Section 4 -- to (xii). Do you recognize that provision,
6 Mr. Gerlach?

7 A. I do.

8 Q. And can you please summarize the critical
9 baseline information you believe is required in this
10 provision?

11 A. Well, it requires current information on
12 groundwater, which may be affected in the permit area and
13 adjacent areas, including best native depth and quantity
14 of groundwater existing in the proposed permit area.
15 Again, down to and through the mine hole sequence stack
16 through lowest seam to be mined. It says if you may be
17 the operator -- applicant/operator -- may be required to
18 conduct test drilling and monitoring in order to determine
19 the exact depth, quantity and quality of the groundwater
20 in the geologic formations that may be affected by the
21 mining operation.

22 Q. Thank you.

23 Is there anything else in that provision that we
24 need to raise at this time?

25 A. Well, I'd say so. The sentence lithology of all

1 known aquifers, that's fundamental if you're going to run
2 a groundwater model and calculate PHCs from that model.

3 Q. Okay. Thank you. Let's scroll down then to
4 (xiv). Do you recognize that provision?

5 A. I do.

6 Q. And can you please summarize for the council the
7 critical baseline information required by that provision
8 in a permit application.

9 A. Well, here. Following up on that last sentence,
10 it says, "A description of the surface groundwater related
11 geology in the permit area and general area sufficient to
12 access the probable hydrologic consequences," abbreviated
13 PHC. Then it goes on to talk about additional work we
14 have to do if there's acid toxic -- potentially toxic-
15 forming elements in the strata to be mined.

16 Q. Thank you.

17 So Mr. Gerlach, so that we don't have to go back
18 to these when you're giving your substantive testimony, do
19 you feel comfortable in stating that these provisions in
20 Chapter 2, Section 4, the three provisions that you just
21 summarized, are those key provisions to which your
22 substantive testimony and your conclusions pertain?

23 A. For baseline characterization, although I
24 also -- my thoughts are drawn to the Statute 35-11-406,
25 which a lot of this is, but it requires, for instance,

1 identification of water sources to be used by the mine,
2 specific identification of water sources utilized, I
3 believe, by hydrogeologic strategy in the location.
4 Spatial location.

5 Q. Thank you. I think we're going to come back to
6 that provision also when we talk about the plans that need
7 to be based on this baseline study. So let's go now --
8 we're going to pull up Chapter 19 from the Land Quality
9 Division Rules and Regulations. Do you recognize that as
10 Chapter 19?

11 A. I do.

12 Q. And can you please read for the record the title
13 of Chapter 19?

14 A. Section 2, Required Studies.

15 Q. Required studies for what?

16 A. Well -- I'm sorry. Did you ask for the title of
17 Chapter 19?

18 Q. Yes.

19 A. Well, that's up there in blue at the top.
20 Chapter 19 Required Studies for Surface Coal Mining Permit
21 Applications and Assistance for Such Studies.

22 Q. Thank you.

23 And then you've already told us the -- the title
24 for Section 2. There's a fair amount of language that
25 we've highlighted there. If you feel like you need to

1 read it because that's the best and most accurate
2 characterization, please do. But if you'd like to
3 summarize, your professional understanding, of what you
4 have to do to satisfy Chapter 19, Section 2 in a mine
5 permit application, please summarize.

6 MR. POPE: Objection, Dr. Bagley. Calls
7 for him to summarize legal requirements. He's not an
8 expert in coal.

9 MS. BOOMGAARDEN: Dr. Bagley, I asked
10 him to summarize what he relies on in this language in
11 Chapter 19, Section 2, when he is asked either to review a
12 mine permit application or to prepare a mine permit
13 application. I didn't ask him to draw any legal
14 conclusion.

15 CHAIRMAN BAGLEY: I definitely don't want
16 him to read all that. So, yeah, we will take it as an
17 expert witness to provide his -- what he uses as an expert.

18 A. Well, in summary, this is just the supervisory
19 results of the operator's PHCs for surface and
20 groundwater, provide those results to the administrator
21 down in Cheyenne at the DEQ headquarters so they can
22 conduct on their own a CHIA, a Cumulative Hydrologic
23 Impact Assessment.

24 Q. (BY MS. BOOMGAARDEN) Thank you.

25 And in looking through the language, and as

1 Dr. Bagley noted, Chapter 19, Section 2 sounds like the
2 mother of all baseline requirements. Would you agree?

3 A. Yes, I do agree.

4 Q. In your professional experience, has the Land
5 Quality Division ever ignored the mandatory language
6 contained in that provision?

7 A. No.

8 Q. In your professional experience, have they ever
9 allowed a permit applicant that you were working with to
10 fill in the blanks following permit approval?

11 A. No.

12 Q. We're going to wrap up with the statutes and
13 law. And I'm sure you heard here how important it is to
14 tie the objections or any assertion of missing information
15 to the statutes and laws. So we're going to talk about
16 just four other provisions, and we're going to talk about
17 that in the context of the plans that you deemed to be
18 required in your expert report.

19 So first I've asked Mr. Gregersen to pull up
20 Chapter 2, Section 5(a)(ix). Do you recognize that
21 provision?

22 Oops. I'm sorry. I can't see that far, so I'm
23 not sure if he had the correct one up or not.

24 Do you recognize that provision, Mr. Gerlach?

25 A. I do.

1 Q. And did you rely on that provision in your
2 review of whether Brook Mine's permit application
3 contained a plan to ensure the protection of the quantity
4 and quality of and rights to surface water and
5 groundwater?

6 A. I did, yes, refer to this requirement.

7 Q. Thank you.

8 MS. BOOMGAARDEN: Mr. Gregersen, could you
9 please pull up the statutes. We have just three statutory
10 provisions.

11 Q. (BY MS. BOOMGAARDEN) Mr. Gerlach, on the screen
12 now, is that the statute that you referred to a moment ago
13 as 35-11- -- excuse me. No. I apologize. I think you
14 said (n) before, but this is 35-11-406(b)(xviii). Do you
15 recognize that?

16 A. Are we not --

17 Q. I'm sorry.

18 A. I do recognize that.

19 Q. Okay. And does that relate to the requirement
20 you mentioned a minute ago?

21 A. It does.

22 Q. Thank you.

23 And if we could move, then, to 35-11-406(n).
24 First, I'd like you to look at -- do you see the statute
25 for 35-406(n)?

1 A. I see it.

2 Q. Okay. I'd like you to first look at (n)(iii).

3 Can you please -- that's a short provision. Can you
4 please discuss what that requires?

5 MR. POPE: Objection, Dr. Bagley. I
6 believe Ms. Boomgaarden asked for him to describe what that
7 requires. The statute speaks for itself. If it's a
8 what-he-relied-on question, I have no objection, but asking
9 him to interpret what that section requires is different.

10 MS. BOOMGAARDEN: Dr. Bagley, I phrased the
11 question poorly. I'll restate the question.

12 CHAIRMAN BAGLEY: Okay.

13 Q. (BY MS. BOOMGAARDEN) Mr. Gerlach, can you
14 please tell me whether you relied on that statutory
15 provision as a requirement when you reviewed Brook Mine's
16 permit application?

17 A. I did rely on this, yes.

18 Q. And, lastly, if I can ask you to please look at
19 35-11-406(n)(i). Did you look at Brook Mine's permit
20 application and conclude -- draw conclusion as to whether
21 you believed it was both accurate and complete?

22 A. I did.

23 Q. And you did that based on the statutory
24 provision?

25 A. Yes.

1 Q. Thank you.

2 Applying sound scientific principles, do you
3 believe that a mine plan can be complete, accurate or even
4 useful if baseline data supporting those required plans is
5 not accurate or complete?

6 A. No, I do not believe that you can accomplish a
7 meaningful understanding of probable hydrologic
8 consequences, surface or groundwater listed data.

9 Q. I'm sorry. Mr. Gerlach. Can you speak up a
10 little bit and slow down a little bit?

11 A. Well, okay. Maybe I'm getting too long-winded.
12 Would you repeat the question, please.

13 Q. Excuse me. Applying sound scientific
14 principles, can a mine plan be complete and accurate if
15 the baseline data supporting that plan is not complete and
16 accurate?

17 A. In my opinion, no.

18 Q. Thank you.

19 Let's focus in greater detail on why you
20 concluded that Brook's mine plan doesn't comply with the
21 baseline study requirements. And I'd like you to focus
22 specifically on the TR-1 area. Were you present to hear
23 the testimony of Mr. Kristiansen and Mr. Kunze?

24 A. I was.

25 Q. And also Dr. Kuchanur?

1 A. I was.

2 Q. And Mr. Barron?

3 A. Yes.

4 Q. Between your review of Brook's mine plan and
5 their testimony, their collective testimony, do you
6 believe that you have a good understanding of the baseline
7 hydrology that Brook collected and used in its mine permit
8 application?

9 A. Relative to the TR-1 area, most certainly not.

10 Q. I'm not sure that you understood my question.

11 Let me ask it again.

12 You reviewed Brook's mine plan; is that correct?

13 A. Yes.

14 Q. And do you have a good understanding of the
15 baseline information that they included in that mine
16 plan --

17 A. I see.

18 Q. -- to support --

19 A. Yes. Sorry.

20 Q. -- the plan?

21 A. I have a good understanding what was submitted
22 in the mine plan.

23 Q. And you also heard the testimony of those
24 different individuals; is that correct?

25 A. I did.

1 Q. And so you're also considering the testimony
2 that they gave in your assessment today; is that correct?

3 A. Correct.

4 Q. Okay. Thank you. Are you aware of any other
5 additional data that was available to Brook and to DEQ,
6 but that was not utilized in the mine permit application?

7 A. I am.

8 Q. Okay. In the notebook, I'd ask you to please
9 turn to Big Horn Coal Exhibit 15. Are you there?

10 A. I am.

11 Q. And can you identify that document?

12 A. It is the Big Horn Mine groundwater restoration
13 demonstration.

14 Q. And did you have any role in preparing that
15 document?

16 A. I did.

17 Q. Okay. For what purpose?

18 A. For what purpose was it prepared?

19 Q. Correct.

20 A. It was prepared to demonstrate to the
21 satisfaction of the DEQ that the lands that have been
22 reclaimed within Big Horn Mine were reclaimed in terms of
23 their groundwater hydrology, meeting the standards that
24 were set in the reclamation plan and meeting the declared
25 post-mining land use for the water -- land -- water uses.

1 Q. And you said that you prepared -- you were
2 responsible for preparing this document, correct?

3 A. I was the principal author.

4 Q. And if I look at different pages -- let's just
5 look at the first two pages of that document. There are
6 different dates on different pages down at the bottom
7 toward the bottom -- toward the right-hand corner. Do you
8 see that?

9 A. I do.

10 Q. And can you please explain for the council why
11 there are different dates within this document?

12 A. Well, we started work on this, oh, '99 or 2000,
13 and submitted it initially in 2001, and then it went
14 through several rounds of back and forth review comments
15 with the local LQD here, Land Quality Division of DEQ.
16 And then, finally, I believe the last round of changes was
17 April of 2002. It was approved by the State of Wyoming
18 because DEQ, as they changed to the permit -- to the
19 permit of Big Horn Mine in August of 2002.

20 Q. And so this was a document in which you had to
21 provide data and analysis, and it went through a comment
22 and revision period with DEQ over that time period. Do I
23 understand that correctly?

24 A. That is correct.

25 Q. In your opinion -- and I'm going to refer to

1 this as the GRD, meaning groundwater restoration
2 demonstration. In your opinion, is it fair to
3 characterize the final GRD as the most recent and complete
4 collection of groundwater data in the TR-1 area?

5 A. It is.

6 Q. And do I understand correctly that the GRD is
7 publicly available in Big Horn's mine permit file?

8 A. It is.

9 Q. If you would, please turn to the index -- excuse
10 me, table of contents. On pages 3 -- we're going to go to
11 pages 3, 4 and 5.

12 MS. BOOMGAARDEN: And, Council Members, we
13 are not going to go in-depth into this document. I'm
14 trying to refer you to the table of contents -- con --
15 excuse me -- table of contents so that we can proceed with
16 this in a more expedited fashion.

17 Q. (BY MS. BOOMGAARDEN) Are you on page 3 of this
18 exhibit, Mr. Gerlach?

19 A. I am.

20 Q. So using this index as a reference, I'd like you
21 to tell me the first piece of information in this index
22 that you think is critical data that you found nowhere in
23 Brook's mine plan.

24 A. The discussion of the water level recovery
25 within the mine backfill, the old Pits 1 and 2 -- Big Horn

1 Mine pits 1 and 2 in the TR-1 area.

2 Q. Thank you.

3 That's the first piece of data --

4 A. That's --

5 Q. First area where data is included in this GRD?

6 And in your expert opinion, what is the risk of
7 not including data related to water level recovery within
8 backfill and adjacent affected aquifers?

9 A. It's not -- the risk is is you're not
10 recognizing the existence of -- as we speak now, probably
11 80, 85 feet of saturated backfill on the average of the
12 pits in the TR-1 area, Pits 1 and 2 area. That thickness
13 represented, I'm sure, about twice the thickness of all
14 the saturated coal in the three coal seams that they did
15 in the model. I --

16 THE REPORTER: Can you say that again?

17 THE WITNESS: That Brook Mine improvement
18 application did a model for inflow rate estimations and
19 drawdown estimations in the coal seams.

20 Q. (BY MS. BOOMGAARDEN) And would that include
21 down below the water level recovery on page 6, also
22 hydrographs of mine backfill wells on page 11?

23 A. Yes. That next entry of beyond the first one I
24 mentioned, that's pretty important -- very important
25 understanding what happened in the TR-1 area, the -- the

1 Pits 1 and 2 of the historic Big Horn Mine area. What
2 happened in that backfill relative to groundwater, the
3 hydrographs give you a temporal -- a time -- time -- a
4 time -- over-time perspective of how long this has gone
5 on, how they got to a point where they were sympathetic to
6 the rise and fall of the two rivers, Goose Creek and the
7 Tongue River.

8 Q. And what would be the next data that you relied
9 on, as evidenced in the table of content?

10 A. Well, the final -- the potentiometric surface of
11 water table surface, map in the -- in discussion in this
12 GRD.

13 Q. And can you please identify where that is in the
14 table of contents?

15 A. Page 13.

16 Q. Okay. Thank you.

17 And what would the next piece of data be?

18 A. The very next thing, page 14, groundwater
19 production grades. We're not talking about an aquifer
20 that is of a negligible groundwater production. Something
21 else instead.

22 Q. And then the next piece of data, in the table of
23 contents?

24 A. Well, the current store -- status of the
25 storage -- groundwater storage in that mine backfill.

1 Q. And can you please identify where that is?

2 A. Page 15.

3 Q. Okay. Anything else?

4 A. Well, then a PHC has to -- you know, quantity
5 and quality, surface and groundwaters, you've got to look
6 at -- you got the Pit 1 and 2 spoils groundwater quality
7 discussion that -- that's on pages 19 and 20.

8 Q. Okay. And you referenced PHC. Did you mean to
9 refer to probable hydrologic consequences and how it would
10 relate to that data?

11 A. Yes. You use this table of the GRD to help you
12 develop -- fundamental in developing for the greatest
13 aquifer that exists in the Brook Mine area for developing
14 PHC.

15 Q. And is there anything else on that first page of
16 the table of contents? I'm going to get to more specific
17 questions in a minute, but I want to make sure we've
18 highlighted for the council the key areas in the GRD that
19 you relied on. Anything else in the first page?

20 A. You know, there is. A recharge capacity of the
21 mine backfill.

22 Q. And what page is that located?

23 A. Sixteen.

24 Q. Okay. Thank you. Anything else on that first
25 page of the table of contents?

1 A. Oh, I think we got the main points.

2 Q. And how about the next page of the table of
3 contents? Is there any critical piece of information on
4 page BHC 15-004 that you believe was omitted from
5 consideration in Brook's mine plan?

6 A. There are a number of things. It compares what
7 we found in and what we documented in this GRD, the review
8 of the predicted. So what we found when we prepared this
9 document relative to what was predicted in the Big Horn
10 Mine permit application document for what ultimately how
11 the groundwater would restore. So we made that
12 prediction. Were those earlier projections, decades old
13 by the time they did this, were they right or wrong?

14 Q. And where would that be found in this report?

15 A. 26. Page 26.

16 Q. Okay. Thank you.

17 And anything else on this page of the table of
18 contents?

19 A. Well, there's an aquifer yields, page 29.

20 Q. Okay.

21 A. Very important Table 2 Soil Aquifer Hydraulic
22 Properties.

23 Q. Okay. And, again, I'm going to ask you some
24 specific questions, but just wanted to make sure we had
25 references. Is there anything else specific in the GRD

1 that you would like to highlight its location for the
2 council?

3 A. There is.

4 Q. What would that -- was is that?

5 A. Well, other drilling that was done, Addendum --
6 Addendum A, Part 2, Results of Spoils Drilling,
7 August 2001, Test Hole Logs and Monitoring Well Log
8 C-2001.

9 Q. Does that cover it?

10 A. For pages iv and v?

11 Q. Yes.

12 A. Well, ultimately the purpose of all this data is
13 to create a meaningful PHC if you were going to go in and
14 re-disturb an area. So, yeah, the groundwater quality
15 graphs and quality results in Addendum B help characterize
16 the way things are -- the way things were in -- when
17 approved August 2002 by the State of Wyoming.

18 Q. Okay.

19 A. Background baseline.

20 Q. Thank you, Mr. Gerlach.

21 And, again, I know you've covered this much more
22 exhaustively in your report, but for purposes of your
23 testimony this afternoon, I'm going to ask you some
24 specific questions now based on your knowledge of the data
25 that you just highlighted. In your professional opinion,

1 without consideration of the data that you just discussed
2 in the GRD, has Brook satisfied the requirement that it
3 provide complete information on all groundwater?

4 A. No.

5 Q. Does the mine plan contain the best available
6 data as to groundwater elevation?

7 A. No.

8 Q. How about groundwater quantity?

9 A. No.

10 Q. How about the direction of groundwater flow?

11 A. No.

12 Q. How about the source of recharge or discharge?

13 A. No.

14 Q. Yet all of that information is available in the
15 GRD?

16 A. For free in the public domain.

17 Q. Okay. Thank you.

18 Did Brook's Mine plan demonstrate whether
19 there's a connection between the Tongue River and the TR-1
20 area --

21 A. Yes.

22 Q. -- strata -- excuse me, TR-1 area strata?

23 A. Yes, it does.

24 Q. Brook's mine plan demonstrated that there's a
25 connection between?

1 A. Oh, Brook's mine -- I'm sorry.

2 Q. Yes.

3 A. I thought I heard you say -- no, it doesn't
4 touch upon the subject.

5 Q. Why -- excuse me. Did I -- okay. Why would
6 that demonstration be important in step 1?

7 A. Tongue River is the largest perennial stream in
8 northeastern Wyoming, and TR-1 is parked right next to it.
9 You can expect it to be, and this GRD strongly
10 demonstrates, it is a constant head source. It's
11 24/7/365.

12 Q. Could Brook have used the GRD to make that
13 determination?

14 A. Yes.

15 Q. Ask you to turn to what we've marked as Big Horn
16 Coal Exhibit 10. Do you recognize that exhibit as the now
17 well-known Skittles map that Mr. Kristiansen and others
18 have referred to?

19 A. I do.

20 Q. And I believe -- do you recognize this -- I'm
21 sorry. I'm skipping ahead. There is a red marking down
22 next to the bottom right-hand corner where it says BHC 10,
23 there's a small box. Can you identify this as the map
24 that's included in Brook's permit application?

25 A. It is -- just a second.

1 Q. I know it's small.

2 A. Exhibit MB.4, I believe, -1.

3 Q. 4-1?

4 A. I believe this is.

5 Q. And do you see underneath where it says "coal
6 removal sequence" in that box, do you see in red font
7 C1-objection Exhibit A?

8 A. I do.

9 Q. And did you add that language in red font?

10 A. Yes.

11 Q. What does that refer to?

12 A. Well, that refers to the objections that were
13 made before the environment quality -- the DEQ.

14 Q. So was this -- did you label this exhibit
15 yourself as an exhibit to your objections and expert
16 report?

17 A. Yes.

18 Q. Okay. Thank you.

19 Did you make any other changes to this map?

20 A. No. I -- I did not, no.

21 Q. There was a pointer there, I believe, on the
22 table, Mr. Gerlach. Using that pointer can you just
23 please confirm for the council what you're referring to
24 when you reference the TR-1 area?

25 A. It's this area here. Just for reference --

1 Q. Thank you.

2 A. -- this is Goose Creek and Tongue River.

3 Q. Can I ask you to please turn to Big Horn

4 Exhibit 12. Did you prepare this exhibit?

5 A. I did.

6 Q. And how did you prepare this exhibit?

7 A. Well, we took the Skittles -- that's what it
8 is -- Skittles map of MP -- of the Brook Mine permit
9 application and combined an element from the GRD,
10 digitally, Rubber Sheeting and AutoCAD, that element from
11 the GRD being the initial trench, the open-pit trench,
12 that will be dug and to which the drive in the --

13 THE REPORTER: I'm sorry. I can't hear
14 you.

15 THE WITNESS: From which they use highwall
16 mining machine to do the highwall mining tunnels to the
17 north and to the south. And it is difficult to see, but --
18 it's easier with this hard copy -- but there's a blue area
19 in here that represents the area of shallow water table,
20 groundwater table, where the water table is 20 feet or less
21 below ground surface as per the GRD groundwater restoration
22 demonstration.

23 Q. (BY MS. BOOMGAARDEN) In your opinion,
24 Mr. Gerlach, does this map illustrate the connectivity
25 between the shallow groundwater above TR-1 and the Tongue

1 River?

2 A. It does, yes.

3 Q. Please explain.

4 A. The shallow water table above -- in this fairly
5 large area here, that goes right into the Tongue River.

6 Q. And, again, did I understand that that's based
7 on the data that's available in the GRD?

8 A. That is correct.

9 Q. In preparing this map, were you able to
10 digitally calculate the distance of the closest point of
11 the TR-1 panel to the Tongue River?

12 A. Yes.

13 Q. And what was that distance?

14 A. It's approximately a hundred feet.

15 Q. Thank you.

16 Did the Brook Mine plan characterize groundwater
17 quality data in the TR-1 area?

18 A. No.

19 Q. Why would that characterization be important at
20 the permit application or step 1 phase?

21 A. What you document in the permit application
22 before mining -- prior to mining -- for groundwater
23 quality and surface water quality is the baseline, the
24 background by which you in the future compare and report
25 in your annual reports all your monitoring results of

1 groundwater quality and surface water quality to look for
2 changes.

3 Q. And without doing that, could the probable --
4 probable hydrologic consequences determination be made as
5 required in Chapter 19?

6 A. Not in my mind. And Chapter 19 is the CHIA, the
7 probable hydrologic -- not in my opinion, no.

8 Q. Thank you for correcting me. You told me before
9 that I had put the wrong thing in my notes, and I missed
10 that.

11 So just to make sure the record's clear, it's
12 your opinion you could not determine the CHIA without that
13 important information?

14 A. I don't think that the State of Wyoming could do
15 a meaningful CHIA without having that piece of the puzzle.

16 Q. Did the Brook Mine plan characterize surface
17 water quality data in the TR-1 area?

18 A. Not in the TR-1 area, no.

19 Q. And could a CHIA determination be made without
20 that information?

21 A. Not in my opinion.

22 Q. And could Brook have used the data in the GRD to
23 make both the groundwater and surface water quality data
24 characterization?

25 A. Well, the GRD is the groundwater water

1 restoration demonstration. So you'd have to -- I mean,
2 there's lots of data in the public domain, years and years
3 worth of monitoring by Big Horn. Again, it's not really
4 right next to the TR-1 area.

5 Q. What is not right next to the TR-1 area?

6 A. The surface water monitoring database, the
7 historic database of Big Horn Mine. And as far as your
8 question is concerned, the answer -- straight answer is
9 no, but what the GRD did was groundwater quality,
10 groundwater restoration demonstration.

11 Q. So did the GRD have useful information for a --
12 for characterization of groundwater quality?

13 A. Yes.

14 Q. Okay. But it did not have useful information
15 for characterization of surface water quality?

16 A. Yes, not -- not complete in the mine plan.

17 Q. Okay. Thank you for that clarification.

18 As a consulting hydrogeologist, do you think
19 it's important that complete baseline data be included in
20 a permit application for purposes of meaningful peer
21 review?

22 A. I do.

23 Q. Given your assessment of Brook's baseline study,
24 I want to talk for a minute about how those data
25 deficiencies affect the accuracy and completeness of the

1 plans that are required. In your opinion, does the Brook
2 Mine plan contain a complete and accurate water quantity
3 and quality protection plan?

4 A. It does not.

5 Q. I'm going to ask Mr. Gregersen to please pull up
6 DEQ Exhibit 12, page 139. Whoops. Do you recognize that
7 exhibit?

8 A. I do.

9 Q. And were you present for Dr. Kuchanur's
10 testimony with regard -- with regard to that exhibit
11 yesterday?

12 A. I was.

13 Q. And based on, again, the legend down in the
14 lower right-hand corner, can you please identify for the
15 record which mine plan document this is?

16 A. I'm sorry. I can't. It's right here and it's
17 so darn fuzzy.

18 Q. And I'm going just to make sure we have clear
19 for the record what it is you're referring to. Can you
20 tell from that, Mr. Gerlach, which mine plan document that
21 is?

22 A. I can.

23 Q. Can you please state that for the record?

24 A. Exhibit MP.5-1.

25 Q. Did you make any alterations to that exhibit?

1 A. No.

2 Q. Does that exhibit help you to explain the basis
3 for your conclusion that the mine plan does not contain
4 complete and accurate water quantity and quality
5 protection plans?

6 A. Yes.

7 Q. Can you please explain how -- why this document
8 supports that?

9 A. The purpose of the TR-1 area, again, down on
10 here, this -- the box cut spot, we do have -- can you blow
11 it up a little bit more in here, please? We have a
12 proposed sedimentation pond, a very small one, nearby that
13 will handle runoff from an overburden stockpile, for Pit
14 3. Very small pond. No access available. Storage
15 capacity per the surface area of the runoff dams. If you
16 look out in the area of the proposed TR-1 area, there's no
17 other ponds. There's no other sedimentation ponds. And
18 I'm mindful of 35-11-406 referring to demanding you show
19 sedimentation ponds.

20 Q. So, Mr. Gerlach, is that small pond that you
21 just pointed to, is that identified Sedimentation Pond
22 SP-8?

23 A. Oh, I'm sorry. There it is. SP-8. There we
24 see it. Yep. SP-8. That's handling the overburden
25 stockpile.

1 Q. And do I recall correctly in your report that
2 you took issue with the design capacity of Sediment Pond
3 8?

4 A. Yes, I did.

5 Q. And can you please explain the reasons for your
6 conclusion that the design of Sediment Pond 8 is flawed.

7 A. Well, it's designed for a runoff area, if memory
8 serves me, of approximately 30 acres. Sediment pond --
9 proposed Settlement Pond SP-8 of Brook Mine is right on
10 top of it. I mean, literally occupies the same position
11 as the Brook -- the Big Horn Mine's current Reservoir 14,
12 which, in itself, has had full hydrologic control release
13 and so has Reservoir 14's contributing drainage area. All
14 released from hydrologic control. Water doesn't need to
15 be treated. The state of Wyoming has returned them to --
16 restoration of all those waters have met the standards.

17 Q. So can you please point out on the map where Big
18 Horn's Reservoir 14 is located?

19 A. Well, it's right here. It's not shown on this,
20 but it's the very same position, virtually.

21 Q. So understanding there's a lack of clarity on
22 the location, do I understand correctly that Big Horn
23 Coal's Reservoir 14 is at capacity and couldn't be used as
24 any additional capacity for Sediment Pond 8?

25 A. Well, Brook Mine has got -- plan is to do some

1 significant modification -- modifications to Big Horn Mine
2 Reservoir 14 to turn it into -- in order to turn it into
3 Sedimentation Pond 8. Okay? And -- but the thing of it
4 is, that caught my eye, it's simple, is that the design
5 for the capacity of the finally modified SP-8 of Brook
6 Mine, it's only for a drainage area of 30-some acres,
7 when, in truth, the design for the same location pond, Big
8 Horn Mine Reservoir 14 -- as I recall, well over 230
9 acres, 260 acres -- with all this drainage that happens
10 outside of the Brook Mine permit area, that comes in from
11 here and it will -- there's no berm. There's no diversion
12 of that flow. So I'm highly confounded as to how that
13 happened.

14 Q. Thank you.

15 With regard to your discussion just now of
16 Sediment Pond 8, was it those same concerns that you
17 raised that supported Big Horn -- Big Horn Coal's request
18 for a mine permit condition that the design of Sediment
19 Pond 8 be reevaluated?

20 A. Yes.

21 Q. Okay. Thank you.

22 Does the Brook Mine plan include a plan to
23 minimize disturbance to prevailing hydrologic balance at
24 both the mine site and associated offsite areas?

25 A. Not in my opinion.

1 Q. I'll ask you to turn to Big Horn Exhibit 14. Do
2 you recognize that exhibit, Mr. Gerlach?

3 A. I do.

4 Q. And I know that, again, it's going to be
5 difficult to read, but would you take any issue with
6 identifying that as the geologic cross-section K-K Prime
7 from Addendum D5-3, Exhibit 2 in Brook's mine plan?

8 A. Sheet --

9 THE REPORTER: I'm sorry. Say that again.

10 A. Sheet 12 of 12, yes.

11 Q. (BY MS. BOOMGAARDEN) Excuse me. Just above the
12 Ramaco seal down in the lower right-hand corner, do you
13 see the red letters C1-objection Exhibit E?

14 A. I do.

15 Q. And did you include that just to make a
16 reference to your expert report?

17 A. I did.

18 Q. And did you make any other alteration to this
19 map?

20 A. Yes.

21 Q. And can you please explain what that is?

22 A. One alteration I made to this drawing is the
23 addition of this red line, which is on elevation 3600 feet
24 beneath sea level. Again -- and this was very well
25 described yesterday by Mr. Kuchanur.

1 Q. Excuse me. I'm sorry. I couldn't hear you?

2 A. Mr. Kuchanur -- Kuchanur.

3 Q. Dr. Kuchanur?

4 A. It is Dr.?

5 Q. Yes.

6 So is this the same exhibit that Dr. Kuchanur
7 was referring to --

8 A. It is.

9 Q. -- yesterday?

10 Okay. And what was the purpose that you added
11 the red elevation line?

12 A. Well, I wanted to show relative to that --
13 remember that exhibit where it's hybrid between the -- the
14 exhibit of the Skittles and the shallow -- area of shallow
15 water table in the TR-1 area, which --

16 Q. So you're referring to -- just let me make sure
17 the council can follow this. You're referring to Big Horn
18 Exhibit 12; is that correct?

19 A. Yes, it is correct.

20 Q. Okay. Thank you.

21 A. Yep.

22 This corresponds to that depth in the TR-1 area
23 of shallow -- shallow groundwater depth of 3600 feet.
24 These are 50-foot intervals, these tick marks. So as
25 Dr. Kuchanur said yesterday, you get about a hundred feet

1 of bed differential between this red line and the bottom
2 of the Carney coal seam where the mining will occur. This
3 is the Tongue River. And so the TR-1 area's in here. So
4 material 1 will effectively excavate all through this in
5 the open trench. This signifies, by the way, in the
6 Ramaco exhibit, mine backfill. Doesn't show any
7 saturation of mine backfill. It, however, does show two
8 monitor wells. And they are showing the potentiometric
9 surface elevation in the Carney and the Masters coal seams
10 below the Carney. There's two --

11 Q. Please speaks up, Mr. Gerlach. It's difficult
12 for the court reporter to hear you.

13 A. Oh.

14 Q. So when you're turned away, if you could speak
15 just a little louder.

16 A. All right. The point being that the proposed
17 mining operation will dig the open pit all the way through
18 and then drive the tunnels -- the highwall mining tunnels
19 back into the coal. For the TR-1 area, if you just add
20 up all the Skittles tunnels, you've got -- which I didn't
21 do -- because many thousands of feet. You're going to
22 have a lattice work, all underneath this backfill,
23 saturated backfill, of tunnels.

24 Going back to the groundwater elevation in the
25 backfill, being the red line, versus the depth of the

1 coal, what's going to happen? There's going to be a
2 large, hundred-foot-plus potential driving the water from
3 the backfill down in the trench. This will be very
4 prevalent during mining before they start backfilling the
5 TR-1 trench. And it's going to go down into those
6 tunnels. There's no place to go. They'll have to pump
7 quite a bit -- quite a bit of water out in order to
8 operate the highwall mining machine out after mining. So
9 that's the probable hydrologic consequences operation of
10 highwall mining. Is it assessed? No. No.

11 Q. Is it a what? I'm sorry.

12 A. Is it analyzed.

13 Q. Okay.

14 A. Assessed.

15 Q. Thank you.

16 And just for clarification, Mr. Gerlach. Do you
17 see that intermediary sort of yellow band, and that was
18 talked about being a strata that separated the two --

19 A. This is the shale band.

20 Q. Okay. And the yellow above that?

21 A. That's a sand or sandstone.

22 Q. And that will be drilled through, is that your
23 understanding -- or cut through for the trench cut?

24 A. Well, the -- the TR-1 mining plan is to cut all
25 the way through, down through the -- you know, I have that

1 wrong, folks. This is the -- it's difficult.

2 This is the Carney coal. This is Masters coal.

3 Okay? This is all shale. You may recall from

4 Dr. Kuchanur's discussion yesterday, this is all shale.

5 Okay. We're looking at a saturated thickness now in the

6 backfill of about 70 to maybe 85 feet. Then we have about

7 70 feet of shale that the open-pit excavation will go

8 through, after it's gone through the saturated backfill,

9 go through the shale. And then it will enter the bottom

10 of the Carney coal, which will drive it through the

11 highwall mining tunnels in the Carney coal.

12 Q. And, Mr. Gerlach, did I understand you think

13 that it will flow out the tunnels, the path of least

14 resistance that was discussed yesterday?

15 A. Yes. They will. In existing environment, as

16 Mr. -- Dr. Kuchanur described yesterday, and I couldn't

17 agree more, is this shale is -- it transmits groundwater,

18 but, as he said, at a very small rate. I agree fully, as

19 documented by the water level clear up here versus clear

20 down here. So you can see the groundwater levels.

21 There's not a -- as Dr. Kuchanur explains,

22 there's not a -- a commingling or an equilibrium between

23 the water that's far apart. Once you -- they go through

24 this and break this shale in here with the initial open-

25 cut trench, then during mining water has no obstacle but

1 to come right down and enter into the tunnels or be pumped
2 out.

3 Q. Let me follow up on that, Mr. Gerlach.

4 CHAIRMAN BAGLEY: Can I suggest maybe we
5 take a break?

6 MS. BOOMGAARDEN: Certainly.

7 CHAIRMAN BAGLEY: We've been going at this
8 for a while. Let's take 15 minutes. It's 4:00. And we'll
9 start back at 4:15.

10 (Hearing proceedings recessed

11 4:00 p.m. to 4:22 p.m.)

12 CHAIRMAN BAGLEY: All right. We are back
13 in session. Please, Ms. Boomgaarden, continue.

14 MS. BOOMGAARDEN: Thank you, Dr. Bagley.

15 Q. (BY MS. BOOMGAARDEN) Mr. Gerlach, I want to
16 refer back just for a moment to the exhibit that's up
17 right now, Big Horn Coal 14. And you testified a minute
18 ago about the water in the gray backfill area being able
19 to move down through the different stratum when the trench
20 cut is made and flowing out through the -- the tunnels or
21 drifts of the highwall plan -- or, excuse me, highwall
22 mine. Is that correct?

23 A. That is correct.

24 Q. Can you tell me, is that going to be a one-time
25 event or will that be a recurring event?

1 A. I can.

2 Q. Go ahead and describe how that's going to occur
3 and how often and why.

4 A. The trench will be backfilled by the Ramaco --
5 by the Brook operation. And, in my mind, there's no
6 reason to suspect that backfill will be any different than
7 the backfill that's already out there. But the main
8 difference will be, going forward forever, is that this
9 clay seal will be broken, the shale seal. So consequently
10 water only has one place to go post-mine environment, from
11 here down to the backfill of the Brook Mine trench and
12 then into the mine highwall tunnels.

13 Q. And that backfill that's there, is that
14 continually recharged? So will that drain effect
15 continue --

16 A. It will continually --

17 Q. -- over time?

18 A. -- recharge the water that I mentioned going
19 back down through the future Ramaco TR-1 backfill. It's
20 all recharged by Tongue River --

21 THE REPORTER: Recharged by Tongue River --

22 THE WITNESS: Tongue River and Goose Creek.

23 Q. (BY MS. BOOMGAARDEN) And did the mine permit
24 application that was published, in your opinion, contain
25 information as to how that feature -- that drain feature,

1 and the backfill water flowing back down through and out
2 through the tunnels, did the mine plan address how big --
3 how Brook Mine was going to manage that?

4 A. It does not. It doesn't assess it whatsoever.

5 Q. I'm going to shift gears here with you just for
6 a minute. Did you hear Dr. Kuchanur testify yesterday
7 about the MODFLOW groundwater model?

8 A. I did.

9 Q. And have you used MODFLOW?

10 A. I have.

11 Q. And do you agree with Dr. Kuchanur that MODFLOW
12 represents the industry standard in groundwater modeling
13 software?

14 A. I do.

15 Q. Would the modeling results from the MODFLOW
16 predictions, would those have been improved had data from
17 the GRD been used in the groundwater model?

18 MR. POPE: Objection, Dr. Bagley. I don't
19 believe there's been any testimony that Mr. Gerlach is
20 aware of -- has actually run the model. So I don't know
21 how he would have a basis on which to conclude that new
22 data in the model would lead to a different result.

23 MS. BOOMGAARDEN: Dr. Bagley, Mr. Gerlach
24 has studied the model that was used and the results of the
25 model. And he's testified that he's familiar with data in

1 the GRD that appeared nowhere in the mine permit
2 application, the mine plan. And he's testified that he's
3 familiar and has used that model, and I think that's a
4 sufficient basis upon which he can tell this council if he
5 thinks the results of the model would have been improved by
6 the use of that data.

7 CHAIRMAN BAGLEY: He is being considered an
8 expert. I'm willing to hear his opinions as to what the
9 results of the MODFLOW would be if additional data were
10 added.

11 Q. (BY MS. BOOMGAARDEN) Okay. So, Mr. Gerlach,
12 let me just rephrase it. I tend to speak in too many
13 words.

14 Would the results of the MODFLOW groundwater
15 model for Brook Mine have been improved if that model
16 would have used, in addition, data from the GRD?

17 A. It would be a vast improvement providing vastly
18 different numerical results.

19 Q. Thank you.

20 Without data from the GRD, are the modeling
21 results sufficient to allow the administrator to make a
22 CHIA determination?

23 A. No, they're not sufficient.

24 Q. I believe you've already testified that it was
25 the observations you made and conclusions you drew in your

1 expert report that helped you word specific permit
2 conditions for Big Horn Coal; is that correct?

3 A. That is correct.

4 Q. And is it because you had these concerns with
5 the lack of baseline data and the inaccuracy of the plans
6 that you suggested that Big Horn should request specific
7 permit conditions?

8 A. It is.

9 Q. Did you hear Dr. Kuchanur testify that the
10 groundwater model accounted for overburden drawdown?

11 A. I did.

12 Q. And do you agree?

13 A. No.

14 Q. Why not?

15 A. There's no evidence in the mine plan or in the
16 addendum of the mine plan housing the groundwater model
17 that the groundwater model ever considered any saturation
18 in the overburden. And, indeed, in support of that
19 finding of mine, I mean, there's -- there's -- we
20 discussed it in Section MP.6.2.3, comes right out and says
21 there's no modeling of drawdown in the overburden.

22 Q. Did you hear Dr. Kuchanur testify on
23 cross-examination that TR-1 was included in model layer
24 number 1?

25 A. I did.

1 Q. Do you agree TR-1 was hydrologically included?

2 A. No. It's not hydrologically included, but it's
3 part of what's called a domain in the groundwater model,
4 which is fancy word for geographic extents.

5 Q. And were you here when I believe it was
6 Mr. Barron was -- no, excuse me, it was Dr. Kuchanur --
7 was asked whether the saturated backfill in the TR-1 area
8 constituted an aquifer?

9 A. Would you ask that again, please?

10 Q. Sure. Were you here -- did you hear
11 Dr. Kuchanur testify that the saturated backfill in TR-1
12 wasn't an aquifer because it was not productive at this
13 time?

14 A. I did hear that, yes.

15 Q. And do you agree with that conclusion?

16 A. Not at all.

17 Q. Why not?

18 A. The groundwater restoration demonstration
19 carries with it a number of aquifer tests that were done,
20 some by me for my master's thesis back in the -- well,
21 before I was hired by Big Horn Mine. You know -- you
22 know, if you go to that exhibit, you'll see that we pumped
23 some of those wells for hours and hours and hours, up to
24 37 gallons a minute.

25 Q. In your professional opinion, could a

1 groundwater well be permitted in that backfill?

2 A. By all means.

3 Q. Thank you.

4 Mr. Gerlach, based on your knowledge and
5 experience, has DEQ, Land Quality Division typically
6 required more hydrologic data in analytic detail in a mine
7 permit application than what Brook has provided?

8 A. Yes.

9 Q. In your experience, do you know of any other
10 circumstances where a mine permit application has been so
11 lacking in hydrologic detail?

12 MR. POPE: Objection. Mischaracterizes the
13 evidence.

14 CHAIRMAN BAGLEY: Yeah, I -- I think we
15 need to perhaps rephrase that.

16 MS. BOOMGAARDEN: I'll just move to my last
17 question. Thank you, Dr. Bagley.

18 Q. (BY MS. BOOMGAARDEN) Mr. Gerlach, would you
19 affix your professional stamp and signature on any portion
20 of Brook's mine permit that you reviewed?

21 A. No elements of the mine or reclamation plan.

22 MS. BOOMGAARDEN: Thank you. I don't have
23 any further questions.

24 CHAIRMAN BAGLEY: Thank you,
25 Ms. Boomgaarden.

1 Ms. Anderson.

2 MS. ANDERSON: I have no questions. Thank
3 you.

4 CHAIRMAN BAGLEY: Thank you.

5 Mr. Gilbertz.

6 MR. GILBERTZ: I appreciate Mr. Gerlach's
7 testimony and thank him for it, but I have no questions.

8 CHAIRMAN BAGLEY: Thank you.

9 Mr. Pope.

10 MR. POPE: Thank you, Dr. Bagley.

11 CROSS-EXAMINATION

12 Q. (BY MR. POPE) Good afternoon, Mr. Gerlach.

13 A. Good afternoon, Mr. Pope.

14 Q. Let's start with when you were retained in this
15 matter. As I understand, you were hired by Big Horn Coal
16 on January 6, 2017, correct?

17 A. It was in early January 2016.

18 Q. I believe you testified to this on direct, but
19 you helped prepare portions of Big Horn Coal's objection
20 letter that was filed on January 25, 2017; is that
21 correct?

22 A. That's correct.

23 Q. So the total time that you had to review the
24 permit application, when you were hired in early January
25 and when the objection letter was filed, it's about

1 19 days; is that fair?

2 A. Sounds reasonable.

3 Q. And during that time when you reviewed -- before
4 the filing of the objection letter -- you did not speak
5 with anyone at DEQ about Brook's permit application,
6 correct?

7 A. That is correct.

8 Q. And as a result, you weren't aware of the
9 specific review that DEQ did of Brook's permit
10 application, correct?

11 A. Not directly.

12 Q. Of course, I hate to do this so early under the
13 process, Mr. Gerlach. You remember coming to the Sheridan
14 County courthouse for a deposition a couple weeks ago?

15 A. Uh-huh.

16 Q. You and I had a chance to sit down in the jury
17 room and chat about Brook's permit application, correct?

18 A. Yes.

19 Q. And there was a court reporter present who
20 administered an oath to you to tell the truth, didn't she?

21 A. Yes.

22 Q. And you promised to tell the truth, correct?

23 A. I certainly did.

24 Q. And you told us the truth?

25 A. I believe I did.

1 Q. Mr. Gerlach, I've handed you a copy of your
2 deposition transcript. If you would do me a favor and
3 turn to page 36. I'd like to direct your attention to
4 line number 2. Do you see that?

5 A. I do.

6 Q. Follow along with me, please. The question, "As
7 you identified those issues that as you said were
8 overlooked, did you communicate at all with anyone at DEQ
9 to figure out why they reviewed a particular portion of
10 the permit application the way they did?"

11 Answer, "No."

12 Did I read that correctly?

13 A. Yes.

14 Q. Let's move on to the interaction of your work
15 with Big Horn Coal and Brook. You testified that you had
16 done some initial baseline gathering work as part of
17 Brook's permit application, correct?

18 A. Can you repeat that, please?

19 Q. Sure. You testified on direct that you had
20 worked for Brook gathering some initial baseline data to
21 help prepare a permit application, correct?

22 A. Correct.

23 Q. Okay. But at some point you identified a
24 conflict of interest, at least a potential conflict of
25 interest, between Brook and Big Horn Coal Company,

1 correct?

2 A. Correct.

3 Q. I believe you described it as there was a
4 loyalty you had to Big Horn Coal and I believe Padlock
5 Ranch as well, correct?

6 A. I don't think so.

7 Q. Ms. Boomgaarden asked you the question that you
8 had a loyalty to clients, and you said yes to historical
9 clients like Big Horn Coal. My question is, you were
10 hired as an independent expert, but an independent expert
11 does not have loyalty to the client that is hiring him as
12 an expert; is that correct?

13 A. I'm not sure I understand your question. Sorry.

14 Q. Sure. I mean, I may have asked too long of a
15 question. Let me back up.

16 Ms. Boomgaarden asked you a question about when
17 you identify the potential conflict of interest, that you
18 have a loyalty to historical clients like Big Horn Coal
19 and Padlock Ranch. It was testified that you were hired
20 as an independent expert. My question is, an independent
21 expert does not owe loyalty to the person or party hiring
22 that person as an independent expert, correct?

23 A. If I understand your question to be they should
24 not be biased, by loyalty or whatever affinity, bias as to
25 the entity hiring him to provide an expert report, if

1 that's -- if my understanding there is correct, I agree.

2 Q. And after you identified the potential conflict
3 of interest between Brook and Big Horn Coal, you
4 terminated your relationship with Brook, correct?

5 A. That's correct.

6 Q. You did not is, however, terminate your
7 relationship with Big Horn Coal, correct?

8 A. Correct.

9 Q. You continued to provide services for Big Horn
10 Coal?

11 A. Correct.

12 Q. Mr. Kristiansen testified on direct that ethical
13 responsibilities of professional engineers and
14 professional geologists are important. Were you here to
15 hear that?

16 A. I was.

17 Q. You agree with that statement?

18 A. Yes.

19 Q. And as I understand it, the Board of
20 Professional Geologists in Wyoming propagates Rules of
21 Professional Conduct. Is that accurate?

22 A. That is accurate.

23 Q. You're aware of those rules, then, I take it?

24 A. I am.

25 Q. Have you read them?

1 A. Yes.

2 Q. You follow them?

3 A. I attempt to, yes.

4 Q. Do you follow them or do you attempt to follow
5 them?

6 A. I believe I have followed them.

7 MR. POPE: Mr. Ruby, I have an exhibit
8 here.

9 MR. RUBY: You want this for the witness?

10 MR. POPE: That one is.

11 MR. GREGERSEN: Excuse me, Mr. Pope. Are
12 you offering this exhibit into evidence or are you just
13 using it to examine the witness?

14 MR. POPE: I'm just using it to examine the
15 witness right now. If we need to mark it, we will.

16 MR. GREGERSEN: Thank you.

17 Q. (BY MR. POPE) Mr. Gerlach, we've handed you a
18 copy of the Chapter 4 of the Board of Professional
19 Geologists rules. If you can turn to the second page. At
20 the top it says Section 1, Code of Professional Conduct,
21 correct? The second page.

22 A. 4-2?

23 Q. Should say 4-1 at the bottom.

24 A. Oh, yes. Correct.

25 Q. I'd like you to go down in Section 1 to

1 Section 1(a)(vii). I'd just like you to follow along. It
2 says here that "A licensee or trainee shall not knowingly
3 accept an assignment where the duties to a client or the
4 public would conflict with their personal interest or the
5 interest of another client without full disclosure of all
6 material facts of the potential," goes on to the next
7 page, "conflict to each person who might be related to or
8 affected by the project or engagement in question." Did I
9 read that correctly?

10 A. I believe so.

11 Q. As I understand it, you did not inform Big Horn
12 Coal of a potential conflict. Instead, they informed you
13 of the potential conflict, correct?

14 A. Not correct.

15 Q. So your testimony is that Big Horn Coal did
16 not -- and to be fair, let me be more precise with my
17 question.

18 Isn't it true, Mr. Gerlach, that Big Horn Coal
19 told you that the Brook permit application would involve
20 the use of Big Horn Coal surface?

21 A. I don't recall that they did that --

22 THE REPORTER: You don't recall that they
23 did that what?

24 THE WITNESS: That Big Horn Coal told me
25 that Brook Mine application would utilize Big Horn Coal

1 surface, I believe was the question.

2 THE REPORTER: If I ask you to repeat, just
3 what you just said. Okay? Thank you.

4 Q. (BY MR. POPE) Mr. Gerlach, if you pick up your
5 deposition transcript again, please, and turn to
6 page 25. I'm sorry. That's the binder.

7 A. Oh.

8 Q. I know there's a lot of stuff right there.

9 And when you get to page 25, I'd like to direct
10 your attention to line 8. Do you see line 8?

11 A. I do.

12 Q. If you follow along with me, please. The
13 question here is, "Did you ever come to learn while you
14 were working for Brook that part of its operations would
15 be conducted on Big Horn Coal surface or surface that Big
16 Horn Coal was using?

17 A. Yes.

18 Q. Now that we've established that, did you inform
19 Big Horn Coal that you were doing work on behalf of Brook
20 Mine that would result in operations overlapping on Big
21 Horn Coal surface or surface that Big Horn Coal was using?

22 A. They informed me. They had more knowledge of
23 the subject than I did."

24 Did I read that correctly?

25 A. I believe you did.

1 Q. If you'd -- I know I'm forcing you to switch
2 between various things. Would you pick up the rules of
3 professional geology again?

4 A. Sure.

5 Q. Thank you.

6 If you go to page 4-2. Should say that at the
7 bottom. I'd like you to go down to (xiv). Do you see
8 that?

9 A. I do.

10 Q. This section says that "A licensee or trainee
11 shall not use, directly or indirectly, any confidential
12 information obtained from or in the course of performing
13 services for an employer or client in any way that is
14 adverse or detrimental to the interest of the employer or
15 client, except with prior consent of the employer or
16 client or when disclosure is required by law." Did I read
17 that correctly?

18 A. I believe you did.

19 Q. I'd like to talk, with that in the background,
20 about your use of information in this case. As we
21 discussed a moment ago, you chose, after identifying a
22 potential conflict of interest between Big Horn Coal and
23 Brook --

24 MS. BOOMGAARDEN: Objection. That's a
25 mischaracterization. Mr. Gerlach didn't testify that he

1 characterized it as a conflict of interest.

2 MR. POPE: Dr. Bagley, I think both on
3 direct and on cross Mr. Gerlach said he identified a
4 potential conflict of interest and he took action.

5 CHAIRMAN BAGLEY: Okay.

6 MS. BOOMGAARDEN: I believe his testimony
7 was he identified there could be a potential for a conflict
8 of interest and that's when he took action. If it's
9 characterized fairly, I'm fine with that.

10 CHAIRMAN BAGLEY: The -- there was an
11 exhibit with the actual letter. I don't recall which
12 exhibit it was.

13 MS. BOOMGAARDEN: Uh-huh. 19. Big Horn
14 19.

15 CHAIRMAN BAGLEY: Thank you. Let's see
16 what that says.

17 MS. BOOMGAARDEN: I believe the second to
18 the last line of the first paragraph.

19 CHAIRMAN BAGLEY: "May be nearing the
20 potential situation of entering into a conflict of
21 interest."

22 MR. POPE: And let me be clear, Dr. Bagley.
23 I did ask a question of Mr. Gerlach -- I stated he
24 identified conflict of interest, and he responded in the
25 affirmative. To make it clear for the record, I can re-ask

1 that question again.

2 CHAIRMAN BAGLEY: Yeah. I had to admit I
3 can't quite tell what the objection is and why. If you
4 could re-ask the question so I can hear what the wording
5 is.

6 MR. POPE: Absolutely.

7 Q. (BY MR. POPE) Mr. Gerlach, did you ever
8 identify a conflict of interest between the Brook Mine and
9 Big Horn Coal?

10 A. No.

11 Q. So your testimony here today is that you
12 identified a potential conflict of interest?

13 A. Between Aqua Terra consultants and myself and
14 Brook Mine relative to my relationships with Big Horn Mine
15 and Padlock Ranch.

16 Q. I remember this discussion from our deposition.
17 You -- let's -- for the council's benefit, let's see if we
18 can flesh out this issue so we can work through this
19 efficiently as possible.

20 You understood that at some point in time Big
21 Horn Coal and Brook could have an overlapping permit
22 scenario, correct?

23 A. At some point in time late in my service with
24 Brook, I -- I believe I did see that information. I'm
25 uncertain. What I recall mostly is that all of the Brook

1 plans were well to the west, outside of Big Horn Mine.

2 That's what I remember. Can I absolutely say, well, there
3 might have been some in Brook? I'm not sure.

4 Q. And upon identifying, as you said, potential
5 conflict of interest between yourself, Aqua Terra and
6 Big Horn -- excuse me, Brook, you terminated your
7 relationship with Brook, correct?

8 A. That is correct.

9 Q. You did not, however, terminate your
10 relationship with Big Horn Coal, correct?

11 A. Correct.

12 Q. And even though, as you express in this letter
13 and expressed in your deposition, part of the source of
14 that conflict was the potential overlap between the
15 proposed Brook Mine and Big Horn Coal surface, correct?

16 A. By the date of that letter, when I wrote that,
17 yes, that became a fact.

18 Q. So with that -- with that established, let's --
19 let's circle back to the romanette -- excuse me, (xiv)
20 about the use of information between clients.

21 When you terminated your relationship with
22 Brook, you had gathered data that they could use for their
23 permit application, correct?

24 A. That is correct.

25 Q. And you were also, as part of gathering that

1 data, involved with meetings involving the Department of
2 Environmental Quality, correct?

3 A. That is correct.

4 Q. So you're in possession of Brook's data. You
5 also, based on your testimony on direct, are in possession
6 of a groundwater restoration demonstration you did on
7 behalf of Big Horn Coal Company, correct?

8 A. Long time before I ever knew the existence of
9 Brook, yes.

10 Q. Fair enough. You took that groundwater
11 restoration demonstration and used it as part of forming
12 your opinions in your expert report, correct?

13 A. That is correct.

14 Q. And your expert report in this case, and your
15 testimony on direct, is against a former client, Brook
16 Mine, correct?

17 A. Yeah. Correct.

18 Q. So you used information in your possession from
19 one client and are currently using it against a former
20 client in these proceedings, correct?

21 MS. BOOMGAARDEN: Objection. I think he's
22 already asked and answered.

23 CHAIRMAN BAGLEY: Yeah, I -- he has
24 answered that affirmatively.

25 MR. POPE: Okay.

1 MS. ANDERSON: You know, and, Dr. Bagley,
2 he's not my witness, but I would also note that geology is
3 a self-regulating profession in Wyoming, and should be --
4 should Brook Mine have concerns about Mr. Gerlach's
5 testimony here today, there may be another forum that's
6 more appropriate for raising those concerns.

7 CHAIRMAN BAGLEY: Thank you, Ms. Anderson.
8 I was beginning to wonder myself.

9 We are not the Board of Professional Geologists,
10 and so I think we need to, you know, examine the validity
11 of his expert opinion, which, of course, he's been an
12 expert and that. But I want to be careful that we don't go
13 into an area that could be construed as a complaint or
14 something. That would need to be dealt with by a separate
15 board.

16 MR. POPE: If I may, Dr. Bagley, make, I
17 guess, an offer of proof, however you want to call it. Our
18 intention is not to be lodging a complaint and having you
19 all act as the Board of Professional Geologists. Instead,
20 what this line of questioning is attempting to do is to
21 demonstrate Mr. Gerlach has not filled his ethical
22 obligations as a professional geologist. And that should
23 weigh in your minds as to credibility of this witness.

24 With that said, I'm done with that line of
25 questioning. I can move on.

1 CHAIRMAN BAGLEY: Okay. Thank you.

2 Q. (BY MR. POPE) Mr. Gerlach, let's talk very
3 briefly about your opinion on permits in the state of
4 Wyoming. You would agree with me that permits are living
5 and dynamic documents, correct?

6 A. Portions of them are, uh-huh.

7 Q. All right. Let's talk a little bit more about
8 this groundwater restoration demonstration. You and
9 Aqua Terra prepared this for Big Horn Coal as part of its
10 reclamation efforts, correct?

11 A. Correct.

12 Q. This was not prepared as part of a permit
13 application, correct?

14 A. For -- well, it's prepared with the full
15 understanding that it would become part of the permit
16 application. Not the application application, but permit
17 of the mine. What we generically call the permit
18 application. It's not the initial application, but it's
19 permit 500-whatever.

20 Q. Let me ask a more precise question so we can get
21 there.

22 A. Okay.

23 Q. The groundwater restoration demonstration was
24 not prepared for Big Horn Coal as part of its initial
25 application for a permit to mine, correct?

1 A. Certainly.

2 Q. You would agree with me that the Department of
3 Environmental Quality had access to the groundwater
4 restoration demonstration because it was included in Big
5 Horn Coal's permit, correct?

6 A. Would you repeat that, please?

7 Q. Sure. You would agree with me that the
8 Department of Environmental Quality had access to the
9 groundwater restoration demonstration because it was part
10 of Big Horn Coal's permit file, correct?

11 A. Correct.

12 Q. Did you hear Dr. Kuchanur state that he relied
13 on data outside of Brook's permit application in
14 evaluating his technical adequacy?

15 A. I did.

16 Q. Let's talk briefly about modeling. You did not
17 take the Brook groundwater model and run simulations with
18 it, did you?

19 A. No.

20 Q. So you didn't take information and data in the
21 groundwater restoration demonstration, put it into Brook's
22 model, run that model and see what data comes out?

23 A. No. I don't have any input and output files
24 either. They'd be gargantuan digital files that you'd
25 have to do to do that.

1 Q. So you testified on direct that the numbers
2 would vary wildly if you did that, but you didn't actually
3 conduct that test to see if the numbers varied wildly,
4 correct?

5 A. I don't understand your question. The test of?

6 Q. I may have been imprecise. Let me -- you did
7 not run Brook's groundwater model and get numbers to see
8 if those numbers varied wildly from the numbers in the
9 permit application, right?

10 MS. BOOMGAARDEN: Objection. That's been
11 asked and answered. I believe that Mr. Gerlach's already
12 testified he did not run the groundwater model.

13 CHAIRMAN BAGLEY: Yeah.

14 MR. POPE: Dr. Bagley.

15 CHAIRMAN BAGLEY: I -- we -- we have an
16 expert who testified, and my quote is "vast improvement" if
17 the data were used. And I think as -- we can ask -- his
18 expert opinion can be asked. But we need to finish up the
19 question, you know, and if the answer is he says he didn't
20 run it and can -- so let's not ask the question too many
21 times.

22 MR. POPE: And I apologize, Dr. Bagley.
23 I'm not trying to re-ask a bunch of times. I just, based
24 on the previous answer, I just thought maybe there was a
25 disconnect on Mr. Gerlach's understanding. So I was trying

1 to clarify.

2 CHAIRMAN BAGLEY: Okay.

3 Q. (BY MR. POPE) Give it one last shot,
4 Mr. Gerlach.

5 The quote I wrote down from your direct
6 testimony was that if data from the GRD was added to the
7 groundwater flow model -- groundwater model, excuse me,
8 and that model was run, it would have vastly different
9 results. You did not run the groundwater model to see if
10 there are vastly different results, correct?

11 A. That's correct.

12 Q. Got it. In discussion with Ms. Boomgaarden, you
13 were referred back to Dr. Kuchanur's discussion on whether
14 or not the saturated backfill material in TR-1 is an
15 aquifer. You're aware that aquifer is defined in the coal
16 rules and regulations of DEQ, right?

17 A. Correct.

18 Q. And I don't -- I don't remember if this was
19 asked, so I need to ask it. There are no wells permitted
20 in the saturated backfill material in and around TR-1,
21 correct?

22 A. Not anymore.

23 Q. You also discussed -- and we're going to pull
24 the cross-section up here in just a moment of the area
25 around TR-1. But you testified that the clay seal was

1 going to be broken as a result of mining. But you were
2 here when Dr. Kuchanur explained that when the backfill
3 material was restored, that the -- the discussion with
4 Council Member Flitner, the water will then begin to
5 behave as -- as -- almost as it did before mining,
6 correct?

7 A. I believe I heard something about it. Sometimes
8 I couldn't hear very well. I believe I heard something to
9 that effect.

10 Q. Okay. You discussed sediment ponds, and
11 specifically Sediment Pond 8. A couple of questions about
12 that. You're aware that Brook's mining method will
13 disturb less land than the surface mining method that Big
14 Horn Coal used when it mined in that area, correct?

15 A. Yes.

16 Q. Sort of a technical question here. You
17 testified you're a licensed professional geologist. You
18 would agree with me, though, that only a licensed
19 professional engineer can design a sediment pond in the
20 state of Wyoming, right?

21 A. I would agree.

22 Q. You had some opinions about Brook's hydrologic
23 control plan, and you discussed MP.5.1 -- excuse me, map
24 MP.5.1 with Ms. Boomgaarden. You're aware there's also
25 text inside the mine plan that discusses Brook's

1 hydrologic control model, correct?

2 A. I'm aware.

3 Q. And that text discusses surface drainage and
4 erosion control plan, doesn't it?

5 A. It does.

6 Q. It also discusses sedimentation and wastewater
7 impoundments, right?

8 A. Yeah.

9 Q. It discusses general design criteria and
10 construction standards for those impoundments too, doesn't
11 it?

12 A. Generically, yes.

13 Q. There's a flood control plan in there too,
14 right?

15 A. If I recall, yes.

16 Q. There's also plans for diversions too?

17 A. Yes.

18 Q. There's also a ditch and culvert design in the
19 hydrologic control plan too, right?

20 A. Yes.

21 Q. That hydrologic control plan includes collection
22 ditches and bypass ditches too, right?

23 A. That I don't remember, but I'll take your word
24 for it.

25 Q. Council may not like that, but...

1 The mine plan also includes an impoundment
2 maintenance plan too, right?

3 A. You know, I don't recall seeing that, no.

4 Q. And more directly to the point about potential
5 inflow of water into the TR-1, the mine plan includes a
6 mine pit dewatering plan, correct?

7 A. Yes. I believe it does, uh-huh.

8 Q. If we could, let's go back -- we're going to
9 pull on the screen Big Horn Exhibit 14. I have a few
10 questions for you about that.

11 Mr. Gerlach, as I understand, this is an exhibit
12 that you prepared using a cross-section in the Brook Mine
13 plan, correct?

14 A. Excuse me. That is correct, yeah.

15 Q. Now, you actually on direct described this
16 cross-section identifies certain water areas. I may not
17 be getting the scientific term right there, but water
18 locations in the area around TR-1, right?

19 A. It does.

20 Q. And, in fact, it depicts the elevation of where
21 those areas of water are, right?

22 A. Yes.

23 Q. And you've discussed with Ms. Boomgaarden, based
24 just on this cross-section, a number of things that could
25 happen as Brook removes the saturated backfill and begins

1 to mine, right?

2 A. Yes.

3 Q. And, in fact, you were able to testify that as a
4 result of looking at this cross-section, you could tell
5 what happens to inflows when that backfill material is
6 removed and also it may -- also what may happen when that
7 backfill material is put back into place, right?

8 A. Two questions. The backfill material is
9 removed, and I presume you mean a swath is cut through it,
10 as Mr. -- I'm sorry, Dr. Kuchanur described yesterday,
11 yes.

12 Q. Uh-huh. You're correct. I asked you two
13 questions. I should only ask you one at a time.

14 So the first question was you described what may
15 happen when that saturated backfill material is removed,
16 right?

17 A. Yes.

18 Q. You also testified about some of the potential
19 effects and consequences of when that saturated back -- or
20 when backfill material is placed back into that area,
21 right?

22 A. Correct.

23 Q. You heard Dr. Kuchanur testify that he was able
24 to use this cross-section helping him analyze the probable
25 hydrologic consequences of Brook's mine plan, right?

1 A. I believe I heard that, yes.

2 Q. I have a few questions, Dr. -- excuse me,
3 Mr. Gerlach, about some of the opinions in your expert
4 report. And I -- in attempt to preempt some of the
5 objections about these weren't discussed, this is my only
6 opportunity to ask you these questions.

7 In your expert report, you have some opinions
8 about the potential for subsidence, correct?

9 A. I believe I did put some opinions of that nature
10 in there, yes.

11 Q. In preparing those objections about subsidence,
12 you were aware that Brook has a commitment in its mine
13 plan to develop and implement MSHA ground control plan,
14 right?

15 A. I'm not sure at the time I wrote that expert
16 report if I knew that specific piece of information.

17 Q. But you did hear several of the DEQ witnesses,
18 as well as Mr. Barron, explain that Brook has a commitment
19 in its mine plan to do MSHA ground control plan, right?

20 A. I did.

21 Q. You testified with Ms. Boomgaarden at the
22 beginning about Brook has to identify the water we use as
23 part of its mine plan. You're aware that Section MP.8 of
24 Brook's mine plan discusses its water use, correct?

25 A. Yes.

1 Q. In fact, there's a table in the mine plan that
2 breaks down the water usage in the mine, right?

3 A. Yes.

4 Q. And I apologize. I don't remember if we
5 discussed this, but you -- you reviewed some of the
6 comments and responses between Brook and DEQ?

7 A. Some, yes.

8 Q. You're aware that at least one of the comments
9 in that comment and review process discussed the water
10 usage in the Brook Mine and asked for more detail about
11 that?

12 A. The DEQ asked for more detail?

13 Q. Yes, sir.

14 A. Oh, I don't believe -- there's so many pieces of
15 correspondence back and forth between every human being --

16 Q. Let's do that.

17 A. -- it's hard to say, I think.

18 Q. Fair enough, sir.

19 If we could go to DEQ 34-188. We're going to
20 blow this up for you. We've made it a little bigger on
21 the screen here. This is comment Muk 73 - Round 1. And
22 as we've heard, this is a comment by Dr. Kuchanur. He
23 says, "Mine Plan, Addendum MP-3 Groundwater Model, 73.
24 Please provide a water budget table (in acre-feet per year
25 or cubic-feet per day) showing all the inflows into the

1 model and outflows from the model." Did I read that
2 correctly?

3 A. You did.

4 Q. And below there is a response to that that
5 begins to chart source with inflows and outflows, correct?

6 A. Correct.

7 Q. For the sake of fairness to you, Mr. Gerlach,
8 did you review comment Muk 73 in preparing your
9 objections?

10 A. Well, I think I did. Looks familiar.

11 Q. Let's talk briefly about underground coal fires.
12 I know this is another subject matter you didn't talk
13 about with Ms. Boomgaarden, but it is contained in your
14 expert report, correct?

15 A. It is.

16 Q. You told me that Big Horn Coal, as part of its
17 mining operations, encountered previously unknown
18 underground coal fires, correct?

19 A. Yes.

20 Q. You also told me that Big Horn Coal was able to
21 work with the State of Wyoming to find a remedy for those
22 underground coal mine fires, right?

23 A. What they hoped would be a remedy, yes.

24 Q. As I recall, that remedy was to take and place
25 millions of tons of overburden on top of the area that was

1 on fire, right?

2 A. Correct.

3 Q. And that extinguished the fire?

4 A. For the time.

5 MR. POPE: Give me just one moment,

6 Mr. Gerlach.

7 Thank you, Mr. Gerlach. I don't have any more

8 questions for you.

9 CHAIRMAN BAGLEY: Thank you, Mr. Pope.

10 Mr. Kuhlmann or Mr. LaRock.

11 MR. KUHLMANN: Thank you, Dr. Bagley. I do

12 have a few questions. I'll try to keep them short.

13 CROSS-EXAMINATION

14 Q. (BY MR. KUHLMANN) Mr. Gerlach, I want to talk

15 to you about the groundwater restoration -- restoration

16 demonstration, GRD. I have a question about it. I

17 believe -- did you testify that the groundwater

18 restoration was completed for the Big Horn Mine in 2002?

19 A. It was approved by the State of Wyoming, yes, in

20 August of 2002.

21 Q. Would you say that was when the restoration was

22 completed?

23 A. The actual in-the-field restoration?

24 Q. Yes.

25 A. For all intents and purposes, and certainly

1 enough to satisfy the State of Wyoming, it was complete,
2 yes.

3 Q. Thank you.

4 I believe you testified that there were
5 monitoring wells that were used to collect data that was
6 put in the GRD document?

7 A. Yes.

8 Q. Were some of those monitoring wells in the TR-1
9 area that you were questioned about earlier?

10 A. Yes.

11 Q. Are those monitoring wells still there today?

12 A. Uh-huh.

13 Q. Do you know when the last time those wells were
14 monitored?

15 A. Not off -- not offhand.

16 Q. Would you say that you had -- last date of
17 monitoring was before 2002?

18 A. I'm not certain I could say that. I don't --
19 really don't know. I mean, it's all in the records, I'm
20 sure.

21 Q. Okay. Are you aware that DEQ requires
22 applicants to collect at least one year of recent
23 information for groundwater wells to be considered as
24 baseline data?

25 A. I am aware of that.

1 Q. Would you consider data collected to make the
2 GRD as recent information?

3 A. I'm not sure I understand the question.

4 Q. The -- I'm asking about the data that was
5 collected from monitoring wells that were used for the
6 GRD. Would you consider the data that was collected
7 for -- from those monitoring wells as recent?

8 A. Well, no. It was collected, you know, before we
9 prepared the report and the report's approved August
10 of 2002.

11 Q. Can we reasonably agree that this data is not
12 the one year of recent information that DEQ requires to be
13 collected for baseline data?

14 A. Sure. It's not recent, yeah.

15 Q. I'll ask you to turn to Big Horn Exhibit 15,
16 page -- I believe it was 40. And just to be clear, the
17 page that I'm referring to is BHC 15-040.

18 All right. Mr. Gerlach, I believe you testified
19 about this table from the GRD; is that correct?

20 A. I did.

21 Q. I'd like you to -- do you see the row for
22 Hydrologic Conductivity GPD/FT2?

23 A. I do.

24 Q. And that would be ground -- gallons per --
25 gallons per day over square feet?

1 A. Correct.

2 Q. Could you read the values that appear on that
3 column?

4 A. From left to right, 4.00, 1,182, 0.85, 58, 7,
5 14.25, 930, 1.2, 10.1 and 481.7.

6 Q. Thank you.

7 In all but one of the values you read, was that
8 volume followed by a question mark in the table?

9 A. Correct.

10 Q. For those values where there was a question mark
11 afterwards, could you read the comments that are listed on
12 the comments row?

13 A. Yes.

14 Q. Would you please do so.

15 A. Oh, may I refer to the hard copy in here?

16 Q. Absolutely. If that is easier for you to read,
17 sir. I might be able to help along if you have that table
18 out.

19 A. I do, sir.

20 Q. Under the value that says "1,182?," do you see
21 comments row where it says "saturated thickness
22 questionable"?

23 A. I do.

24 Q. Do you see where it says "unable to measure
25 water level"?

1 A. I do see that text.

2 Q. And then under the value ".85?," do you see in
3 the comments where it says "saturated thickness is
4 questionable"?

5 A. I'm sorry. Say that again.

6 Q. Under the next value, which said ".85?" --

7 A. Yes.

8 Q. -- do you see in the comments row below that
9 where it says "saturated thickness is questionable"?

10 A. Yes.

11 Q. For the next value, "58?," do you see in the
12 comments section that it says "two tests ran; base of
13 spoils not exactly known"?

14 A. Yes.

15 Q. Under the section of the amount for "14.25?," do
16 you see where it says in the comments row "saturated
17 thickness is questionable; base of spoils questionable"?

18 A. Yes.

19 Q. Under the value for "930?," do you see in the
20 comments where it says, "saturated thickness is
21 questionable"?

22 A. I do.

23 Q. And then the next comment from that, where it
24 mentions underneath the "1.2?," says "base of spoils
25 questionable." Do you see that?

1 A. Yes. Uh-huh.

2 Q. Okay. And to speed up the next ones, do you see
3 that the next entry on the comments says "pumped well,
4 well efficiency poor; base of spoils questionable"?

5 A. Yes.

6 Q. And in the next one it says "Observation well;
7 base of spoils questionable"?

8 A. I do.

9 Q. From that table -- oh. Excuse me.
10 Would you consider the pieces of data we
11 mentioned regarding hydrologic conductivity to be
12 questionable based on the comments in the comments row of
13 this table?

14 A. I considered them to be a reasonable, best
15 available estimate of the hydraulic conductivity available
16 for the area and material that was tested.

17 Q. When was this table prepared?

18 A. Well, it was prepared, you know, before August
19 of 2002.

20 Q. Can you identify on that row of hydrologic
21 conductivity what the minimal value of conductivity is?

22 A. Yes.

23 Q. And can you find what the maximum value of
24 conductivity is?

25 A. I believe I could.

1 Q. And I apologize for asking a little bit of math.
2 What is the orders of magnitude variability between
3 those -- the highest and lowest value in that table?

4 A. What are the orders of magnitude -- variability
5 expressed as orders of magnitude?

6 Q. Correct?

7 A. Order of magnitude is a factor of 10. So let's
8 go -- looks like lowest 1.0, .85 times that is 8.5, times
9 10 is 8 -- 8 -- or 85. So there's two orders of
10 magnitude. And, once again, 85 times 10 would be 850.
11 We're getting up to our target here. That's three orders
12 of magnitude. Call it 3.3.

13 Q. To get up to 1,182 --

14 A. Well, let's see. Maybe we should employ a
15 calculator.

16 CHAIRMAN BAGLEY: He did answer the
17 question. He said 3.3 orders of magnitude.

18 MR. KUHLMANN: Okay.

19 CHAIRMAN BAGLEY: Which is about what I get
20 too.

21 MR. KUHLMANN: Okay. Thank you,
22 Dr. Bagley. I guess we don't need a calculator.

23 Q. (BY MR. KUHLMANN) Do you know why the question
24 marks were placed on those values in the hydrologic
25 conductivity?

1 A. I believe I do.

2 Q. Do you know -- can you explain why?

3 A. Well, it's because when the folks were
4 constructing the wells, they didn't quite know -- they
5 weren't quite -- it's kind of a silly thing -- weren't
6 quite absolutely certain, to the perfection that
7 geologists, who are used to doing coring for coal quality,
8 where a few inches can make a big difference, they didn't
9 quite know or feel confident in where they hit base of the
10 soils and went into the native, per the previous
11 cross-section, shale in the strata. Sometimes it's --
12 particularly if you get young people that haven't done it
13 many times, or a driller that's not used to drilling
14 spoils, it just wasn't quite -- usually you can detect --
15 if you're careful, know what to look for and have some
16 experience using the right kind of drill bit, by, you can
17 detect within a couple, three feet where you're getting
18 out of the floor of the spoils and into the native strata
19 beneath the spoils, where spoils is equivalent, in
20 verbiage here, to backfill.

21 Q. So would you describe the placement of the
22 question marks on that table as indicating uncertainty in
23 those numbers?

24 A. A minor amount of uncertainty.

25 Q. Would it be reasonable to use values with the

1 uncertainty indicated there, and also that have a large
2 order of unexplained variability to provide reliable
3 modeling estimates?

4 A. Would you repeat that, please?

5 Q. Yes. I'd be happy to.

6 In your opinion, is it reasonable to use values
7 that are documented as having uncertainty, those question
8 marks, and have a large order of unexplained variability
9 in order to provide reliable modeling results?

10 A. There is a large variability here. Is it
11 uncertain as to why there is a large amount of
12 variability? Not necessarily. It's backfill. It
13 consists of everything that they dug up. And here they
14 were digging in the confluence of two perennial streams.
15 The natural stream -- so they dug up clay. They dug up
16 silt. They dug up sand. They dug up gravel. And then
17 they dug up -- finally, when they got -- might have been a
18 little overburden above the Dietz and the upper Monarch
19 and lower Monarch, that's where the coal was there,
20 there's testimony to, most of the core. You know, they
21 might have hit a little shale, so that was all mixed in
22 too.

23 And so, yes, it is highly variable. Highly
24 variable composition. So that -- no, that was -- the
25 expert -- the -- it doesn't disturb or surprise me at all

1 that there was a large variability. Okay?

2 Q. Okay.

3 A. Did that answer your question?

4 Q. I guess to some extent. Is it reasonable to use
5 data that has such high variability to -- to provide
6 reliable modeling estimates?

7 A. Better than nothing. These are real tests. You
8 can see the duration of them. Oh, boy. Let's see here.
9 Length of test.

10 Q. Is there another section of the table you're
11 referring to?

12 A. Yeah.

13 Q. We'll scroll to that.

14 A. A couple above. Yeah, length of test. Hours,
15 that's 46. You know, going into a groundwater model to
16 deal with your concern that, you know, am I using reliable
17 data to come up with reliable results, rather than just
18 throw up your hands and say, well, gee, it's so variable,
19 so old, we just -- we just won't do anything. I mean, why
20 not model it with a range or a median value or an average
21 value, or, you know, don't like all the question marks,
22 pick the 4.0. I'm sorry. That's longest at the longest
23 test, 46 hours. I drilled those wells. I felt confident
24 when I hit the bottom of it. That was on the --

25 THE REPORTER: I'm sorry. I can't hear.

1 Never mind. Go ahead.

2 Q. (BY MR. KUHLMANN) So -- so based on what your
3 testimony was, if you were concerned about variability of
4 numbers that you had available to you, you'd be
5 comfortable with using just one? That you had less --
6 that -- that you were more comfortable with?

7 A. I might employ the advice of a mathematician,
8 whatever. Pick a value, describe how you picked it, make
9 that description available in your report to the public
10 and run with it. But pick a range. If you don't want to
11 pick one value, pick a 25th and 75th percentile values.

12 Q. Do you know if the groundwater model for the
13 Brook Mine permit application had a value used for
14 hydrologic connectivity?

15 A. I'm sorry. Say that again.

16 Q. Do you know if the Brook Mine permit
17 application's groundwater model had a value in it for
18 hydrologic connectivity?

19 A. It has a value range of values for each layer.

20 Q. Okay.

21 A. That's well described in the -- I think -- once
22 in the body of the mine plan and in the addendum that
23 houses the model.

24 Q. Thank you.

25 A. Yes.

1 Q. One last -- well, just a couple last questions.
2 Do you know how long it took for the backfill in the TR-1
3 area to resaturate?

4 A. That is -- that was one of our major points that
5 we wanted to make real clear when we wrote the GRD, the
6 groundwater restoration demonstration. Off top of my
7 head, I can't remember what I wrote in 2002, but it's in
8 there. We can -- we can find that.

9 Q. Okay. Let's go ahead and turn to Big Horn
10 Exhibit 15, page 15-009. Scroll down a little. Stop
11 about here.

12 Mr. Gerlach, do you see anything on this section
13 of the page that indicates how long it took the backfill
14 in the TR-1 area to resaturate? That's okay.

15 A. Yeah.

16 Q. Do you see it?

17 A. I was just trying to read the whole thing so we
18 don't get things out of context.

19 Q. I understand that.

20 A. And your next question, I guess?

21 Q. I understand that.

22 Can you tell us how long it took the backfill in
23 the TR-1 area to refill -- to resaturate?

24 A. The report says 23 years. For -- yeah, 23
25 years.

1 Q. Thank you.

2 Moving to a slightly different question.

3 your review of -- your review of the permit application
4 and testimony focused on only the TR-1 area; is that
5 correct?

6 A. Can you repeat that, please?

7 Q. Your review of the permit application and
8 testimony here today is only focused on the TR-1 area,
9 correct?

10 A. So far today, yes.

11 Q. Did you review the other data that was used in
12 characterizing the baseline of the entire proposed permit
13 boundary?

14 A. The other baseline presented in the Brook permit
15 application?

16 Q. Yes. For the entire permit area.

17 A. I did.

18 Q. Do the opinions that you presented apply only to
19 the TR-1 area?

20 A. Those we've been discussing today, yes.

21 MR. KUHLMANN: Okay. Thank you,
22 Mr. Gerlach. That is my last question.

23 CHAIRMAN BAGLEY: Thank you.

24 Council have any questions?

25 Deb?

1 COUNCIL MEMBER BAUMER: I guess I do.

2 EXAMINATION

3 Q. (BY COUNCIL MEMBER BAUMER) Just can you help me
4 understand why the 2002 or 15-year-old information would
5 be reliable for Brook Mine to use to do their modeling?

6 A. I believe I can, yes.

7 Q. Okay. Help me understand that.

8 A. All right. Now you got to read the whole thing.
9 Some people that's --

10 THE REPORTER: I can't hear you, sir.

11 A. Okay. The Exhibit 15, the Big Horn Coal
12 groundwater restoration demonstration, what it shows
13 is that hydrographs, graphs of groundwater elevations,
14 over time it shows that by the time we get this thing
15 written, those hydrographs show -- and there's a lot of
16 texts of the type I'm speaking -- that the water level
17 elevations -- the groundwater elevations in the backfill
18 monitor wells had become isotonic. Oh, I'm sorry. They
19 become kind of steady state. And then they move up and
20 down. When they got to that point in phase with the river
21 stages, in the springtime it was high; August, September,
22 it's way down. And they're doing that with the river.
23 That tells me they're pretty much in steady state with
24 whatever that old river's doing. And I suspect that to be
25 something of perpetuity until something happens to the

1 river.

2 Q. (BY COUNCIL MEMBER BAUMER) okay.

3 A. Did that help?

4 Q. I think so.

5 A. So, I mean, how are things -- then you're left
6 asking, well, are things a lot different than they were in
7 2002? Well -- well -- I mean, not necessarily. We have
8 good years and bad years in our climatic cycles. Sheridan
9 County last year was -- the Tongue River took a beating
10 for a while, then even clear up where I live, I couldn't
11 irrigate with water that automatically -- or ultimately
12 makes it to the Tongue River.

13 The state engineer last summer -- I'm
14 probably -- if you're interested.

15 COUNCIL MEMBER BAUMER: I'm okay. Thank
16 you.

17 Thank you, Mr. Chairman.

18 COUNCIL MEMBER AGOPIAN: No questions.

19 CHAIRMAN BAGLEY: Meghan?

20 COUNCIL MEMBER LALLY: I don't think so
21 right now.

22 CHAIRMAN BAGLEY: I have a couple of
23 questions, Mr. Gerlach.

24 EXAMINATION

25 Q. (BY CHAIRMAN BAGLEY) I wanted to follow up on

1 the question Mr. Kuhlmann asked. Today we focused on the
2 TR-1 area. I wanted to ask your opinion on how the
3 groundwater modeling that was done on the rest of the site
4 that was not down right on the Tongue River and TR-1 area.
5 I didn't see any comment on that. I'd just seen comments
6 in the TR-1 area.

7 A. So you're asking me to comment, sir, on --

8 Q. Yeah. Do you have any comment on the
9 groundwater modeling that was done on the rest of the site
10 and not just the TR-1 area?

11 A. I see. I didn't find any fault with the
12 modeling of the coal seams by Brook outside the TR-1 area.
13 I didn't have any problem with the TR-1 area either. It's
14 just they forgot there's all this -- this 70 to 85 feet of
15 saturated backfill with wells that documented that once
16 they cleared 37 gals a minute. Forgot to throw that in
17 the model. No, I didn't have any problem with the coal
18 modeling anywhere, sir.

19 Q. Okay. Thank you.

20 So then the TR-1 area -- and I think Councilman
21 Flitner brought this up the other day, a really good
22 question, which was -- I think you've kind of got at this
23 too. Well, I'm looking at that cross-section that we've
24 been looking at where it shows a -- the saturation and
25 then the coal seam and then we're going to put trench down

1 right through that, right through the shale area?

2 A. Yes, sir.

3 Q. And Mr. Flitner asked this yesterday. Okay. So
4 we've broken that shale area, and today I think you kind
5 of are suggesting that once we break that, the water, you
6 know, in essence, can almost pour into the bottom and into
7 the coal seams. Is that -- is kind of what you're
8 indicating?

9 A. It is, sir. The permit document does not assess
10 it whatsoever. Doesn't discuss the subject, but it's a
11 law of physics. You got one head clear up here in the
12 backfill running out, and remember the two little blue --

13 Q. Uh-huh.

14 A. -- with the water -- you can barely read it?
15 And the monitoring wells in the Carney and Masters is way
16 down here. Water's going to run from uphill to downhill,
17 high head to low head. The only question is how effective
18 will the new future backfill of Brook Mine, as it fills up
19 its base slot, what we call the trench slot, how effective
20 will it be? What will its permeability be?

21 Q. That brings me to my next question. Well, just
22 a -- a comment I had is, as I heard Councilman Flitner's
23 question, and then I listen to you, I thought basically
24 the same thing you did, sounds like folks are going to
25 have to have some pumps running while they're mining this,

1 but that's -- that's an operation issue.

2 I'm thinking now when we're done. They're
3 done -- not we. When they're done mining, and they pulled
4 the pullout, you mentioned sort of left these drifts, sort
5 of like holes, and I'm getting the idea that water's going
6 to go down there and fill them up. My question is, once
7 they're full, do you expect a lot of groundwater movement
8 after that?

9 A. Again, the -- there's just absolutely no
10 assessment of that. So my answer to you is based out of
11 experience, it still carries that shadow of speculation.
12 There's nothing in the permit that discusses the subject
13 that we are --

14 Q. So in your --

15 A. -- discussing now.

16 Q. In your opinion, where do you -- based on the --
17 your looking at this, where do you think movement could
18 occur the fastest? Once the coal -- the open holes, the
19 drifts, are filled up with water and everything backfilled
20 and everything else, where do you think movement could
21 occur the fastest in this geology?

22 A. You know, occur the fastest in the Carney coal
23 seam, the target of the TR-1 mining, around the perimeter
24 or outer -- their whole outer panel shell. All the ribs
25 and pillars that are left in the center, between all those

1 tunnels, probably aren't very effective in absorbing much
2 water. So that will be the part that will fill up quick.

3 Q. Okay.

4 A. But you've got all that wetted perimeter. What
5 is that panel? About half mile?

6 Q. Uh-huh.

7 A. North-south?

8 Q. Right.

9 A. So you've got half mile, a quarter mile, half
10 mile, quarter mile, that outer wetted perimeter in the
11 coal, down 150, 175 feet deep, will forever continue to
12 absorb water. What will that rate be? Well, if you use
13 the -- the Brook model, I believe they assign, what is it,
14 .7 or .8 foot per day of connectivity for the coal?

15 Q. Uh-huh.

16 A. Whereby that makes 60 -- they predicted for
17 years one and two like 60, 75 gallons a minute, just
18 Carney coal in the TR-1 area.

19 Q. So I guess now my next question is, I've heard
20 concern about wells drying up. But if I got a well into
21 this coal seam downgradient from where they put this in,
22 and they're done mining and they filled it back up, will I
23 expect to see a well dry up?

24 A. Well, not too far downgradient. It might become
25 artesian.

1 Q. Right. So -- but it won't dry up. So may have
2 an artesian well where you didn't before.

3 A. Or might be fresh river water that's going
4 through for a ways, but...

5 CHAIRMAN BAGLEY: That was all my
6 questions. Thank you.

7 THE WITNESS: Thank you.

8 COUNCIL MEMBER LALLY: I have some more
9 questions.

10 CHAIRMAN BAGLEY: Oh, we have a question.

11 COUNCIL MEMBER LALLY: Sorry. This brought
12 up a thought.

13 EXAMINATION

14 Q. (BY COUNCIL MEMBER LALLY) Would it be possible
15 to reclaim that in a way with low permeability? Or when
16 you reclaim, does it automatically give it a fairly high
17 permeability?

18 A. To reclaim the backfill?

19 Q. To reclaim the trench.

20 A. Excellent question. Just like your comment
21 yesterday.

22 Well, yes. You know, the DEQ has insisted upon
23 and -- well, I shouldn't get into -- but applying
24 especially low permeable materials, usually 2 feet
25 equivalent to 10 to the negative 7 -- 7 centimeters per

1 second of hydro connectivity -- hydrologic connectivity,
2 is a typical -- for mining valley floors, they're trying
3 to restore AVFs. So, yes, it could be done. It could be
4 done. And that's a really good point.

5 So what I would recommend to the council is that
6 take a range. Get that table -- we can take a median
7 value or average value or pick the one without the
8 question mark of the hydraulic conductivity of the
9 resisted backfill that's accepted by the State of Wyoming,
10 August 2002, re-run that model and use that same
11 conductivity for the new spoils that will go back into the
12 trench of TR-1. Okay?

13 Run that model and see -- and keep the same
14 hydraulic conductivity that the model has now for the
15 Carney coal, which is going to be posing a big head on
16 that Carney coal because the head's really the Tongue
17 River, and see how much water loss that is. See how much
18 water loss. I'm not worried about the coal. I'm not
19 worried about the coal in any groundwater model. It's
20 insignificant when you've got this 70 to 90 feet of -- 70
21 to 85 feet saturation right next to two large ephemeral
22 streams. That's significant.

23 See what your model tells you in that, and that
24 will help answer your question do we need some low
25 permeable backfill in that trench. Could have DEQ

1 approving mine permit application has a long history of
2 requiring low permeable backfill for certain unique
3 hydrologic circumstances.

4 COUNCIL MEMBER LALLY: Thank you.

5 CHAIRMAN BAGLEY: Any other questions from
6 council members?

7 Ms. Boomgaarden.

8 MS. BOOMGAARDEN: Thank you, Dr. Bagley.

9 Thank you, Mr. Gerlach. I just have a few
10 questions for you before we wrap up.

11 REDIRECT EXAMINATION

12 Q. (BY MS. BOOMGAARDEN) Mr. Pope asked you if you
13 were aware that -- or if you were -- if you heard
14 Dr. Kuchanur testify that they had used other evidence in
15 the groundwater model, and you responded that you did know
16 that they had used other evidence. Is that correct?

17 A. That is correct.

18 Q. Did you find any evidence that Dr. Kuchanur used
19 data from the GRD in the groundwater model?

20 A. There is no evidence of that.

21 Q. Thank you.

22 And you were asked about, and shown by Mr. Pope,
23 I believe, the definition of aquifer in the Land Quality
24 Division Rules and Regulations, or asked if you were aware
25 that there was a definition of aquifer in the Land Quality

1 Division rules and regulations. Do you know whether there
2 have ever been groundwater wells permitted in the TR-1
3 backfill?

4 A. Not specifically, but back then the state
5 engineer used to require that you permitted even
6 monitoring wells. They quit that in like 2003 or '5,
7 because it's not a beneficial use. You're not
8 consistently using be -- never mind.

9 So some of those may have been pertinent. They
10 may have had water rights. Those old monitoring wells are
11 there.

12 Q. So at that time, if they were permitted for a
13 specific use, that would have constituted an aquifer; is
14 that correct?

15 A. Yes.

16 Q. Okay. Thank you.

17 Mr. Kuhlmann asked you to refer to Table 2 in
18 the GRD, and that was a table -- there was quite a lot of
19 discussion about the hydraulic conductivity data. Do you
20 recall that?

21 A. I do.

22 Q. And I just want to make sure that I understand
23 that even with data that included the question marks that
24 were noted, DEQ reviewed and ultimately approved that
25 data; is that correct?

1 A. Yes.

2 Q. In your opinion, is it preferable to use data
3 with high variability rather than no data at all?

4 A. Well, yes. If you understand why the -- there
5 is high variability, sure.

6 Q. Okay. And Councilman Baumer asked you about the
7 reliability of the hydrographs, excuse me, and you
8 explained about the steady state of the river in this
9 location. The steady state of the groundwater in
10 relationship to the river. Do you recall that?

11 A. I do.

12 Q. Is this characteristic of steady state between
13 the groundwater and river unique to this TR-1 area within
14 Brook's mine permit application?

15 A. Well, I can't answer that. I mean, it's -- it's
16 best demonstrated here. If they had some alluvial wells,
17 I would expect to see -- the Tongue River alluvial wells?

18 Q. Yes.

19 A. I would expect to see exactly the same.

20 Q. So in your professional opinion, does the lack
21 of data analyzed in this TR-1 area present a unique risk
22 of hydrologic damage?

23 A. Well, I'm sorry. Would you repeat that?

24 Q. Absolutely. Do you believe that the lack of
25 data that we've been discussing in the TR-1 area, given

1 this unique steady state between the groundwater and the
2 river, if that isn't sufficiently analyzed, does that
3 present a unique risk of hydrologic damage?

4 A. It does.

5 MS. BOOMGAARDEN: I have no further
6 questions. Thank you.

7 CHAIRMAN BAGLEY: All right. Thank you.

8 Let us take 10 minutes break, and we will discuss
9 how much further we're going to go tonight, partly during
10 that break, and we'll have answers.

11 (Hearing proceedings recessed

12 5:43 p.m. to 6:00 p.m.)

13 CHAIRMAN BAGLEY: All right. So we will
14 begin with Ms. Anderson. And for those who are wondering,
15 our expectation we'll be finished tonight by 7:00, and we
16 will do a direct. Will not do any cross on this witness
17 this evening. And we will start tomorrow morning at 8:30.
18 So just for folks who are preparing when they may get a
19 chance to eat. Although people have been eating my donuts.
20 So they are available.

21 MR. SUTPHIN: Thank you, Chairman Bagley.
22 They were delicious.

23 CHAIRMAN BAGLEY: Good.

24 Ms. Anderson, please call your first witness.

25 MR. ANDERSON: Thank you, Dr. Bagley.

1 Mr. Chairman.

2 Again, I'm Shannon Anderson with Powder River
3 Basin Resource Council, and I would like to call
4 Mr. John Buyok to the stand, please.

5 MR. SUTPHIN: Mr. Chairman.

6 CHAIRMAN BAGLEY: Yes.

7 MR. SUTPHIN: Per your earlier request that
8 we withhold our objections to witnesses until said
9 witnesses were called, I do have an objection to this
10 witness. But before we get to that, I may have just missed
11 it, but I am not so sure procedurally that Big Horn Coal
12 has rested their case.

13 CHAIRMAN BAGLEY: Oh, gee. Thank you very
14 much.

15 I'm sorry. Are you done with witnesses? My
16 mistake. You're correct.

17 MS. BOOMGAARDEN: Thank you, Dr. Bagley and
18 Mr. Sutphin for watching out for our best interests, and,
19 yes, we rest our case.

20 CHAIRMAN BAGLEY: Thank you.

21 All right. Now, you can proceed with your
22 objection.

23 MR. SUTPHIN: Thank you, Dr. Bagley.

24 Brook Mine objects to the calling of
25 Mr. John Buyok, because as this council is already aware,

1 Mr. Buyok, although he did submit an objection letter to
2 the Department of Environmental Quality, Mr. Buyok did not,
3 in fact, request a contested case hearing before this
4 council, and per council's previous order, that means that
5 he is not entitled to a contested case.

6 Furthermore, Mr. Buyok did not contribute to or
7 assist with the drafting of Powder River Basin Resource
8 Council's objection letter, and, therefore, cannot add
9 anything in the way of testimony that would support that
10 objection letter.

11 Oh. And just so that the record is clear, we are
12 making this objection because we believe that these are
13 valid and legal bases upon which to exclude Mr. John Buyok
14 from testifying, but we are in no way, shape or form trying
15 to silence the Powder River Basin Resource Council in this
16 hearing. Thank you, Mr. Chairman.

17 CHAIRMAN BAGLEY: Thank you for your
18 objection.

19 I consider Mr. Buyok a -- not a party, but a
20 witness that's been called by a party, and so I will allow
21 him to serve as a witness.

22 MR. SUTPHIN: I understand your decision
23 Mr. Bagley -- Dr. Bagley, thank you.

24 MS. ANDERSON: Thank you. I had a good
25 response. I don't have to bring it. So I appreciate that.

1 Please, I call Mr. John Buyok.

2 (Witness sworn.)

3 JOHN PAUL BUYOK,

4 called for examination by PRBRC, being first duly sworn,

5 testified as follows:

6 DIRECT EXAMINATION

7 Q. (BY MS. ANDERSON) Mr. Buyok, could you please
8 say and spell your name for the record.

9 A. It's John Paul Buyok, B-U-Y-O-K.

10 Q. Do you mind if I call you John?

11 A. That's fine.

12 Q. I know this is kind of intimidating, so I want
13 to make sure this is as easy for you as possible to be
14 here today to provide your opinions and information to the
15 council.

16 John, could you tell us your address and explain
17 a little bit about where you live.

18 A. I live at 86 Monarch Road, Ranchester, Wyoming,
19 and my house is up on the screen.

20 Q. Okay. How long have you lived there?

21 A. In this particular house we built in 2001, but
22 I've lived there for about 33 years off and on. My
23 family -- there's another small house across the road on
24 the other side of my house. My grandparents moved into
25 that in 1919. So been there almost a hundred years.

1 Q. Yeah. John, does this picture look familiar to
2 you?

3 A. Yes. That shows a portion of our property and
4 our neighbor's property.

5 Q. And you have a relationship with the Sheridan
6 Community Land Trust, right?

7 A. Yes. Uh-huh. We have a conservation easement
8 with the Land Trust.

9 Q. Are you aware this is a photo that they took and
10 provided?

11 A. Yeah. This was taken originally as part of the
12 exhibits for our land trust.

13 Q. Okay. And yet could you just tell a little
14 about the photo and point some things out in it.

15 A. Our house sits right about here in this
16 photograph. My sister's house is right here. And most of
17 this land back this way, this is part of our ranch.

18 Mr. Bocek, who will be testifying later -- his
19 family's property is here. His parents' property. He
20 lives just off the -- the picture on this side. This is
21 part of the Fishers' property here. And this is Brooke
22 Collins' house right here. She's going to be testifying
23 later. These two fields here are the -- this field is
24 where Brook's proposed labs are going to be, and this
25 field is where their carbon fiber plant's supposed to be.

1 And this is the port of entry at the top of the
2 photograph. And the interstate runs right through here.

3 Q. Okay. Great. Thank you.

4 I'm going to pull up DEQ Exhibit 12, page 145.
5 John, this is just a picture from the mine plan. I think
6 you're familiar with it, right?

7 A. Yes. Uh-huh.

8 Q. Can you tell us a little bit about this map in
9 relationship to where you live and anything you want to
10 tell the council about this map and where you live?

11 A. This map shows the Brook mining area, starting
12 with the TR-1 area that's been talked about. And working
13 their way along this way on up towards Ranchester. Our
14 house sits right here -- or, excuse me, right here.
15 Sister's house sits right here. And these other markings
16 are the old historic mine -- mining areas. This was the
17 Monarch Number 1 Mine. This was the Monarch 45 Mine.
18 This is the new Monarch Mine and Acme Mine. Dietz Mine's
19 back here. More Acme Mine here.

20 Q. Okay. Great. John, would you like to tell the
21 council anything else about why you live where you live?

22 A. Well, it's a really nice area. We really like
23 it. It's scenic. It's got a lot of wildlife resources.
24 That's one of the reasons we put it in the land trust to
25 begin with, is we want to preserve the wildlife habitat in

1 that area. My grandparents moved there in, like I said,
2 1919, and started leasing the house -- field house from
3 the coal company at that time. My -- at the time my
4 granddad moved into that house, all those open fields
5 around our house in that photograph were heavily wooded.
6 And my granddad cleared all those with a horse -- a team
7 of horses and an ax. When he had enough land cleared to
8 make hay for cows through the winter, he started to run a
9 dairy farm there and provided milk and cream and butter to
10 families in the town of Monarch, which used to sit about
11 here and the town of Kleenburn, right in here.

12 So we've been there for a hundred years, and
13 we're in there for the long haul. A lot of our neighbors
14 are -- are kind of cutting and running right now, if they
15 can, because they know if this mine permit's approved,
16 their property value's going to take a big drop. But
17 we're planning on sticking in and holding on. But we're a
18 little concerned that if these people are irresponsible,
19 they can force us out.

20 Q. Yeah. Thanks, John.

21 So to summarize, I think I heard you say this
22 place is really special to you.

23 A. Definitely.

24 Q. Okay. Before we get too much further, just for
25 transparency sake, at various times I think before this

1 hearing I represented to some of the other parties that
2 you wouldn't be testifying. And you and I have had
3 various conversations about whether or not you wanted to
4 testify at this hearing, right?

5 A. Yes, we did.

6 Q. Why have you changed your mind and why are you
7 here today?

8 A. Well, Brook Mine had Niles Veal call me and tell
9 me that he wanted me to -- to come in for a deposition.
10 And then two days later, Holland & Hart said I had to come
11 in for a deposition, so I decided if they wanted me to
12 testify that bad, I will.

13 Q. Okay. Thanks, John.

14 You filed an objection letter to the permit
15 application back in January, right?

16 A. Yes, I did.

17 Q. Okay. This is our Exhibit 5. And it was also,
18 for the record, attached to our petition for this council
19 and incorporated by reference within that petition. But
20 is this an accurate rendering of your letter?

21 A. Yes, it is.

22 Q. Okay. Could you identify who it's sent to?

23 A. Mr. Kyle Wendtland.

24 Q. Okay. Why did you send it to him?

25 A. The notice we got in the newspaper and by mail

1 said that we had to submit our comments to Mr. Wendtland.

2 Q. Okay. Did you request any informal conference
3 with the DEQ to address your concerns?

4 A. Yes, I did.

5 Q. Was that informal conference granted?

6 A. No.

7 Q. Okay. So that's why you're here today?

8 A. Yes.

9 Q. This is the only opportunity you've had so far
10 to raise your concerns with the Department or any decision
11 makers?

12 A. That's true.

13 Q. Okay. So I'd like to talk a little bit about
14 your objection letter. And in it you raise an issue about
15 adjudicated versus permitted wells?

16 A. Yes.

17 Q. Can you tell me a little bit about that
18 objection and why you raised it?

19 A. That was very important to me because most of
20 our house wells in that area are not adjudicated under
21 state law. So when there was a -- in the permit documents
22 they would only be responsible for dealing with those
23 problems with adjudicated wells, that leaves most of us
24 out.

25 Q. Yeah. As a landowner, do you consider the

1 ability to get water for your home a major issue?

2 A. It's a big problem for us. We have -- my sister
3 and I, we each have a well that's completed in one of the
4 Carney seams. And when we were getting ready to build the
5 new house we originally wanted to build up on this hill
6 above the river, but we drilled down to a thousand feet at
7 that point and couldn't find any aquifers in that
8 particular area. There was no water available there at
9 all.

10 So then we decided we would try to drill a well
11 further on down where our house is now, and we drilled
12 down to the thousand feet there again, and the only
13 aquifer we could find was that one Carney seam. And that
14 Carney seam has really bad water, but -- you know, we have
15 to filter it, then we have to put it through a water
16 softener system and then we have to put it through a
17 reverse osmosis system to use it. But if -- if that coal
18 seam which the mine, in their mine plan says -- or if
19 that -- that coal seam that our well is completed in,
20 which the mining company in the mine plan says will be
21 partially dewatered, is dewatered any more, we're going to
22 have problems with our house well. The reason I'm sure
23 that we're going to have problems with our house well and
24 my sister's house well is because back in the dry period,
25 back in the early 2000s, those wells almost went dry. We

1 were sucking sediment out of the bottom of the well. Our
2 well is set just below the bottom of that coal seam. So
3 if -- if those wells go dry, we are pretty much out of
4 luck. We're down to hauling water.

5 Q. Yeah. Were you here -- I know you've been in
6 and out a little bit this week because I'm assuming you
7 have other things to do besides be here, but were you here
8 for the testimony from the DEQ that they consider this
9 adjudicated versus permitted wells a minor technical
10 issue?

11 A. Yes, I was.

12 Q. So, again, as a landowner, do you see this as a
13 minor issue?

14 A. I thought it was pretty major for us, as far as
15 the impacts to us.

16 Q. Yeah. All right. Let's see.

17 Is there anything else you want to highlight
18 from your objection letter, concerns that you've raised
19 about the permit?

20 A. I've raised a question because I thought that
21 the maps that were shown showed that our property was
22 further within the half-mile boundary outside of the
23 permit -- the permit boundary. But after my deposition
24 Mr. Barron showed me a more detailed map. And as it turns
25 out, our house well is about 20 feet outside the half-mile

1 boundary, and our house is about 40 feet outside the
2 boundary. So I guess that kind of leaves us out of a lot
3 of legal remedies we would have as far as notification and
4 requiring pre-blast survey and things like that. So that
5 concerns me a little bit.

6 Q. Yeah. So, John, I should clarify a little bit
7 with you. You have some background and experience with
8 coal mines, right?

9 A. Yes.

10 Q. And would you be a consultant to the industry?

11 A. Yeah. I'm a professional engineer. And over
12 the years I think I've worked for every mine in Gillette
13 and Wright area, except for North Antelope. I've done
14 work for Spring Creek Coal and Big Horn Coal in this area.
15 I've done some work for Black Butte down in Rock Springs.
16 I've also done some work for Dave Johnston in Glenrock.
17 So I've seen a lot of different mines. Worked for a lot
18 of different mines.

19 Q. Yeah. Did you spend quote a bit of time looking
20 at the permit application?

21 A. Yeah. I think I've probably spent hundreds of
22 hours. I've gone through it. I've tried to read every
23 bit of it I could.

24 Q. I've always appreciated your understanding of it
25 when we've had conversations.

1 Is there anything else in your objection letter
2 you want to particularly highlight?

3 A. I would also have some concerns about the
4 effects -- possible effects of blasting. That previous
5 map that was up shows that our house is just not very far
6 away from some of the old mines.

7 Q. Uh-huh.

8 A. The Monarch 45 Mine and the old Monarch, excuse
9 me. And we have subsidence going on, you know,
10 continually now. We have new subsidence holes opening up.
11 I'm concerned that little more vibration from blasting
12 could cause more of those things to open up. If it is,
13 it's a -- it's definitely a safety hazard for us. And
14 it's also a safety hazard for a lot of our people that we
15 have out there. As part of our ranch, we have a walk-in
16 agreement with Game & Fish Department, and so we have
17 people out there hunting all the time. It's open all
18 year-round for prairie dog hunting and then other hunting
19 during the other seasons.

20 We also -- since we have our property open for
21 public access for hunting, we thought it was only fair to
22 let other people use it also. So we have a lot of people
23 that come out there and walk their dogs or cross-country
24 ski, bicycle ride, or just things like that. So we're
25 little concerned about safety of those people too. And

1 it's gotten to be really popular. We have hundreds of
2 people out there during the year. And we really hate to
3 have to shut it down if it became too unsafe to have
4 people there.

5 This is a picture that I took of subsidence
6 that's been slowly subsiding. Just -- this happens to be
7 just right across our fence line from our neighbors up
8 above my sister's house. I took this about two or three
9 weeks ago and shows how it's slowly moving, slowly
10 subsiding some more.

11 When we were there, I took the -- our experts
12 around this morning and showed them some of the subsidence
13 in the area. And when we got there, since I had been
14 there two weeks ago, there's another crack that's opened
15 up about 4 feet outside the perimeter of this. And it's
16 about to subside a little more -- or a lot more if it goes
17 at once.

18 Q. Yeah. So just for the benefit of kind of the
19 scale of this, you see kind of a little tan bump there in
20 the corner. Is that your dog?

21 A. Yeah, that's my dog.

22 Q. Okay.

23 A. He's looking for a rabbit down in there.

24 Q. Yeah. Could you tell us a little bit about this
25 photo?

1 A. This is just kind of a -- this is right along
2 our fence line also with our neighbor. These are some old
3 stabilized pits that have not been reclaimed. You can see
4 there's four of them in a line across here. And that's
5 what a lot of this country looked like before the DEQ and
6 the Soil Conservation Service started to reclaim this
7 area. There were long lines of pits like this that
8 followed the whole mine slopes.

9 Q. And I should have, for the record, the previous
10 picture we were talking about was our Exhibit 80. And
11 this one is Exhibit 81. And I also have up here
12 Exhibit 82. Is there anything you'd like to say about
13 this photo?

14 A. This is generally up in the same area. Just
15 shows another subsidence pit that's been slowly dropping
16 over the last few years. And it looks like it's going to
17 go fairly soon too with all the moisture we've had this
18 spring.

19 Q. Yeah. So when you're out there on the land, you
20 see the subsidence. You know what it's like. You've seen
21 it maybe years after.

22 A. Pardon me?

23 Q. Years after mining?

24 A. Yes.

25 Q. Yeah.

1 A. This area where the active subsidence is going
2 on now was mined -- I can't tell exactly because we don't
3 have the mine maps for the earlier old Monarch Mine, but
4 this area was mined somewhere between 95 and 110 years
5 ago.

6 Q. And it's still subsiding?

7 A. Yes.

8 Q. And do you have any concerns about the -- you
9 talked a little about this, but specifically do you have
10 any concerns about the new mine coming in and what that
11 will do to the historic issues that you're still
12 experiencing?

13 A. I'm just concerned about the vibration. One of
14 the new trenches that's going to be opened up isn't very
15 far away across the valley. It's, you know, close to half
16 a mile away from -- well, maybe a little more than that.
17 Maybe three-quarters of a mile away from this area. And
18 the alluvium in the Tongue River Valley transmits
19 vibrations very well. So I'm afraid that even if the
20 blasting is relatively light, like Mr. Emme says, there's
21 going to be vibrations that cause more subsidence on north
22 side of the river.

23 Q. I'm going to pull up our Exhibit 83. Are you
24 familiar with this map at all? You and I didn't talk
25 about this, so -- if not, that's okay.

1 Do you know the term "walk-in area"?

2 A. Yeah. Walk-in area is a program the Game & Fish
3 has where they have people -- oh, I see what my problem is
4 in understanding this. Anyway, they lease the land from
5 the landowner for a nominal fee, and the landowner allows
6 access to anybody at any time for hunting during the year.
7 The reason I couldn't figure out what this was is this
8 particular area right here is our walk-in area. But our
9 neighbor has a walk-in area right here, a little piece
10 that -- that abuts ours.

11 Q. Okay. Do you have any experience with coal
12 fires in the area?

13 A. Yes. There's been several coal fires in the
14 area. In fact, if you could put that one back --

15 Q. Oh, sure. Yeah. Sorry.

16 A. In fact, there is one going on right here right
17 now. It's just north of our property boundary.

18 Q. Okay.

19 A. It's -- it's sort of under control. They're
20 easy to find in the wintertime. This particular one, if
21 you happen to go out there when there's snow on the
22 ground, the ground would all be white except for about
23 10-foot-diameter circle where the grass is still green and
24 everything's warm. It vents. You can see the vent coming
25 out in the wintertime. Most of the time you can't see the

1 smoke or steam or anything rising out of the hole.

2 Q. Is there anything else -- I know that we've had
3 some conversations about maybe the lack of clarity in the
4 mine plan. Is that a concern that you have?

5 A. Yeah. It seems like everything's fairly sketchy
6 in the mine plan compared to the ones that I've worked on
7 in the past. I can't think of what some of the details
8 are.

9 Q. Yeah. Do you have any concerns about -- I think
10 we talked a little bit about explosive storage in
11 conversations we've had?

12 A. Yeah. That was kind of interesting. They have
13 in the mine plan there are detailed explanations of all
14 the different facilities they're going to have on the mine
15 plan. They talk maintenance shed, an office building and
16 explosive storage and so on and so on. And then when you
17 look at the facilities plan that they put together,
18 there's nothing on it. And so I'm wondering where all
19 these facilities are going to be that they say they're
20 going to have in the mine plan.

21 But the one that really sticks out -- well, I
22 guess the thing that's odd is they talk about all these
23 buildings, but then when you look at the equipment lists,
24 they talk about a maintenance tent and then they talk
25 about office trailer they're going to use just for

1 temporary use, I guess. But the one I don't understand is
2 explosive storage. I don't understand how they can do
3 secure explosive storage in a tent.

4 Q. Yeah. So you talked a little bit about your
5 consulting experience and your background with coal
6 mining. But as a landowner out there, as a neighbor to
7 this proposed mine, what do you think the purpose of the
8 mine permit application and mine plan should be?

9 A. I think it should give the people in the area a
10 good ideas of exactly what's going to be happening so they
11 can assess what the impacts are going to be on the
12 property.

13 Q. So you can participate in, say, a public comment
14 period effectively?

15 A. Yeah. I think that would be very helpful.

16 Q. Yeah. Do you believe this permit application
17 has achieved those objectives?

18 A. They've been very closed-mouth. It's very hard
19 to get any information out of them. Nobody answers the
20 phone at their office. We stop by their office. There's
21 nobody there. I know I haven't personally tried it, but I
22 know that several of the neighbors have tried to call
23 there and never got a call back. Left a message and never
24 got a call back. So it's really hard to -- to get some
25 sort of an idea what's going on when nobody will talk to

1 you.

2 Q. Yeah. In your experience, and, you know, the
3 different permits that you've been involved in or looked
4 at over the years, have you ever seen one like this?

5 A. I've never seen one this sketchy. I think most
6 of the time they're fairly detailed.

7 Q. And, John, I have just one last question for
8 you. So if you were the DEQ and in charge of permitting
9 this mine, what would you want to do?

10 A. Well, we've had all kinds of testimony today
11 about all the problems in the TR-1 area. Everything
12 that -- that they want to do has a problem one way or
13 another in that area. I don't understand why they're so
14 set on sticking with that area. It's -- it's physically
15 isolated, geographically isolated and hydrologically
16 isolated from the rest of the mine. Why don't -- why
17 wouldn't they just go ahead and start with TR-2? They
18 could be -- you know, that might still be a little
19 problematic, because it's -- it's partially -- still
20 partially overlapped with the Big Horn Coal area, this one
21 little triangle on this one corner. But they can bypass
22 all the problems down in this area and get to mining right
23 away. They would be much more isolated from the majority
24 of the residences down in this area. They would be able
25 to prove that they could go ahead and mine and not cause

1 any problems, or, you know, make their proof that that
2 would work. It would be a very minor permit revision as
3 far as the DEQ's concerned. All they would be doing is
4 changing the sequencing, maybe changing, you know, the
5 size of one or two of the stockpiles or sediment ponds.
6 Basically, they can leave everything the same, pretty
7 much, and avoid all the problems they're having down here
8 that may keep them from getting a permit.

9 Q. Yeah. And we're not doing very good in the
10 record here with identification, but just for the record,
11 this is back to page 145 of DEQ 12 that Mr. Buyok's been
12 pointing at.

13 Is there anything else you want to share with
14 the council or --

15 A. Well, I guess -- I guess one other thing I'd
16 like to say is better yet even than starting with TR-2.
17 I'm not sure why they don't go ahead and start with the
18 surface mining area down in this part, because it would be
19 much cheaper to get started. They would be able to --
20 the -- the cost of mining would be much lower. The --
21 they would have time to develop markets and that sort of
22 thing. And as we understand -- you know, lawyers say we
23 can't talk about it, but according to the CEO of the
24 company, they're not going to do any of this anyway, so
25 why not just start down there with a small amount of coal

1 that will supply what they -- CEO says they're going to
2 do.

3 Q. Okay. Thanks. Anything else you want to add?

4 A. No. I don't think so.

5 MS. ANDERSON: Okay. Great.

6 I have no further questions.

7 CHAIRMAN BAGLEY: All right. Thank you,
8 Ms. Anderson and Mr. Buyok.

9 We will go ahead and recess until 8:30 tomorrow
10 where maybe some more people ask you some questions,
11 Mr. Buyok.

12 THE WITNESS: I'm sure they will.

13 CHAIRMAN BAGLEY: We are recessed.

14 (Hearing proceedings recessed
15 6:33 p.m., May 25, 2017.)

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C E R T I F I C A T E

I, KATHY J. KENDRICK, a Registered Professional
Reporter, do hereby certify that I reported by machine
shorthand the foregoing proceedings contained herein,
constituting a full, true and correct transcript.

Dated this 26th day of June, 2017.


KATHY J. KENDRICK
Registered Professional Reporter



From: Jan Kelley
To: lboomgaarden@crowleyfleck.com; cgregersen@crowleyfleck.com; todd.parfitt@wyo.gov; andrew.kuhlmann@wyo.gov; james.larock@wyo.gov; sanderson@powderriverbasin.org; alan.edwards@wyo.gov; jgilbertz@yonkeetoner.com; [Jim Ruby](#)
Subject: Brook Mine Application - Brook Mine's Brief on Statutes and Regulations that the Council Must Consider
Date: Monday, June 26, 2017 4:47:15 PM
Attachments: [Brook's Brief on Statutes and Regulations.pdf](#)

Good afternoon: Attached please find Brook Mine's Brief on Statutes and Regulations that the Council Must Consider.

Jan Kelley

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ATTORNEYS FOR PERMIT APPLICANT
BROOK MINING COMPANY, LLC

**BEFORE THE ENVIRONMENTAL QUALITY COUNCIL
STATE OF WYOMING**

IN RE BROOK MINE APPLICATION)	
	)	Civil Action No. 17-4802
TFN 6 2-025)	

**BROOK MINE’S BRIEF ON STATUTES AND REGULATIONS THAT
THE COUNCIL MUST CONSIDER**

INTRODUCTION

The Council’s Briefing Order asks the parties to brief what law applies to the Council’s review of the Brook Mine permit application and why. Like many parts of this permitting process, the Wyoming Supreme Court has not explained the boundaries of the Council’s review pertaining to Wyo. Stat. Ann. 35-11-406(k). Yet, past Wyoming Supreme Court decisions and Wyoming statutes define the Council’s authority and are the Council’s best guide as to its duties concerning the permitting process.

Using settled law and the pertinent statutes, the Council must review whether the Department of Environmental Quality (DEQ) correctly deemed Brook’s Permit application suitable for publication. This means the Council should review whether Brook has proven that its permit application is complete and has no deficiencies as defined in the Wyoming

Environmental Quality Act. Similar to an informal conference, the Council should decide if the objectors raised any deficiencies in Brook's permit application and issue findings of fact and conclusions of law to answer that question. But the Council should not make the findings required by section 406(n) because only the DEQ administrator can make those findings.

ARGUMENT

I. The Council's authority allows it to review only DEQ's administration of Section 406(a)-(h).

The Council's authority flows from the Wyoming Environmental Quality Act. *Amoco Prod. Co. v. State Bd. of Equalization*, 12 P.3d 668, 673 (Wyo. 2000) (explaining an agency's power depends upon statutes, so "they must find within the statute warrant for the exercise of any authority which they claim.") As a result, the Council can exercise only the authority that the Wyoming legislature granted to it. *Id.*; *Platte Dev. Co. v. State, Env'tl. Quality Council*, 966 P.2d 972, 975 (Wyo. 1998). Under the Environmental Quality Act, the Council has authority to determine "all cases or issues" under the Act and conduct hearings in "any case contesting" the administration of the Act. Wyo. Stat. Ann. § 35-11-112(a), (a)(iii), (a)(iv), (b)(ii). *See also Wyo. Dep't of Env'tl. Quality v. Wyo. Outdoor Council*, 2012 WY 135, ¶ 28, 286 P.3d 1045, 1052-53 (Wyo. 2012) (stating the scope of the Council's authority).

Specifically, the Act authorizes the Council to conduct a "contested case hearing" for: 1) promulgating rules and regulations required to administer the Act; 2) adopting, amending, or repealing rules or regulations as recommended by advisory boards; 3) contesting "the administration or enforcement of any law, rule, regulation, standard or order issued or administered by the department or any division thereof;" or 4) contesting the "grant, denial, suspension, revocation or renewal of any permit, license, certification or variance authorized or required by this act." Wyo. Stat. Ann. § 35-11-112(a)(i)-(iv).

The first two situations do not apply because this case does not involve rulemaking. The fourth situation also does not apply because Brook's permit has neither been granted nor denied. This leaves the third situation, which is to decide whether DEQ properly administered and enforced the permitting requirements under the Environmental Quality Act.

In deciding what this authority allows the Council to review, the Council should turn to the plain meaning of the statutory language. *In the Interest of JB*, 2017 WY 26, ¶ 12, 390 P.3d 357, 360 (Wyo. 2017) (stating that courts apply the plain meaning of a statute to decide the legislature's intent). The statute states the Council will conduct contested case hearings for laws, rules, regulations, and orders "issued or administered" by DEQ.¹ The word "administered" is past tense of the verb "administer." Administer means "to manage or supervise the execution, use, or conduct of." Merriam-Webster's Dictionary <https://www.merriam-webster.com/dictionary/administer>. Applied to this case, this definition means the Council's review is limited to past actions that DEQ has taken to manage or supervise the execution, use, or conduct of the permit application process as set out in the Wyoming Environmental Quality Act.

For Brook's permit application, DEQ has taken two actions. First, DEQ deemed the permit application complete under Wyo. Stat. Ann. § 35-11-406(e)-(g). Second, DEQ found the application has no deficiencies and was suitable for publication. *See id.* at (a)-(d), (h)-(j). Therefore, the plain language of the Council's authorizing statute means the Council can review these two actions. Given the plain language of the statute, the Council must review whether these

¹ The word "issue" does not matter because DEQ has not issued a state decision document or permit. So no document has issued that the Council can review.

two DEQ actions complied with sections 406(a)-(h) and the regulations implementing those sections.

This same logic means the Council does not consider section 406(n) because the DEQ administrator has not yet issued any findings under that section. Section 406(n) states “[n]o surface coal mining permit shall be approved unless the applicant affirmatively demonstrates **and the administrator** finds in writing” that:

- (i) The application is accurate and complete;
- (ii) The reclamation plan can accomplish reclamation as required by this act;
- (iii) The proposed operation has been designed to prevent material damage to the hydrologic balance outside the permit area;
- (iv) The area proposed to be mined is not included within an area designated unsuitable for surface coal mining pursuant to W.S. 35-11-425, within an area where mining is prohibited pursuant to section 522(e) of P.L. 95-87 [30 U.S.C. § 1272(e)], or within an area under review for this designation under an administrative proceeding, unless in such an area as to which an administrative proceeding has commenced pursuant to W.S. 35-11-425, the operator making the permit application demonstrates that, prior to January 1, 1977, he has made substantial legal and financial commitments in relation to the operation for which he is applying for a permit;
- (v) The proposed operation would:
 - (A) Not interrupt, discontinue, or preclude farming on alluvial valley floors that are irrigated or naturally subirrigated, but, excluding undeveloped range lands which are not significant to farming on said alluvial valley floors and those lands as to which the administrator finds that if the farming that will be interrupted, discontinued or precluded is of such small acreage as to be of negligible impact on the farm’s agricultural production; or
 - (B) Not materially damage the quantity or quality of water in surface or underground water systems that supply these alluvial valley floors. Paragraph (n)(v) of this section shall not affect those surface coal mining operations which in the year preceding August

3, 1977, produced coal in commercial quantities, and were located within or adjacent to alluvial valley floors or had obtained specific permit approval by the administrator to conduct surface coal mining operations within said alluvial valley floors. If coal deposits are precluded from being mined by this paragraph, the administrator shall certify to the secretary of the interior that the coal owner or lessee may be eligible for participation in a coal exchange program pursuant to section 510(b)(5) of P.L. 95-87 [30 U.S.C. § 1260(b)(5)].

(vi) If the area proposed to be surface coal mined contains prime farmland, the operator has the technological capability to restore such mined area, within a reasonable time, to equivalent or higher levels of yield as nonmined prime farmland in the surrounding area under equivalent levels of management and can meet the soil reconstruction standards of this act and the regulations promulgated pursuant thereto;

(vii) The schedule provided in paragraph (a)(xiv) of this section indicates that all surface coal mining operations owned or controlled by the applicant are currently in compliance with this act and all laws referred to in paragraph (a)(xiv) of this section or that any violation has been or is in the process of being corrected to the satisfaction of the authority, department or agency which has jurisdiction over the violation.

Id. (emphasis added). The DEQ administrator has not yet issued any findings under 406(n) because DEQ has not conducted the cumulative hydrologic impact assessment (CHIA) that allows the administrator to make findings under section 406(n)(iii). *See* Wyo. Admin. Code § ENV LQC Ch. 19 sec. 2. So DEQ has neither issued any findings under 406(n) nor administered that portion of section 406. As a result, the Council does not have the authority to conduct a contested case hearing to decide something DEQ has not yet issued or administered. *See Amoco Prod. Co.*, 12 P.3d at 673 (explaining an agency’s power depends upon statutes, so “they must find within the statute warrant for the exercise of any authority which they claim.”).

To be sure, the Council has general authority to grant or deny permits. Wyo. Stat. Ann. § 35-11-112(c)(ii). But in construing that statute and other related statutes, the more specific

statute controls over a general statute if they come into conflict. *Cheyenne Newspapers, Inc. v. Bd. of Tr. of Laramie Cty. Sch. Dist. No. One*, 2016 WY 113, ¶ 23, 384 P.3d 679, 685 (Wyo. 2016). Here, the Council has specific authority when exercising its role in contested cases like this one and that authority does not include granting a permit. *See* Wyo. Stat. Ann. § 35-11-112(a)(iii). Section 406 also specifically defines how the permitting process works and assigns the authority to issue a permit for surface coal mining to the director of DEQ. *See* Wyo. Stat. Ann. §§ 35-11-109(a)(xiii) (stating **the director shall** “issue, deny, amend, suspend, or revoke permits....”); 35-11-406(p) (**the director shall** issue or deny a permit within 15 days after receiving any findings of fact and conclusions of law from the Council). As a result, the Council’s authority to grant a permit does not apply here because two more specific statutes control over the Council’s general authority to grant permits. Thus, the Council’s authority in this contested case is to issue findings of fact and conclusions of law as to the actions taken by DEQ under section 406(a)-(h).

II. The rules of statutory construction show that the Council reviews DEQ’s administration of Section 406(a)-(h).

When deciding what a statute means, the Council must seek to give effect to the legislature’s intent. *Chevron, U.S.A. v. Dep’t of Revenue*, 2007 WY 43, ¶ 10, 154 P.3d 331, 334 (Wyo. 2007). This begins with the plain meaning of the words the legislature chose to find the “most likely, most reasonable, interpretation of the statute, given its design and purpose.” *In the Interest of JB*, ¶ 12, 390 P.3d at 360. The Council should consider each statutory section *in pari materia* (sections with the same subject) giving effect to each “word, clause, and sentence according to their arrangement and connection.” *Id.* In this analysis, the “internal structure and the functional relation between the parts and the whole” guide how the Council should interpret a statute. *Id.* at ¶ 16, 390 P.3d at 361. But the Council cannot read words into the statute or render

provisions meaningless. *City of Casper v. Holloway*, 2015 WY 93, ¶ 20, 354 P.3d 65, 71 (Wyo. 2015). Finally, the Council cannot interpret a statute in a way that produces “absurd results.” *Id.* Using these rules to interpret 35-11-406 leads to the same results as applying the Council’s enabling statute.

The Council’s role in this case comes from section 406(k), which states “an informal conference or a public hearing shall be held within twenty (20) days after the final date for filing objections....” Wyo. Stat. Ann. § 35-11-406(k). As described above, the Council serves as the contested case body for DEQ’s administration of laws, rules, and regulations. *Id.* at 112(a)(iii). The public hearing that invokes the Council’s jurisdiction comes after DEQ finds a permit application suitable for publication. *See id.* at 406(j). For a permit application to become suitable for publication, it must be complete and have no deficiencies. *See id.* at (a)-(h). The Environmental Quality Act defines completeness as an application that “contains all the essential and necessary elements and is acceptable for further review for substance and compliance with the provisions of this chapter.” Wyo. Stat. Ann. § 35-11-103(e)(xxii). The Act defines deficiencies as “an omission or lack of sufficient information serious enough to preclude correction or compliance by stipulation in the approved permit to be issued by the director.” *Id.* at (xxiv). Both processes rely on regulations that flesh out details a permit must have. *See Table on Page 10.*

This sequence and structure suggests the Council should review only what led DEQ to deem Brook’s permit application suitable for publication. *See In the Interest of JB*, ¶ 12, 390 P.3d at 361 (explaining that the Council must give effect to a statute’s arrangement and connection). The legislature chose to structure section 406 so that only a DEQ finding of completeness without deficiency could trigger the Council’s review of comments related to the

permit application. No other part of section 406 states that DEQ's findings will trigger a public hearing. The legislature made a deliberate choice to restrict how a public hearing comes to be; that choice also restricts what the Council reviews. *See id.*

The sequence also shows that the legislature did not intend the Council to review the findings under 406(n). In the structure of the statute, the required findings under section 406(n) come after DEQ deems a permit application suitable for publication and after an informal conference or public hearing has taken place. *Compare* Wyo. Stat. Ann. § 35-11-406(k), (n). Those findings do not have to occur before publication. *See id.* at 406(n). Instead, the findings must occur only before a permit issues, which occurs 15 days after the Council makes its findings of fact and conclusions of law. *Id.* at 406(p). Had the legislature wanted the 406(n) findings to be part of the Council's review, it could have required DEQ make those findings before a permit gets published for public comment. The legislature chose not to do so.

The legislature also expressly stated that the administrator makes the findings under 406(n). The Act defines "administrator" as "the administrator of each division of the department." Wyo. Stat. Ann. § 35-11-103(a)(v). That definition does not include the Council and cannot refer to the Council under any reasonable interpretation. The administrator must also conduct the CHIA, which "shall be sufficient to the make the determination of W.S. § 35-11-406(n)(iii)." WY ADC ENV LQC Ch. 19 § 2. The plain meaning of these sections reinforces the fact that the Council does not make the findings under 406(n).

The federal process for issuing a permit under the Surface Mining Control and Reclamation Act (SMCRA) provides more proof that the legislature intended to have only DEQ make the findings under 406(n). As the Council knows, federal law requires Wyoming's surface mining laws be as stringent as federal law for Wyoming to maintain primacy. 30 U.S.C. § 1255;

30 C.F.R. § 730.11. SMCRA’s regulations require the “regulatory authority” make the exact same findings as those described in section 406(n) of Wyoming’s Environmental Quality Act. *See* 30 C.F.R. § 773.15. The federal regulations define regulatory authority as “the department or agency in each State which has primary responsibility at the State level for administering the Act in the initial program, or the State regulatory authority where the State is administering the Act under a State regulatory program....” *Id.* at § 700.5. So in implementing SMCRA’s requirements, the legislature also required the administrator of the regulating agency to make the findings under 406(n).

The same analysis applies to section 406(m). Section 406(m) states that the “director” cannot deny a permit application, except for the reasons stated. *See* Wyo. Stat. Ann. § 35-11-406(m). Again, the plain language means the legislature did not intend for the Council to make the decision under 406(m), leaving the Council to review only the findings that DEQ made leading to publication of the permit application.

This view is also the only way to overcome a practical dilemma. While the completeness and deficiency reviews that DEQ conducts are necessary to make findings under section 406(n), they are not sufficient for all of the required findings because DEQ has to assess cumulative impacts independent of the permit application. *See* WY ADC ENV LQC Ch. 19 § 2. As mentioned above, DEQ has not yet conducted the CHIA. No Wyoming statute or regulation requires that DEQ conduct that assessment before it deems a permit application suitable for publication. Here, DEQ has not yet done that assessment. So it is impossible for the Council to review those findings because they do not exist. To require the Council to review 406(n) would create an absurd and illogical result where the Council would have to review something that is neither completed nor yet required. *See Holloway*, ¶ 20, 354 P.3d at 71 (stating that the Council

should not read a statute to create an absurd result); *In the Interest of JB*, ¶ 12, 390 P.3d at 360 (stating that the Council must find the “most likely, most reasonable, interpretation of the statute, given its design and purpose.”) As a result, the Council should not consider section 406(n).

III. Brook bears the burden of proof.

Brook does not dispute that as the permit applicant it must provide the information necessary for DEQ to find the permit application suitable for publication. *See* Wyo. Stat. Ann. § 35-11-406(a)-(h). Brook also does not dispute that it continues to have the burden of proving to this Council that its application is complete and without deficiencies. *Id.* The Council should also weigh heavily the regulatory and technical expertise of DEQ. Although the Council may not have to defer to their expertise, DEQ personnel are the true experts on permit applications.

IV. The law the Council should review

Although the Council should review only whether Brook has proven that its permit application is complete, non-deficient, and suitable for publication, that review involves multiple statutes and regulations. For the Council’s benefit, Brook has set out the applicable statutes and their associated regulations in the table below. Brook will incorporate these statutes and regulations into its proposed findings of fact and conclusions of law.

Statutes	Regulations
35-11-406(a)	<p>Wyoming Administrative Rules Department of Environmental Quality Land Quality – Coal:</p> <p>Ch. 2, §§ 2(a)(i), (ii), (iii), (v) § 3(b) §§ 4(a)(i), (ii), (iii), (vi), (vii), (viii), (ix), (x), (xi)(A)-(B), (xii), (xiii), (xiv) § 5(a)(viii), (xiii), (xvi) §§ 6 (b)(ii), (vi), (x) Ch. 4, §§ (2)(a), (d), (f), (j), (l)(C)-(D), (n), (r), (t), (w), (x) Ch. 5 § 6 Ch. 7, §§ 1, 2 Ch. 12, §§ 1(a)(v)(D), (E)-(F), (viii), (xi), (xii) Ch. 19, § 2</p> <p>Wyoming Administrative Rules Department of Environmental Quality Land Quality – Coal, Appendix B</p>
35-11-406(b)	<p>Wyoming Administrative Rules Department of Environmental Quality Land Quality – Coal:</p> <p>Ch. 2, § 2(a)(v) §§ 4(a)(i), (ii), (iii), (v), (xii), (viii), (ix), (x), (xi), (xii), (xiv), (xv), (xvi), (xvii), (xviii) §§ 5(a)(i), (iv), (vii), (ix), (x), (xi), (xvi), (xviii), (xix) §§ 6(a), (b)(ii), (v), (vi), (x); Ch. 3, § 2 Ch. 4, §§ 2(i), (iii), (iv), (a), (b), (c)(xii)(F), (d), (e), (f), (g), (h), (i), (j), (k), (l), (m), (n), (q), (r), (w), (x) Ch. 5, § 3 Ch. 6, § 3(a) Ch. 12, §§ 1(a)(i), (v) § 2 Ch. 19, § 2</p> <p>DEQ Land Quality Division Guideline 12</p>
35-11-406(c)	Wyoming Administrative Rules Department of Environmental Quality Land Quality – Coal, Ch. 2, § 2 Section 1.(e)
35-11-406(d)	Wyoming Administrative Rules Department of Environmental Quality Land Quality – Coal, Ch. 2, § 2 Section 4.(a)(xvii)
35-11-406(e)	
35-11-406(f)	

Statutes	Regulations
35-11-406(g)	
35-11-406(h)	
35-11-406(j)	
35-11-406(k)	
35-11-406(p)	

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Subject: RE: Fishers" 406(n) Brief
Date: Monday, June 26, 2017 4:43:22 PM
Attachments: [Fisher Subsection N Brief.pdf](#)

Dear All: Attached is the Fishers' Brief on the application of 406(n) to these proceedings.

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**BEFORE THE ENVIRONMENTAL QUALITY COUNCIL
STATE OF WYOMING**

IN RE BROOK MINE APPLICATION)	
	)	DOCKET 17-4802
TFN 6 2-025)	
)	

**OBJECTOR FISHERS' BRIEF ON THE APPLICATION OF
WYOMING STATUTE §35-11-406(n)**

Objectors Mary Brezik-Fisher and David Fisher, through their undersigned attorney Jay A. Gilbertz, of Yonkee & Toner, LLP, hereby file this brief addressing the application of Wyoming Statute §35-11-406(n) to these proceedings.

- I. Brook Mine's Application for a surface coal mine *must* contain the information which demonstrates that the requirements of §35-11-406(n) have been met. If the Application lacks this proof, it is not a complete application.**

Wyoming Statute §35-11-406 provides that when an Applicant for surface coal mining permit and the Department of Environmental Quality (DEQ) believe an application is complete, the application moves to a public participation phase during which interested members of the public can raise questions about, comment on, and object to the application. At this juncture, the back-and-forth between the Applicant and the DEQ about the contents and technical aspects of the application has concluded and the Applicant (Brook Mine) necessarily takes the position that the assessment of

its application is ready to move to a final determination.

In several locations, §35-11-406 requires that the application be “complete” by this stage. In other words, at this point, the Applicant is claiming that it has provided everything which is necessary for the issuance of the mining permit and the application is ready, *as submitted*, to be reviewed for compliance with Wyoming law and ultimately for issuance of a coal mining permit. In order for the application to be “complete” it must demonstrate compliance with all Wyoming statutes, rules and regulations that govern surface coal mines *and* it must contain all the information necessary for the issuance of the permit. Section 35-11-406(n) provides:

(n) The applicant for a surface coal mining permit **has the burden of establishing that his application is in compliance with this act and all applicable state laws.** No surface coal mining permit shall be approved unless the **applicant affirmatively demonstrates** and the administrator finds in writing:

Wyo. Stat. §35-11-406 (LexisNexis 2015) (emphasis added). Subsection (n) goes on to list the required showings which include affirmative proof that application is accurate and complete, that the proposed mining operation has “been designed to prevent material damage to the hydrologic balance outside the permit area” and that the mining activity will not “materially damage the quantity or quality of water in surface or underground water systems” that supply alluvial valley floors. Wyo. Stat. §35-11-406(n)(i), (n)(iii), & (n)(v)(B).

The above quoted portion of the statute clearly and unambiguously requires the applicant to prove that its “application in compliance with this act” – meaning the Environmental Quality Act. Subsection (n) cited above is part of that Act and for this reason the *application* must demonstrate compliance with all the requirements of the Environmental Quality Act – including subsection (n). By very definition then, an application cannot be complete unless it contains all the information necessary to prove that the applicant is in compliance with subsection (n) and its sub-parts. If the application and its contents do not contain this information, then it is incomplete.

While it is true that there can be a later assessment by the Director to determine if the Director believes Brook has proven the subsection (n) factors, this later process does not relieve Brook from the current obligation to set forth the necessary facts and proof within the content of the very application that Brook contends is complete and ready for such an assessment. Without detailed and meaningful evidence and analysis proving that the requirements of §35-11-406(n) have been met, the application does not have the information upon which any later finding could be based. Moreover, without this proof being set forth and sufficiently detailed, there is no opportunity for members of the public to gauge or challenge the adequacy or reliability of the claimed proof. Sweeping and conclusory generalities such as "No harm is expected" do not constitute affirmative proof.

In short, an application lacking in this proof is incomplete. This is actually a quite simple and very straightforward matter which warrants no further discussion or analysis. Whether or not the application contains proof of compliance with the §35-11-406(n) requirements must be addressed.

II. Failure to assess whether the permit application contains the necessary information to prove compliance with subsection (n) would constitute a grave error of law and constitute an arbitrary and capricious act.

The "technically adequate" and "technically complete" distraction:

Throughout the proceedings, Brook Mine contended that all it needed to show for these proceedings was that its mining application was "technically adequate" or "technically complete". Surprisingly, the DEQ itself participated in this dissimulation of the applicable standard and adopted this same inaccurate terminology.

Nowhere in the Wyoming Statutes are the terms "technically adequate" or "technically complete" used as a descriptive term for the adequacy of an application for a coal mining permit.

Rather, Wyoming Statute §35-11-406 simply states in several locations that the application must be “complete”. Complete means “having all necessary parts, elements, or steps.” *Merriam Webster’s Collegiate Dictionary*, 10th Ed. (1995). To be complete, the application must contain the elements or parts which reveals information satisfying the essential requirements of §35-11-406(n).

By purposeful addition of the qualifier “technical” and through avoidance of the actual language of the statute, Brook attempts to reduce its obligated showing to something less than a “complete” application. The EQC must reject Brook’s efforts to diminish its required showing through clever semantics and hold Brook to the statutory standard of having a complete application. A complete application must contain the information necessary to demonstrate that the requirements of §35-11-406(n) have been *meaningfully* satisfied in the contents and attachments to the application in its current form.

Rather than addressing the extent to which the application and its attachments satisfied this burden, Brook (and to a large degree DEQ) aggressively fought addressing the topic throughout the proceedings objecting any time the topic was raised. This resistance to squarely addressing the issue is a clear indication the permit is lacking the required proof.

Interpreting §35-11-406 to allow Brook to proceed to the issuance of a mining permit without demonstrating that its application contains the information proving compliance with the standards of §35-11-406(n) is an absurd reading of the Statute and violates the policy of the Act.

Statutes must be interpreted and construed in a way that does not render any portion of the statute meaningless. *Reliance Ins. Co. v. Chevron U.S.A. Inc.*, 713 P.2d 766 (Wyo. 1986). Statutes cannot be construed or interpreted in a “manner producing absurd results.” *State v. Sodergren*, 686 P.2d 521, 527 (Wyo. 1984), See also *In re Romer*, 436 P.2d 956 (Wyo. 1968); *Woolley v. State Highway Commission*, 387 P.2d 667 (Wyo. 1963); *Huber v. Thomas*, 19 P.2d 1042 (Wyo. 1933); and *Jones v. State*, 2006 WY 40, ¶ 12, 132 P.3d 162, 166 (Wyo. 2006).

Brook contends that whether it has proven that the requirements of §35-11-406(n) have been met is a determination to later be made by the Director of the DEQ and thus it need not demonstrate that its application contains the information from which that conclusion can be drawn. This contention ignores the fact that at this stage of the process Brook has supplied everything it believes is necessary to support issuance of the permit. If the contents of Brook's application is not capable of meaningfully proving the requirements of §35-11-406(n), then the application is by definition incomplete. It would constitute an absurd reading of the statute to declare that the application can be considered complete without the information necessary to make these required determinations.

Moreover, construing the statute in this way implicates due process concerns and contradicts the underlying goals of environmental protection laws. Like the federal law upon which it was modeled, Wyoming environmental protection laws impose a duty of taking a "hard look" at the environmental consequences of a project and require the meaningful participation of the public in that decision making process. As stated by the U.S. Supreme Court, the goal of environmental protection laws is to ensure that "the agency, in reaching its decision, will have available, and will carefully consider, detailed information concerning significant environmental impacts; **it also guarantees that the relevant information will be made available to the larger audience that may also play a role in both the decision making process and the implementation of that decision.**" *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 349, 109 S. Ct. 1835, 1845, (1989) (emphasis added). Wyoming's statutes provide for and echo this notion of the public having detailed and relevant information about the proposed activities, the environmental risks and having the right to a meaningful role in the decision making process.

Under Brook's proffered construction of the statute, it need not demonstrate that its application clearly contains the detailed information necessary to prove that it has satisfied the

requirements of §35-11-406(n) (which are prerequisites to obtaining the permit). According to Brook, this is because the Director of the DEQ can later make his own determination of whether these requirements have been satisfied. This reading effectively freezes-out public participation in the decision making process.

In other words, Brook's position is that it does not need to show that it has provided the detailed and "relevant information" in its application because there is a later decision to be made. The grave upshot of that argument is that this relevant information will only be made known to the public after the permit is issued – if ever. This would put Brook in the position of getting its mining permit with the only recourse or role for the public and "larger audience" to play being an appeal of the permit's issuance. Under this scenario, it would then be the obligation of the objectors to show the permit was improperly granted.

In effect, Brook seeks to cleverly flip the burden of proof from itself to the public and in the bargain gain the right to begin its mining operations and environmental disturbance before any challenges can be addressed. No doubt, Brook would prize such a discrepant outcome, but the EQC cannot allow the operator to shirk its burden of proof. Accepting Brook's construction of the statute would result in an absurdity and undermine the very goals of public review and participation in the process.

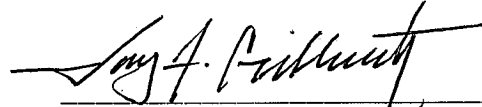
III. Conclusion

The requirements of §35-11-406(n) are substantive requirements of the Wyoming Environmental Quality Act and a coal mining applicant must prove its mining activities will be in compliance with these provisions as a prerequisite to any mining permit being issued. Consequently, in order to demonstrate that an application is complete, the relevant information must be contained and set forth in the application documents demonstrating and proving that the proposed mining

operation has met these requirements. The EQC must consider §35-11-406(n) in determining whether Brook's application is complete.

DATED this 26th day of June, 2017.

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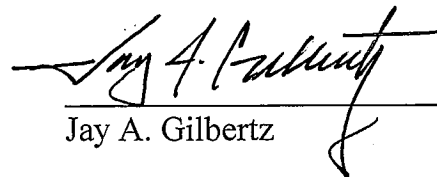
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Please find attached *Big Horn Coal Company's Brief Regarding the Scope of the Environmental Quality Council's Review*. This document was filed with the EQC this afternoon.

Thank you,
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**BEFORE THE ENVIRONMENTAL QUALITY COUNCIL
STATE OF WYOMING**

IN RE BROOK MINE APPLICATION)
) **Docket Nos. 17-4802, 17-**
) **4803, and 17-4804**
TFN 6 2-025) **(Consolidated)**

**BIG HORN COAL COMPANY'S BRIEF REGARDING THE SCOPE OF
THE ENVIRONMENTAL QUALITY COUNCIL'S REVIEW**

Pursuant to the Environmental Quality Council's ("EQC") Briefing Order, dated June 13, 2017, Big Horn Coal Company ("Big Horn"), by and through its undersigned counsel of record, hereby submits this brief addressing the legal parameters governing the EQC's review in this matter, as well as the appropriate burden of proof standard.

INTRODUCTION

This matter involves the surface coal mining permit application of Brook Mining Company, LLC ("Brook Mine") and the numerous objections thereto. After

the permit application was deemed complete and suitable for publication by the Wyoming Department of Environmental Quality (“DEQ”),¹ notice of the application was published pursuant to Wyo. Stat. Ann. § 35-11-406(j). In response, and pursuant to Wyo. Stat. Ann. § 35-11-406(k), numerous parties submitted written objections to the permit application citing various deficiencies and requesting an informal conference to attempt to resolve the disputes without the need for a contested case hearing. DEQ denied the requests for an informal conference and the matter was referred to the EQC for a contested case hearing. Additional proceedings before the EQC eventually led to this contested case hearing.

The EQC’s June 13th Order directs the parties to submit briefs as to the appropriate legal framework and burden of proof standard to be applied by the EQC, and to particularly address the applicability of Wyo. Stat. Ann. § 35-11-406(n).

In short, pursuant to Wyo. Stat. Ann. § 35-11-406, the EQC must consider all statutes and regulations regarding permit application requirements and required findings relating to permit issuance. This certainly includes Wyo. Stat. Ann. § 35-11-406(n), as this subsection specifically provides criteria that must be met prior to

¹ Various decisions, statements or legal requirements referenced herein pertain to specific personnel, divisions or locations within DEQ. Because these specifics generally do not affect the subject matter briefed herein, for the sake of simplicity, in this Brief, Big Horn simply refers to “DEQ” generally.

any permit approval. As to the appropriate burden of proof standard, Wyo. Stat. Ann. § 35-11-406(n) clearly provides that Brook Mine, as the permit applicant, bears the burden to affirmatively establish and demonstrate that its application is “in compliance with the [Environmental Quality Act] and all applicable state laws” and meets each and every requirement under Wyo. Stat. Ann. § 35-11-406(n).

ANALYSIS

Wyoming Statute Annotated § 35-11-406 (sometimes referred to herein as “Section 406”), as the statute governing Brook Mine’s permit application and its eventual issuance or denial, makes clear that the matter at hand is whether Brook Mine’s permit application is suitable for approval and issuance. Under the course of these proceedings, the EQC must render a decision on the permit application following a contested case hearing, which it is empowered to hear pursuant to Section 406 and Wyo. Stat. Ann. § 35-11-112(a)(iv). From this, two conclusions can be drawn: (1) to properly discharge its duties, the EQC must consider all legal requirements pertaining to surface coal mine permit applications, specifically including Wyo. Stat. Ann. § 35-11-406(n); and (2) by clear and unequivocal statutory directive, the burden falls squarely on Brook Mine to affirmatively establish that its application is in compliance with all relevant laws and meets the specific requirements of Section 406(n). Wyo. Stat. Ann. § 35-11-406(n).

In analyzing the EQC’s role, it is helpful to review the applicable statutory procedure governing the processing of Brook Mine’s permit application, the course

of proceedings in this matter, and the powers and duties of the EQC. Additionally, in light of its future decisions, it is important for the EQC to evaluate whether it is required to give deference to DEQ in interpreting statutory provisions, including those related to the permit application's accuracy and completeness.

I. Procedure Provided for in Wyo. Stat. Ann. § 35-11-406

Section 406 provides, in a very linear and step-by-step fashion, both the procedure and legal requirements for surface coal mining permit applications and the eventual issuance or denial thereof.

Section 406 begins with subparts (a), (b) and (c) which set forth and provide specific requirements that the permit application must contain. Wyo. Stat. Ann. § 35-11-406(a) – (c). These subsections are then supplemented by the various permit requirements provided for in DEQ's Land Quality-Coal Rules and Regulations, found within WY Rules and Regulations ENV LQC Ch. 1 through Ch. 20. Section 406(d) next requires the permit application to be made publicly available in the county in which the proposed permit area resides. Wyo. Stat. Ann. § 35-11-406(d). Subpart (e) pertains to DEQ finding of whether the application is "complete," and subparts (f) and (g) pertain to additional steps to be taken to obtain this "completeness" finding and require publication of the fact that the application has been filed. *Id.* at -406(e) – (g). Subpart (h) then calls for DEQ to again review the filed application for completeness and find either that: (1) the application is complete and suitable for publication; (2) the application is deficient; or (3) the

application is denied. *Id.* at -406(h). As set forth in Wyo. Stat. Ann. 35-11-103(e)(xxii), the designation of completeness as contemplated by Section 406(e) does not mean that an application is substantively adequate for permit issuance or accurate and complete. Instead, by definition, it merely means that “the application contains all the essential and necessary elements and is acceptable for further review for substance and compliance with the provisions of this chapter[.]”

If DEQ determines the application to be complete and suitable for publication, subparts (j) and (k) call for notice of the application to be published, in part to allow for objections to the application. Wyo. Stat. Ann. § 35-11-406(j) – (k).²

Subpart (k) also provides for review of the application in the event of objections. If the application is for surface coal mining operations, and if requested, DEQ may hold an informal conference to informally resolve the disputes and subsequently take action on the permit application. *Id.* at -406(k). This decision is then appealable to the EQC for a *de novo* review. *Id.* Additionally, subpart (k) provides for an alternative method of review, in which objections are heard by the EQC in the form of a contested case hearing. *Id.*

Subparts (m) and (n) set forth the requirements for permit approval, with subpart (n) pertaining to surface coal mining permit applications. *Id.* at -406(m) –

² To avoid confusion, Big Horn notes that there is no subpart (i) or (l) to Section 406.

(n). Subpart (n) specifically states that the permit applicant “has the burden of establishing that his application is in compliance with [the Wyoming Environmental Quality Act] and all applicable state laws” and that “[n]o surface coal mining permit shall be approved unless the applicant affirmatively demonstrates and the administrator finds in writing” several requirements, including that:

- (i) The application is accurate and complete;
- (ii) The reclamation plan can accomplish reclamation as required by this act;
- (iii) The proposed operation has been designed to prevent material damage to the hydrologic balance outside the permit area; . . .

Id. at -406(n).

Subpart (o) pertains to the applicant’s past conduct related to environmental harm. *Id.* at -406(o).

Finally, subpart (p) states when a decision on the permit shall be made. Included in this subsection is the requirement that if a contested case hearing is held regarding the application, the EQC “shall issue findings of fact and a decision on the [permit] application within sixty (60) days after the final hearing.” *Id.* at -406(p). DEQ then “shall issue or deny the permit no later than fifteen (15) days from receipt of any findings of fact and decision from the [EQC].” *Id.*

II. Procedure in this matter

In this case, DEQ found Brook Mine’s permit application suitable for publication, public notice was given, and interested parties were required to submit objections to DEQ by January 27, 2017. *See Big Horn’s Response to Brook Mine’s*

Motion to Dismiss Big Horn Coal Company's Petition for a Contested Case Hearing, at Exh. D. Big Horn, along with other interested parties filed objections citing various problems and deficiencies with Brook Mine's permit application. Within these objections were several requests for an informal conference as contemplated by Section 406(k). DEQ, however, denied the requests for an informal conference and referred this matter to the EQC for a contested case hearing.

As DEQ has made clear in both its Prehearing Memorandum and at the hearing for this matter, it has not completed several prerequisite requirements necessary for any permit issuance and has not made the findings necessary to issue or deny the permit. *See Department of Environmental Quality's Prehearing Memorandum*, p. 2.³

III. Role and Powers of the EQC

Wyoming Statute Annotated § 35-11-112 sets forth the role and powers of the EQC. Included in these powers are the specific provisions that the EQC:

- Shall conduct hearings in any case contesting the grant, denial, suspension, revocation or renewal of any permit, license, certification or variance authorized or required by this act; and

³ While the complete transcript from the contested case hearing is not yet available to the parties, at the hearing DEQ acknowledged that certain requirements, such as the Cumulative Hydrologic Impact Assessment (CHIA), are required before any permit may be issued and have not yet been completed.

- May order that any permit, license, certification or variance be granted, denied, suspended, revoked or modified.

Wyo. Stat. Ann. § 35-11-112(a)(iv), (c)(ii).

IV. Requirements the EQC Must Consider in its Review

Pursuant to Section 406, the EQC must consider whether Brook Mine has affirmatively established that its permit application meets all legal prerequisites for permit approval. The burden of proof falls upon Brook Mine to affirmatively prove that its permit application is in compliance with all applicable state laws and meets all requirements of Section 406(n).

DEQ found Brook Mine's permit application sufficiently complete to be suitable for publication. As demonstrated by Wyo. Stat. Ann. 35-11-103(e)(xxii), this determination is not a substantive determination on the permit application. Instead, as defined by law, such determination indicated that DEQ found that the application "contains all the essential and necessary elements and is acceptable for further review for substance and compliance with the provisions of this chapter[.]" Wyo. Stat. Ann. § 35-11-103(e)(xxii). Hence, this determination of completeness and suitability for publication merely means the permit application contains the requisite pieces, but does not pass judgment as to the substance of the application's contents and its overall compliance with the substantive or legal requirements and

prerequisites to permit issuance. This review comes later, as further outlined in Section 406 and discussed below.⁴

Because objections were filed, Section 406(k) allowed for either an informal conference or a contested case hearing before the EQC regarding the permit application. Wyo. Stat. Ann. § 35-11-406(k). In either event, the result will be a decision regarding the permit and its suitability for issuance. *See id.* at -406(k) (stating that DEQ will “take action on the application” after the informal conference, with the right of review to the EQC); -406(p) (stating that “[i]f a hearing is held, the [EQC] shall issue findings of fact and a decision on the application”) (emphasis added). Section 406(n) then sets forth the criteria reviewed in taking action on the permit application, and provides the specific statutory criteria under which the substance of the permit application for a surface coal mining permit is evaluated. *Id.* at -406(n).

In this case, DEQ elected not to hold an informal conference, and instead referred this matter to the EQC. It is therefore the task of the EQC to conduct the contested case hearing, review the evidence presented along with the permit application and, pursuant to Section 406(p), render a decision on the application pursuant to criteria set forth in Section 406(n). Under Section 406(n), the EQC must

⁴ DEQ admits as much in its Prehearing Memorandum, indicating that it has not completed the final steps to determine whether to issue or deny the permit. *See Department of Environmental Quality’s Prehearing Memorandum*, p. 5.

determine whether Brook Mine has “establish[ed] that [its] application is in compliance with this act and all applicable state laws,”⁵ and whether Brook Mine has affirmatively demonstrated that it has met the specific requirements from Section 406(n) including, but not limited to, that:

- The application is accurate and complete;
- The reclamation plan can accomplish reclamation as required by this act;
- The proposed operation has been designed to prevent material damage to the hydrologic balance outside the permit area ...

Wyo. Stat. Ann. § 35-11-406(n)(i)-(vii).

Section 406(n) makes it abundantly clear that the burden in these proceedings is on Brook Mine, as the applicant, to establish all requirements in Section 406(n). In fact, Section 406(n) provides the only applicable burden in reviewing Brook Mine’s permit application.

This interpretation of Section 406(n) is in complete accord with not only Section 406 and Wyo. Stat. Ann. § 35-11-103(e)(xxii)’s reference to the “further

⁵ The additional state laws that Brook Mine must establish its application is in compliance with come from the various rules and regulations of the Wyoming DEQ. Many of these rules and regulations have been set forth and described in the parties’ various Prehearing Memoranda and will be further set forth by the parties in their respective Proposed Findings of Fact and Conclusions of Law.

review for substance and compliance” with law, it is also in complete conformity with case law and the statutory powers and duties of the EQC.

The case of *Grams v. Environmental Quality Council*, 730 P.2d 784 (Wyo. 1986), demonstrates the correct procedure and scope of review for the EQC in this matter. In *Grams*, an applicant coal mining entity submitted an application to DEQ for a permit to mine coal. *Id.* at 786. As in this case and pursuant to Section 406, after DEQ determined the application was complete and suitable for publication, objections were filed and a hearing was held before the EQC. *Id.* At the conclusion of the hearing, the EQC did not issue a statement as to whether the application was complete or “technically adequate,” rather the EQC issued a decision on the permit directing DEQ as to whether to issue the permit. *Id.* *Grams* outlines the procedure regarding objections to a surface coal mining permit application, but more importantly, for purposes of this analysis, it demonstrates that, in these proceedings the EQC properly considers the requirements of Section 406(n) and that “the burden of proof rests upon the applicant to show that the application is in compliance with applicable law.” *Id.* at 789 (citing Wyo. Stat. Ann. § 35-11-406(n)).

Here, the EQC conducted the proceedings contesting the issuance of Brook Mine’s requested permit and it is the duty of the EQC to render a decision on the permit application based on a consideration of Section 406(n), which incorporates all other applicable laws and regulations. Wyo. Stat. Ann. § 35-11-112(a)(iv) (stating the EQC shall “conduct hearings in any case contesting the grant, denial,

suspension, revocation or renewal of any permit”); Wyo. Stat. Ann. § 35-11-406(n),(p) (mandating the EQC issue a decision on the permit application and setting forth the criteria for that decision); *Grams*, 730 P.2d at 789. Moreover, because the EQC is vested with power to “order that any permit, license, certification or variance be granted, denied, suspended, revoked or modified,” it is within the power of the EQC to direct that DEQ not issue any permit based on the application unless or until certain additional studies have occurred, or to direct that condition(s) be imposed on any issued permit to ensure compliance with all applicable laws and regulations. Wyo. Stat. Ann. § 35-11-112(c)(ii) (emphasis added). The EQC may also determine what it finds inaccurate or incomplete within the application so that Brook Mine and DEQ can addresses such deficiencies.

V. Deference Afforded to EQC Finding Regarding the Permit’s Technical Adequacy/Completeness

One final consideration for the EQC in this matter is regarding the deference or weight to be afforded to the statement or position from DEQ that the Brook Mine application is “technically adequate.” The term “technically adequate” is not found anywhere in Section 406, nor is it found in any of the relevant DEQ Rules and Regulations. To the extent that DEQ may consider the term “technically adequate” to be synonymous with the requirement in Section 406(n)(i) that the application be “accurate and complete,” such position is not based in statute or regulation, and is not entitled to any deference under case law or other legal precedent. It is within

the EQC's powers and duties to makes its own interpretation of whether Brook Mine's permit application is "accurate and complete" in light of all applicable requirements from Section 406 and DEQ's Rules and Regulations.

The case of *Platte Development Co. v. State, Environmental Quality Council*, 966 P.2d 972 (Wyo. 1998), demonstrates that the EQC properly considers the plain language of statutes rather than deferring to DEQ's interpretation of specific terms. In *Platte Development*, the issue presented to the Court involved the interpretation of the statutory term "overburden." 966 P.2d at 975. The Environmental Quality Act limited "small" mines, such as the mine at issue, to removing not more than 10,000 yards of overburden in any one year. *Id.* at 975-976. The Environmental Quality Act defined overburden as "all earth and other materials which lie above the mineral deposit," but DEQ followed an industry custom which considered topsoil distinct and not included in its overburden calculations. *Id.* The EQC, however, found that the statutory language was clear and topsoil was to be included in the overburden amount. *Id.* at 976. According to the Court, because the statutory language was clear, the EQC correctly applied the plain language of the statute as to the meaning of "overburden." *Id.*

Similarly, in this case, the EQC must consider the plain language of Section 406(n) and its requirement that Brook Mine affirmatively prove that its permit application is "accurate and complete" without deference to DEQ's position that the permit application is "technically adequate." The statutory mandate of Section

406(n) unambiguously states that the permit cannot be approved unless Brook Mine meets this burden. Wyo. Stat. Ann. § 35-11-406(n). It is therefore incumbent upon the EQC to determine if the permit application contains all necessary legal requirements, is free from errors and conforms exactly to the applicable standards. (Merriam-Webster Dictionary defining “accurate” as “free from error especially as the result of care” and “conforming exactly to truth or to a standard,” and “complete” as “having all necessary parts, elements, or steps”).⁶ The legally undefined classification of “technically adequate” has no bearing on the EQC’s determination of “accurate and complete.”

CONCLUSION

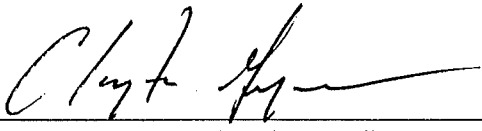
In sum, Section 406 and the relevant case law conclusively demonstrate that the EQC must render a decision on Brook Mine’s permit application in light of the relevant and applicable state laws, which undoubtedly include Section 406(n). Section 406(n) is the guiding principle for the EQC’s review in that matter, and unambiguously demonstrates that the burden of proof rests on Brook Mine to affirmatively establish that its permit application is in compliance with all applicable state laws, specifically including those from Section 406(n).

In making its determination and rendering a decision on the permit application, the EQC may direct that DEQ modify or impose conditions upon any

⁶ See <https://www.merriam-webster.com>.

permit as necessary to ensure compliance with the all applicable state laws and to ensure that any application is accurate and complete. Finally, the EQC owes no deference to any determination of the application being “technically adequate” in the context of evaluating whether the permit application is “accurate and complete” for purposes of Section 406(n).

DATED: June 23, 2017.

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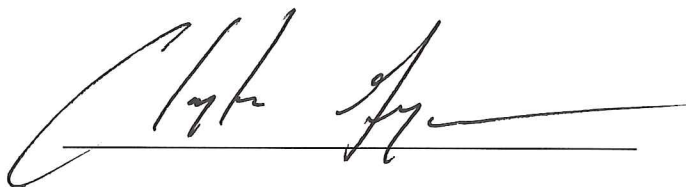
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Dear All: Attached is the Fishers' Brief on the application of 406(n) to these proceedings.

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Please see our brief attached.

Best,
Shannon

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**BEFORE THE ENVIRONMENTAL QUALITY COUNCIL
STATE OF WYOMING**

IN RE BROOK MINE APPLICATION)
) **DOCKET 17-4802**
TFN 6 2-025)

POWDER RIVER BASIN RESOURCE COUNCIL'S BRIEF
Oral Argument Requested

Pursuant to the June 13, 2017 Order, the Powder River Basin Resource Council (“Resource Council”) hereby files its brief in the above captioned proceedings. This brief summarizes the specific statutes and rules the Environmental Quality Council (“EQC” or “Council”) is required by law to consider in this matter. Specifically, this brief addresses the requirements of Section 406(n) of the Environmental Quality Act and the corresponding burden of proof an applicant for a surface coal mining permit has in these proceedings.

SCOPE OF THE EQC'S DECISION

Pursuant to Section 406(p), the Council “shall issue findings of fact and a decision on the application” after the hearing. Notably, Section 406(p) specifies that the “decision on the application” made by the Council after a hearing is the same “decision on the application” that the DEQ Director would make if no informal conference or hearing is requested. Therefore, in the case where a hearing on a permit application is held, the Council steps into the place of the DEQ Director to make the “decision on the application.” The permit must still be granted or

denied by the DEQ as the issuing agency; however, that DEQ decision is made pursuant to the “findings of fact and decision of the environmental quality council.”

This means that the scope of the Council’s decision here is to decide the issues of fact and determine whether the Brook Mine permit application meets the requirements of the law and therefore whether the permit should be issued or denied, and if issued, under what conditions. *See Grams v. Env’tl Quality Council*, 730 P.2d 784, 786 (Wyo. 1986) (“On November 19, 1985, the EQC entered its order directing the LQD to issue a mining permit to AMAX.”).¹ It is not to merely determine whether the application is “complete” or “suitable for publication” or make other findings that are applicable at earlier stages in the permitting process.² Here, the “decision on the application” is the final decision on the application. Additionally, Section 406(p) does not limit the scope of the Council’s decision to the objections raised by the parties. However, given the evidence and testimony presented, the findings of fact issued by the Council will likely be tailored to the factual issues presented through evidence and/or discussed at the hearing.

The scope of the Council’s decision is particularly applicable here, when DEQ denied any additional public participation opportunities, such as an informal conference. If the informal conference had been held, DEQ would have made the decision on the permit application and issued or denied the permit *before* any contested case proceeding, and in that case, the proceeding before the EQC would have been more similar to an administrative appeal of a DEQ

¹ The Council has the power to “Order that any permit, license, certification or variance be granted, denied, suspended, revoked or modified.” W.S. § 35-11-112(c)(ii). While DEQ is the agency that implements the Council’s order, the Council has the power – and in this case, the obligation – to make an order directing the DEQ to grant or deny the coal mine permit.

² Although there was testimony as to the “technically adequate” or “technically accurate” determination by DEQ, these phrases do not appear in the Environmental Quality Act. The correct phrase is “suitable for publication.”

decision.³ That is not the case here. The only meaningful reading of Section 406(p) in this proceeding is for the Council to make the “decision on the application” – the *same* decision the DEQ Director would make if an informal conference was held or if no informal conference or hearing was requested.

APPLICABLE LAW⁴

In order to make “a decision on the application,” the Council must fully consider and apply Section 406 of the Environmental Quality Act, which governs the permitting process for new coal (and non-coal) mines. Portions of Section 406 relevant to the Brook Mine permit and the decision pending by the EQC are:

- Section 406(a) – detailing basic contents of the permit application;
- Section 406(b) – detailing substantive contents of the mining and reclamation plan required as part of the permit application;
- Section 406(e) – detailing the process for the initial completeness finding made by DEQ;
- Section 406(h) – detailing the process for DEQ staff review of the permit application and the process for DEQ staff to identify and resolve deficiencies;
- Section 406(j) – detailing the public notice process required;
- Section 406(k) – detailing the objection and hearing process;
- Section 406(n) – detailing the applicant’s burdens to demonstrate compliance with key parts of the state’s surface coal mining laws (further discussed below);
- Section 406(o) – preventing a permit to be issued to an applicant with outstanding violations; and

³ This procedural posture also dictates the burden of proof, discussed *infra*.

⁴ These statutory and regulatory provisions will be discussed in detail in the Resource Council’s forthcoming brief and proposed findings of fact and conclusions of law.

- Section 406(p) – detailing the decisions on the permit application made by the DEQ Director and the EQC (discussed above).

Other portions of the Environmental Quality Act applicable to the Brook Mine permit include Section 415(b), especially Section 415(b)(x) (alluvial valley floor protection), Section 415(b)(xi) (blasting requirements), and Section 415(b)(xii) (replacement of water supply), Section 416 (surface owner bond requirements),⁵ Sections 417(a)-(c) (reclamation bond requirements), and Sections 103(a) and 103(e) (definitions).

Portions of the DEQ Land Quality Rules and Regulations relevant to the Brook Mine permit and the pending decision by the EQC include:

- Chapter 1: Authority and Definitions;
- Chapter 2: Surface Coal Mining Permit Application Requirements, including Section 1 (General Requirements), Section 2 (Adjudication Requirements, including a description of other permits and steps taken to comply with the requirements for those permits, including MSHA permits and permits from other DEQ divisions), Section 3 (Vegetation Baseline Requirements), Section 4 (Other Baseline Requirements, including hydrology and geology baseline requirements that are of particular importance to this proceeding), Section 5 (Mine Plan, including identification and descriptions of mining activities, including processing facilities, blasting plan requirements, requirements for a “plan to ensure the protection of the quantity and quality of, and rights to, surface water and groundwater both within and adjacent to the permit area,” a probable hydrologic consequences determination, “[a]n evaluation of the impact of the proposed mining activities that may result in contamination, diminution, or interruption of the quality and

⁵ This section is applicable here because of the lack of surface use agreement with Big Horn Coal Co.

quantity of groundwater or surface water within the proposed mine permit area or adjacent areas that are used for domestic, agricultural, industrial, or other legitimate purposes,” and a road system plan – all of which are applicable to this proceeding), and Section 6 (Reclamation Plan);

- Chapter 3, Section 2 (Alluvial Valley Floor permit requirements);
- Chapter 3, Section 5 (Auger Mining permit requirements);
- Chapter 4: Environmental Performance Standards for Surface Coal Mining Operations – while these are operating standards, the permit application must contain conditions and information sufficient to demonstrate compliance with these standards;
- Chapter 5: Performance Standards for Special Categories of Coal Mining, including Section 3 (Alluvial Valley Floors) and Section 6 (Auger Mining);
- Chapter 6: Blasting – like Chapters 4 and 5, Chapter 6 contains operating standards, but the permit application must contain conditions and information sufficient to demonstrate compliance with these standards;
- Chapter 7: Underground Mining, including Section 1 (Permit Application Requirements), Section 2 (Performance Standards), Section 3 (Public Notice Requirements), and Section 4 (Surface Owner Protection);
- Chapter 12: Procedures Applicable to Surface Coal Mining Operations, including Section 1(a) (Permitting Procedures) and Section 2 (Bonding and Insurance Provisions); and
- Chapter 19: Required Studies for Surface Coal Mining Permit Applications, including Section 2 detailing requirements for the probable hydrologic consequences determination.

DEQ has also adopted a number of guidelines for coal mining. These guidelines are merely guidance documents that were not subject to notice and comment rulemaking, and as

such, they are not binding on the agency or the applicant and therefore are not requirements “the Council is required by law to consider.”

STANDARD OF REVIEW & BURDEN OF PROOF

The Council’s review of DEQ’s permitting decisions and of the permit application is *de novo*. See Order Denying Basin Electric Power Cooperative Inc.’s Motion to Dismiss Appeal at 7, Docket No. 07-2801; see also Appeal of 4W Ranch Objection to NPDES Permits, Docket No. 04-3801 (EQC Mar. 5, 2007) (“The EQC conducts *de novo* hearings pursuant to the DEQ Rules of Practice and Procedure, the Wyoming Rules of Evidence, and the Wyoming Rules of Civil Procedure.”). Under *de novo* review, the Council must look afresh or “from the new” at the permit application and should not afford deference to DEQ in issuing any findings of fact or in making the decision on the permit application.⁶

Under Section 406(n), “The applicant for a surface coal mining permit has the burden of establishing that his application is in compliance with [the Environmental Quality Act] and all applicable state laws.” The Wyoming Supreme Court has held that this burden extends to any hearing before the Council on a coal mine permit. *Grams*, 730 P.2d at 789 (citing Section 406(n) and holding “the burden of proof rests upon the applicant to show that the application is in compliance with applicable law.”). This burden of proof is especially relevant because, as discussed above, the Council must review the permit application *de novo*, as if reviewing the permit application for the first time. Similar to when DEQ reviews the permit application, the Council’s review must find that the permit applicant has met its burden of proof to demonstrate

⁶ While this standard of review also applies to administrative appeals of DEQ issued permits, it is especially applicable here where the scope of the Council’s decision is to make the decision on the permit application, a decision DEQ has not made.

compliance with the law and that no part of the permit application is deficient. *See* W.S. § 35-11-406(h).⁷

APPLICABILITY OF SECTION 406(n)⁸

As discussed above, the Wyoming Supreme Court has found Section 406(n) applicable to hearings on coal mine permit applications before the Council. Since the burden of proof is not separated from any other part of Section 406(n), a plain reading of the section dictates that the entirety of the section, including Sections 406(n)(i)-(vii), is relevant to the Council's review and "decision on the application."

In many ways, Section 406(n) is the heart of requirements for a surface coal mining permit as the requirements of the section were put in place to comply with the Surface Mining Control and Reclamation Act's ("SMCRA") main requirements for reclamation and protection of water resources.

Section 406(n)(i) dictates that the application must be "accurate and complete." This ensures compliance with Sections 406(a) and 406(b), as well as corresponding DEQ regulations, listed above, that spell out what must be included in a permit application.

However, 406(n) does not stop there. There is a not a period or an "or" after 406(n)(i). Instead, Sections 406(n)(ii)-(vii) must be considered as well. The only portion of Section 406(n) not relevant to this proceeding is Section 406(n)(vi) regarding requirements related to prime farmland, which is not present in the permit area.

⁷ "Deficiency" is defined in the Environmental Quality Act as "an omission or lack of sufficient information serious enough to preclude correction or compliance by stipulation in the approved permit to be issued by the director." W.S. § 35-11-103(e)(xxiv).

⁸ Like the rest of Section 406, this brief merely discusses the applicability of Section 406(n). Discussion of the applicant's compliance with this section will be included in the Resource Council's forthcoming brief and proposed findings of fact and conclusions of law.

While Section 406(n) explains that the “administrator” must find in writing that the requirements of the section have been demonstrated, in this proceeding, the Council will need to make those findings as DEQ has admitted that the administrator has not yet made any findings pursuant to the section. Moreover, DEQ witnesses testified that the administrator has a conflict of interest for the permit application and is therefore unable to make the findings. *See* Tr. at 283-84. These findings need to be made *before* the Council can make a “decision on the application,” as without them, the Council’s job will be impossible. A “decision on the application” cannot be made without first determining whether the requirements of Section 406(n) have been met. Therefore, since DEQ has yet to make the findings, the Council will have to make the findings as part of its review of the permit application and as part of its “decision on the application.”

Furthermore, DEQ’s overtures that the agency’s yet-to-be-finalized cumulative hydrologic impact assessment (“CHIA”) somehow prevents the DEQ or the Council from making any determinations regarding material damage to the hydrologic balance outside the permit area (Section 406(n)(iii)) or in determining impacts to alluvial valley floor hydrologic systems (Section 406(n)(v)) at this time is a red herring argument. DEQ’s CHIA is just that – *a cumulative assessment* – and it is a document separate from the permit application. *See* Tr. at 413.^{9,10} As such, it does not abdicate the applicant’s requirements to provide a probable

⁹ Of course, a DEQ witness admitted that normally the CHIA is finalized by the time of a public comment to afford an opportunity to raise objections on the CHIA – a process that did not happen here. Tr. 423-25. Had DEQ finalized the CHIA at a time to afford the public an opportunity to submit objections to it as part of this process, the parties likely would not be briefing this issue at all.

¹⁰ At times, DEQ conducts a CHIA regionally, while taking into account each mine’s individual contributions to the cumulative impacts. *See* Ogle, K.M., and M. Calle, 2006, *Cumulative Hydrological Impact Assessment (CHIA) of Coal Mining in the Southern Powder River Basin, Wyoming*, WDEQ-CHIA-19 (cited in the Bureau of Land Management’s Final Environmental Impact Statement for the Wright Area Coal Lease Applications, available at

hydrologic consequences analysis and determination under Chapters 2 and 19 of the coal program rules, nor does it excuse the applicant from its burden under 406(n) to design a coal mining operation that will prevent material damage to the hydrologic balance. To think otherwise would turn the *permit* requirements of Section 406 on their head, would threaten the state's compliance with SMCRA, and would effectively render the rather lengthy and expensive hearing process held by the Council meaningless.

Section 406(p) dictates that once there is a hearing before the Council, it is the Council that makes the "decision on the application," not the DEQ. Thus, there is no later opportunity for the DEQ to review the permit's compliance with Section 406(n). Compliance with Section 406(n) must be done now, as part of the Council's "decision on the application."

CONCLUSION

For the foregoing reasons, the Council should find that the permit applicant, Brook Mining Co., LLC, has the burden of proof in these proceedings to demonstrate that the permit application is not deficient and that it meets all of the relevant requirements of the law, including compliance with Section 406(n).

Dated this 26th day of June, 2017.

/s/ Shannon Anderson
Shannon Anderson
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934 N. Main St., Sheridan, WY 82801
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CERTIFICATE OF SERVICE

I hereby certify that on June 26, 2017, I served a copy of the foregoing **BRIEF** on the following parties by electronic mail, and through the EQC's electronic filing system, which will send a notice of electronic filing to all counsel and parties of record.

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Cc: csvect@hollandhart.com; ["Shannon Anderson"](#); ["Lynne Boomgaarden"](#); ["Jenny Wacker"](#); ["Clayton Gregersen"](#); ["andrew kuhlmann"](#); ["Jessica Curless"](#)
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1 BEFORE THE ENVIRONMENTAL QUALITY COUNCIL

2 STATE OF WYOMING

3 -----

4 IN RE BROOK MINE APPLICATION Docket No. 17-4802

5 -----

6

7 TRANSCRIPT OF HEARING PROCEEDINGS

8 VOLUME III

9

10 PURSUANT TO NOTICE duly given to all parties
11 in interest, this matter reconvened for hearing on the
12 24th day of May, 2017, at the approximate hour of
13 11:02 a.m., at the Sheridan College, Thorne-Rider Campus
14 Center, Room TRCC 008, 3059 Coffeen Avenue, Sheridan,
15 Wyoming, before the Wyoming Environmental Quality Council,
16 with Chairman David Bagley, presiding, and Council Member
17 Meghan Lally, Council Member Megan Degenfelder, Council
18 Member Tim Flitner, Council Member Nick Agopian and
19 Council Member Deb Baumer also in attendance.

20 Mr. Ryan Schelhaas, Wyoming Attorney General's
21 Office, Attorney for the Council; Mr. Jim Ruby, Executive
22 Director to the Council; Mr. Joe Girardin, Business Office
23 Coordinator, were also in attendance.

24

25

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24

25

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1 P R O C E E D I N G S

2 (Hearing proceedings reconvened

3 11:02 a.m., May 24, 2017.)

4 CHAIRMAN BAGLEY: All right. Let's take
5 our seats. And we are back in session. Good morning. It
6 is 11:02 a.m., May 24, 2017.

7 I am Dr. David Bagley, the hearing officer in
8 Docket 17-4802 in regards to Brook Mine, LLC. Present
9 today from the council are Tim Flitner, Meghan Lally,
10 Megan Degenfelder, Nick Agopian and Deb Baumer. Councilman
11 Fairservis has recused himself due to conflict.

12 Parties present today are, on behalf of Brook
13 Mine -- I will let you introduce yourself.

14 MR. POPE: Jeff Pope, Isaac Sutphin and
15 Tom Sansonetti.

16 CHAIRMAN BAGLEY: Thank you.

17 On behalf of DEQ.

18 MR. KUHLMANN: Andrew Kuhlmann and
19 James LaRock.

20 CHAIRMAN BAGLEY: Thank you.

21 On behalf of Powder River Basin Resource Council.

22 MS. ANDERSON: Good morning. Shannon
23 Anderson.

24 CHAIRMAN BAGLEY: Thank you.

25 On behalf of the Fishers.

1 MR. GILBERTZ: Jay Gilbertz with Yonkee &
2 Toner.

3 CHAIRMAN BAGLEY: Thank you.

4 And on behalf of Big Horn Coal.

5 MS. BOOMGAARDEN: Good morning.
6 Lynn Boomgaarden and Clay Gregersen, Crowley Fleck.

7 CHAIRMAN BAGLEY: Thank you.

8 Also present for the council are Jim Ruby,
9 Executive Officer; and Joe Girardin, Council Business
10 Coordinator; and Ryan Schelhaas from the Attorney General's
11 Office.

12 This hearing is being held in Sheridan College,
13 Room TRCC 008, in the Thorne-Rider Campus Center,
14 3059 Coffeen Avenue, Sheridan, Wyoming. There is a court
15 reporter present.

16 So we ended yesterday with completing with a
17 witness from DEQ, and I believe it is now time for DEQ to
18 call its next witness.

19 So, please, Mr. Kuhlmann.

20 MR. KUHLMANN: Thank you, Mr. Hearing
21 Officer.

22 DEQ will now call Dr. Muthu Kuchanur.

23 (Witness sworn.)

24

25

1 MUTHU KUCHANUR, PhD, PE,
2 called for examination by DEQ, being first duly sworn,
3 testified as follows:

4 DIRECT EXAMINATION

5 Q. (BY MR. KUHLMANN) Good morning. Can you please
6 state your name for the record.

7 A. Muthu Kuchanur, M-U-T-H-U K-U-C-H-A-N-U-R.

8 Q. Can you tell us what your current job is.

9 A. I am a geologist for division services of Land
10 Quality Division in Cheyenne. I have been in this job for
11 the past five years.

12 Q. Can you explain briefly what your duties are in
13 your current job.

14 A. I provide hydrogeology technical support for all
15 three Land Quality Divisions for the state of Wyoming.

16 Q. Tell us a little bit about your educational
17 background.

18 A. I have my PhD in environmental engineering from
19 Texas A&M. My doctoral dissertation focused on developing
20 and applying groundwater monitors to optimize and balance
21 the water usage for both economic growth and environmental
22 protection.

23 I have my master's in industrial engineering
24 from Texas A&M, and my bachelor's in mechanical
25 engineering from India. I'm also a licensed professional

1 engineer within the state of Wyoming.

2 Q. Can you tell us a little bit about your work
3 history.

4 A. After graduation I worked as consultant in
5 Albuquerque, New Mexico for five years. In my everyday
6 role as a consultant, I designed, developed, applied and
7 evaluated groundwater models, including various
8 objectives, including water rights, evaluation and
9 contamination indication from groundwater.

10 Q. Do you have any teaching experience?

11 A. Yes, I do. The Office of Surface Mining, as a
12 national level training program, trains the state and
13 federal government employees. I am the lead instructor
14 for groundwater modeling with Groundwater Vistas. And
15 that's the software that Brook Mine has used in its permit
16 application. Also I teach coal mine permitting hydrology,
17 quantitative hydrogeology and applied engineering
18 principles for the Office of Surface Mining.

19 Q. You previously testified before the EQC?

20 A. Yes. Once before.

21 Q. In what capacity?

22 A. I was the expert witness on -- from DEQ on the
23 Linc Energy Underground Research and Development License
24 Application.

25 Q. Turning now to the Brook Mine permit

1 application. Did you review any portions of the Brook
2 Mine permit application?

3 A. Yes. I specifically reviewed the groundwater
4 model that's in MP.3. And also I reviewed the groundwater
5 related sections in Appendix D6, the mine plan and the
6 reclamation plan.

7 Q. Pull up Exhibit DEQ 12, page 12-183. Can you
8 tell us what this part of the mine plan is?

9 A. This is the addendum in the mine plan that
10 describes some documents for the groundwater model that
11 was submitted by Brook Mine during their permit
12 application, and this is the document I reviewed.

13 Q. Have you reviewed groundwater models and permit
14 applications before?

15 A. Yes.

16 Q. How many groundwater models have you reviewed?

17 A. In the past 5 years with LQD, I have reviewed
18 about 10 groundwater models.

19 Q. During review of Brook Mine's groundwater model,
20 about how many review comments did you have?

21 A. I had a total of 97 review comments. And all of
22 my comments were not resolved in one round. There were
23 several outstanding comments. There was some back and
24 forth between me and the Brook Mine. There was some
25 comment responses interaction, and all these are

1 documented in the technical review comments I provided.

2 And by the end of review round number 4, all of my

3 comments were resolved.

4 Q. Related to your review of the groundwater model,
5 can you tell us what the objective of this groundwater
6 model is in the permit application?

7 A. The goal of the -- the goal of the groundwater
8 model is to characterize the groundwater impacts that
9 might potentially be caused by this proposed mine. And
10 one specific objective is to evaluate and identify the
11 water -- the impacts to the water rights that's adjacent
12 to the proposed mine.

13 Q. Who created the groundwater model in this
14 application?

15 A. The groundwater model was created by WWC
16 Engineering, a consultant of the Brook Mine.

17 Q. What did you review -- or what did you do to
18 review the groundwater model?

19 A. As part of my review, I did three specific
20 items. Item Number 1, I reviewed the methodology that's
21 provided by Brook Mine in this specific addendum, and
22 ensured that this methodology's adhering to the general
23 industry standard principles on groundwater modeling.

24 Item number 2, I reviewed the input data that's
25 into the -- that went into the model for technical

1 adequacy, and also ensure that it's representative of the
2 site-specific conditions that we see at Brook Mine.

3 Item Number 3, I ran the model, evaluated
4 the essence of the model, and ensured that it's
5 technically a reasonable tool to predict the future
6 impacts, and also reasonably representative of the current
7 conditions that you see at the site.

8 And if I had any comments during -- or questions
9 or clarifications during these three steps, I contacted
10 the mine and asked for clarification as part of the
11 technical review process.

12 Q. Can you provide an overview of the groundwater
13 model and the modeling process?

14 A. This is the most exciting part for me.

15 THE REPORTER: Just slowly.

16 A. So -- so Appendix D6, the baseline that we
17 discussed yesterday, provides a good conceptual
18 understanding of where the recharge zones are, where the
19 discharge for the groundwater is, how deep the coal seams
20 are and things like that.

21 After you get the conceptual understanding there
22 are eight distinct steps that Brook Mine followed in this
23 permit application. Step number 1, selecting a computer
24 modeling code. Step number 2, they discretized the grids
25 for the model. And step number 3, they defined the

1 boundary conditions for the model. Step number 4, they
2 provided the hydrologic input data into the model. Step
3 number 5, did the calibration of the model. Step number
4 6, model sensitivity analysis. And step number 7, that's
5 when they did the predictive simulations. And step number
6 8, the final step, is this model --

7 THE REPORTER: Is what?

8 THE WITNESS: Model documentation.

9 Q. (BY MR. KUHLMANN) I guess starting with step 1.
10 And you state that was selecting a computer code for the
11 model. What is the computer code used in the groundwater
12 model submitted by the Brook Mine?

13 A. The computer code that Brook Mine used in this
14 application is called MODFLOW. It's a --

15 THE REPORTER: I'm sorry. There's a mower
16 out there. I'm just distracted.

17 THE WITNESS: It's called MODFLOW,
18 M-O-D-F-L-O-W.

19 A. It's a three-dimensional finite difference
20 modeling code that was developed by USGS, and it's
21 maintained by USGS. It's an industry standard for
22 modeling groundwater conditions. So MODFLOW is the code,
23 the back end, where all the calculations and final
24 equations are done. And the front end that they use and
25 tracks with MODFLOW, that's called Groundwater Vistas.

1 That's the software that makes it a little easier for the
2 user to input all the stuff, all the input data, and look
3 at the results out of the model. So Groundwater Vistas is
4 the front end software and MODFLOW is the back end tool.

5 Both of these tools are pretty robust and widely
6 accepted. So, in other words, if Brook Mine was not using
7 MODFLOW, I'd be asking them the justification why they did
8 not chose MODFLOW.

9 Q. (BY MR. KUHLMANN) Just for the clarity of the
10 record, can you explain what the -- what you mean by USGS?

11 A. United States Geologic Survey.

12 Q. You mentioned step 2 is constructing the
13 structure of the groundwater model. What is involved in
14 this step?

15 A. So you can think of the step like pulling any of
16 the plat maps that you have here in front of you and then
17 taking a ruler and drawing rows and columns. So this is
18 the step that you discretize the whole area into grids.
19 So the reason why we do this is we want to like give the
20 input data, the geology structure into these grids to give
21 us an adequate representation of the site conditions.

22 So since we are talking about a three-
23 dimensional model, there are two -- two types of -- two
24 categories of discretization. One is the horizontal
25 discretization. That's the one that I said you pull your

1 map -- you pull your map and draw your grids into it. And
2 that's the horizontal discretization.

3 So in this model, if you look at -- from the
4 top, so you are looking at about 164 rows and 325 columns.
5 So that's a grid structure here. And if you look at the
6 permit, Brook's proposed permit, it's about 4500 acres.
7 And if you look at the modeling domain, they extend that
8 grid stop, it's about 38,000 acres. So it's about eight
9 and a half times more than the permit area of the Brook.

10 And the model was constructed this way because
11 they wanted to account for all the externalities and the
12 effect of the boundary conditions that you define outside
13 of the pages of the grids does not influence numerically
14 what you see within the permit boundary. So that's
15 Category 1.

16 And the second category is the vertical
17 discretization. Now you're going to take a slice of the
18 cross-section and then you are like trying to get the
19 vertical grids. So these vertical grids are going to
20 represent the aquifers of the geology units that might
21 potentially be impacted by proposed -- by the proposed
22 Brook Mine. So I think Dr. Bagley was getting to this
23 point yesterday.

24 So in this instance, we have introduced six
25 model layers or six units. Model layer number 1, that's

1 overburden of the alluvium. Model layer number 2, that's
2 the interburden unit that's going to separate this
3 overburden and alluvium to the coal seams.

4 The next coal seam that you're looking at is the
5 Carney coal seam. And in this area the coal seam is put
6 into two coal seams, depending on value of the area. So
7 the upper Carney coal seam is represented by layer number
8 3, and 4 would be the interburden of the noncoal unit, low
9 permeable that's going to separate the upper and the lower
10 Carney coal seams.

11 And there is also similar interburden that
12 separates the lower Carney and the Masters coal seam that
13 you're interested in. So to summarize, there are three
14 coal seams of interest: the lower, the upper Carney coal
15 seams, the Masters coal seam. So model layers number 2, 4
16 and 6 represent these coal seams. And the in between
17 layers, 1, 3 and 5, they are in general lower permeable.
18 They are noncoal seams.

19 So I said initially we discretized on the top
20 164 rows by 325 columns. So you're reading the same
21 structures for all six layers. So the total grids that
22 you're looking at in this model is about 325,800 grid
23 notes.

24 Q. And so just for clarify of the record, there are
25 a total of six model layers?

1 A. Yes.

2 Q. And I think you said the first model layer was
3 the alluvium and overburden?

4 A. Yes.

5 Q. And the second model layer I think you said was
6 the interburden?

7 A. Yes.

8 Q. And which was the Carney coal -- the upper
9 Carney coal seam?

10 A. That would be model layer number 3. I think
11 it's -- I think I got it incorrect identified. It's 2, 4
12 and 6 on the layers we're interested in. So 2 would be
13 the upper Carney.

14 Q. Thank you.

15 You mentioned step 3 in the modeling process was
16 model bound -- modeling the boundary -- sorry.
17 Establishing the model boundary conditions. What are the
18 different boundaries in this model?

19 A. So one of the critical decisions that the
20 modeler needs to make is where you stop modeling. Where
21 do you cut the model off and say this is --

22 THE REPORTER: Say this is what?

23 THE WITNESS: This is representative of the
24 site conditions.

25 A. So in this instance, if you look at the

1 bottommost layer, the Masters coal seam, the layer that's
2 below the shale. And that's pretty well documented, the
3 shale is the lower permeable unit throughout the Powder
4 River Basin. So there is very minimal interaction, if
5 any, between the lower coal seam in the Masters and the
6 shale. So the model stops at model layer number 6 because
7 there is not much interaction after that below.

8 And on the extents -- on the horizontal extents,
9 towards the northwestern portions of the permit boundary,
10 that's where the coal seams outcrop. So after that,
11 there's no coal seam. So they took it all the way to the
12 outcrops where the coal seams come to the surface. And on
13 the southern and the eastern edges of the boundaries,
14 that's where the coal seams dip and go deeper. So they
15 used the general head boundary condition in the MODFLOW
16 model to represent how water comes in and gets out in the
17 southern and eastern portion of the Brook boundary.

18 Q. (BY MR. KUHLMANN) Can you explain what a head
19 boundary is?

20 A. It's -- so based on the observe -- or the source
21 information, you can prescribe these are the water levels
22 at the boundaries. So that's one of the reasons we wanted
23 the boundaries to be like away from the domain of the
24 permit boundary of interest, because we know that there
25 are going to be uncertainties in these locations. We

1 don't want this to be impacting in any way the domain of
2 interest. So that's the reason we are further away from
3 these boundaries.

4 Q. You mentioned step 4 on providing the
5 hydrogeologic input data. Can you summarize the primary
6 input data used in this groundwater model?

7 A. So on to step, we have defined the grids, we
8 have prorated the top and the bottom elevation, geology
9 structure to the model. So if you can image, these grids
10 are flexible. It's going to like follow the -- the coal
11 depth, the thickness of the coal, and how it's getting
12 deeper once you get to the Tongue River. It's going to
13 tell you like how far it's from the top, the lands that
14 face all the way to the coal seam and how deep these units
15 are. So you've got the geology to the model. So in this
16 step is where you get the hydrology to the model. This is
17 where we are going to say like these are the hydraulic
18 parameters into the model. So like we can think of this
19 step as the marriage between geology and hydrology.

20 So in this step you tell the model what's the
21 hydraulic conductivity of the units, what's the storage
22 parameters, what's the recharge that's coming in from
23 precipitation. You represent the Tongue River in the
24 model, denote the geology fonts into the model. So this
25 is the place where you give all the parameters that

1 represent the hydrogeology.

2 Q. Is input data you just mentioned described in
3 the permit application?

4 A. Yes, it does. It's defined in the baseline
5 sections, Appendix D6. And also in the MP.3 and in the
6 mine plan.

7 Q. Moving on to step number 5. Calibration. Did
8 Brook Mine do a model calibration?

9 A. Yes, they did.

10 Q. What is model calibration?

11 A. So model calibration in oil and gas field, they
12 call it a history matching. So this is the step that we
13 ensure that the model has the ability to represent reality
14 of what you see in the ground. I just want to emphasize
15 the model is just a representation of reality. We do the
16 best we can to get to reality, but it's not -- it's not
17 what you see in the ground. So it's our best effort.

18 So this is step that we want to make sure that
19 the model represents reality. So we -- we take the
20 approach of like -- we also acknowledge the heterogeneity
21 in the aquifer. We acknowledge the variability in the
22 parameters. So, for example, we know from the free data
23 that's collected by the Brook Mine in the published
24 literature sources of hydraulic conductivity varies
25 between .1 and 1 feet --

1 THE REPORTER: .1 and what?

2 THE WITNESS: .1 and 1 feet per day, for
3 example.

4 A. So in this stage, you are trying to characterize
5 what's the effective parameter within this range -- within
6 this framework that's going to give the best match for
7 what you see on the water levels in the ground. So you
8 acknowledge this variable. Again, you're trying to get to
9 an effective parameter set, what's the best recharge,
10 what's the best fit for the hydraulic conductivity that's
11 going to be representative of the field conditions at this
12 stage in the model. Yes.

13 Q. (BY MR. KUHLMANN) What is step number 6, model
14 sensitivity analysis?

15 A. So I mentioned that during model calibration,
16 you're varied within this published framework that we
17 think is reasonable. But in model sensitivity analysis we
18 take step further because we want to understand -- we
19 don't want to just match stuff to what you see on the
20 ground, but we also want to understand how the system
21 behaves. So you try to take this up a notch, and you say
22 I'm going to weigh this hydraulic conductivity not just
23 between .1 feet -- .1 and 1 feet per day. I'm going to
24 vary this by an order of magnitude on either side, and I'm
25 going to see -- I want to see what's this impact on the

1 water levels. So you want to -- this is a step that helps
2 us to understand what's the effect of this parameters and
3 how sensitive are these parameters to the model that's of
4 interest to us.

5 Q. On step number 7, predictive simulations, can
6 you explain that step?

7 A. This is the step that we are reasonably assured
8 that we have a good handle on like what's representative
9 of the site conditions. You are going to jump from the
10 realm to present to future. So you are pretty reasonably
11 sure the model person -- what's -- what's at the site
12 right now. But we don't know what's the future's going to
13 be. So but what we know is the proposed mine sequence by
14 Brook Mine.

15 So at this stage we incorporate the mine
16 sequence into the model and say this is Trench Number 1.
17 This is how they're going to do over the years. And we
18 incorporate this into the model, into the predictive
19 simulations, and run the model into the future to look at
20 what's going to be the impacts.

21 Q. Getting to step number 8, model documentation,
22 where are the model -- modeling methodology input data and
23 results documented in the permit application?

24 A. Yes. In the MP.3 that you're looking at here,
25 that's the document that -- that summarizes all the seven

1 steps that the mine went through to get to this point.
2 And they reviewed this document just to ensure that if
3 someone wants to reproduce the results, we want to
4 document this as accurately as we can. So reproducibility
5 is a critical item, and all the steps are documented in
6 this step.

7 Q. Do the modeling approach followed by the mine
8 adhere to industry standards?

9 A. Yes. Specifically I used ASTM standards.
10 D5447, D54 -- okay. 5491 I want to say, but I think the
11 next one is 5609, 5611 and 5981. These are the standards
12 that I have applied for reviewing Brook Mine's
13 application.

14 Q. Go ahead and pull up DEQ Exhibit 36.
15 Dr. Kuchanur, I'll have you go ahead and take up the white
16 binder on the far corner of the table and turn to
17 Exhibit 36. I'll give you a moment to take a look at that
18 exhibit.

19 A. Yes.

20 Q. Do you know what this document is?

21 A. These are the ASTM Standards that I used in
22 reviewing the model.

23 Q. So those are the ASTM Standards you just named
24 in previous testimony?

25 A. Yes.

1 Q. What are the significant input data to the
2 groundwater model?

3 A. I'd like to highlight three pieces of
4 information. So the one -- item number 1 is the input
5 data that went into the -- into building the geology
6 structure of the model, to tell how deep the coal seams
7 are, like how -- what's the dipping rate and things like
8 that. So that's a key parameter.

9 Input parameter -- input on data set number 2,
10 that's the hydrologic input data that's going into the
11 model, the hydraulic conductivity, the recharge, the fault
12 locations, storage parameters. So that's data set number
13 2.

14 And data set number 3, the number of wells, the
15 wells that Brook Mine used to calibrate the model, that's
16 data set number 3.

17 So these are the three key input parameters I
18 would think for that particular model.

19 Q. For that third key piece of input data, you said
20 that number of groundwater -- groundwater wells had been
21 drilled by Brook. Does that provide groundwater level
22 data?

23 A. Yes, they do.

24 Q. Can you summarize the data used for building the
25 3D structure of the model?

1 A. So this is the -- this is the step where you
2 tell the top and the bottom elevations of all the six
3 layers of interest. So Brook Mine used about 300 -- or
4 evaluated 300 drill holes within the permit boundary. And
5 they used that information in building this geology
6 structure. So the 300 drill holes provide point location.
7 So we are looking at 4500 acres and 300 drill holes in
8 this acreage provides you an understanding of what's the
9 geology at this point location and this point location for
10 300 point locations.

11 But it doesn't tell you how to connect the dots.
12 So how do you connect one well to another? That why you
13 need the judgment from a professional geologist to connect
14 the dots and say this is how the geology moves along the
15 site. So the Brook Mine had like 14 different
16 cross-sections that dispersed throughout the site
17 connecting all the dots, telling us how the geology flows
18 in the site.

19 And also they have created thickness maps, what
20 we call isopach maps to tell us what's the thickness of
21 these coal seams. These are different ways of looking at
22 the same information, but it also gives a sense of
23 reliability and confidence into the input data that you're
24 putting into the model.

25 Q. You mentioned connecting the dots. Did Brook

1 Mine have a professional geologist connect the dots
2 between the holes?

3 A. Yes, on the cross-sections and documents that I
4 mentioned were stamped --

5 THE REPORTER: They were what?

6 THE WITNESS: They were stamped by a
7 professional geologist.

8 Q. (BY MR. KUHLMANN) And for the benefit of the
9 court reporter, can you please spell isopach maps?

10 A. I-S-O-P-A-C-H. Did I win the spelling bee?

11 Q. Absolutely.

12 After building the 3D structure, you mentioned
13 applying the hydrogeologic input data into the model.
14 What are the hydrologic -- hydrogeologic input data that
15 were used for this model?

16 A. There are three things that I would like to
17 opine here. Number one, the hydraulic conductivity and
18 the storage input data that went into the model. Brook
19 Mine did an aquifer test that gave us this information for
20 the Carney and the Masters coal seam. For Carney they
21 used .3 feet per day, and for Masters, they used .5 feet
22 per day. So this is the hydraulic conductivity data. And
23 they also calculated the storage parameters that went into
24 the model using this field -- field test data.

25 And the other -- the second piece of information

1 is the geology faults. These faults were mapped by
2 B. Barnum in this USGS study. So this is a published
3 information and they incorporated this information into
4 the model.

5 And the recharge -- the starting point for
6 recharge values that they used in calibration was from
7 Driscoll and Carter. That's also a published USGS study.

8 So to summarize, Brook Mine used literature
9 sources and the data that they collected in the field into
10 the model.

11 Q. You mentioned aerial recharge data. Were the
12 recharge rates applied to the project area adjusted during
13 the calibration?

14 A. Yes. They were within the range of values
15 that's available in the --

16 THE REPORTER: That's available in the?

17 THE WITNESS: In the literature. In the
18 literature.

19 Q. (BY MR. KUHLMANN) Regarding the third type of
20 input data that you noted, you said that was field
21 observed groundwater level data; is that correct?

22 A. That's correct.

23 Q. Can you summarize and explain how this data was
24 applied in the model?

25 A. Yes. So if you have in the medical profession,

1 X rays are the thing that gives you insight on what's
2 happening in the human body. And for me, as a groundwater
3 person, the groundwater wells tells me the information on
4 what's happening in the ground.

5 So Brook Mine has like 15 different groundwater
6 wells in the Masters and Carney coal seam. So they used
7 these 15 groundwater wells, the data from the wells -- the
8 water and the data from the wells to calibrate. So if you
9 look at the well that had highest water elevation and if
10 you look at the well that had lowest water level
11 elevation, the range that we are looking at is about
12 384 feet. So the difference between the highest and the
13 lowest point, in terms of water levels, is 384 points --
14 384 feet.

15 And if you look at the calibration statistics,
16 the mean error that's -- that's -- that's noted in the
17 model, to match these 15 different wells is about
18 3.8 feet. So I considered this a robust calibration
19 because they were able to represent the range that you see
20 in the field within an accuracy of 3 feet.

21 Q. And let me try to make sure I'm clear on what
22 you're representing there, is they looked at the actual
23 measured groundwater levels.

24 A. Yes.

25 Q. And then they ran the groundwater model.

1 A. Yes.

2 Q. And the -- the error of 3.63 feet that you
3 referred to, that's the error between what the groundwater
4 model predicted the level would be and what the actual
5 level was measured to be.

6 A. That's correct.

7 Q. And that's a relatively small amount of error?

8 A. Yes.

9 Q. Is there an area of the mine plan, that MP.3,
10 that summarizes the calibration targets and the residuals
11 and statistics?

12 A. Yes. There are figures and tables that show
13 this.

14 Q. How did you evaluate -- now that you talked
15 about what input data there was, how did you evaluate the
16 input data provided to groundwater model and to determine
17 if it was scientifically credible?

18 A. Typically, when I review models -- and in this
19 case, Brook Mine's model -- I ask myself five questions to
20 begin with. One is is the model adequately -- are the
21 parameters used in the model, are they consistent with
22 what they're telling me from the field.

23 Question number 2, are these parameters both in
24 the field and the model, are they consistent with the
25 published literature. And in this case, in Wyoming we are

1 fortunate with lots of coal mines, so I also asked of this
2 data that's collected by Brook Mine, is this consistent
3 with the information that's collected by other coal mines.

4 And, also, I mean, we need to acknowledge that
5 the hydrology has variability in all these input data that
6 goes into the model. So if that's the choice between like
7 .1 and 1 feet per day, for example -- the previous example
8 that I used in hydraulic conductivity, my preference is to
9 use the parameter that's going to give a conservative
10 estimate.

11 In our case, we are interested in drawdown. So
12 I'll be looking at a parameter that's going to give us
13 more drawdown than a parameter that's going to give us a
14 lesser drawdown. So I want to make sure all the
15 parameters are reasonably conservative within the range
16 that's acceptable.

17 And the last principle is the principle of --

18 THE REPORTER: Principle of what?

19 THE WITNESS: Parsimony, P-A-R-S-I-M-O-N-Y.

20 Q. (BY MR. KUHLMANN) Can you explain the principle
21 of parsimony?

22 A. Yes. The cornerstone of the principle of
23 parsimony from a groundwater modeling perspective is
24 pretty much don't make the model any more complex than
25 what's needed to represent what you see in the field and

1 it's monitored by the complexity of the site.

2 Sometimes, I mean, it's easy to make these
3 things pretty complex. So you can make it so complex that
4 you can't understand what the model's doing. So the
5 principle of parsimony essentially states don't make it
6 any more complex than what's needed.

7 So, for example, in this case, we have 15
8 different groundwater wells that Brook Mine used in
9 the application. So, for example, there is a model that
10 shows -- that has like 15 different groundwater wells, and
11 it has 15 different zones of hydraulic conductivity, with
12 the expectation that's it's going to help them to match
13 each of those values better to what you see at those wells
14 in terms of water levels versus another model that has
15 like one effective hydraulic conductivity parameter that's
16 going to provide an estimation on a -- the water levels
17 that's of similar match.

18 I put more weight on the model that has an
19 effective parameter that represents all the 15 wells
20 rather than the distinct individual zones that have
21 15 different hydraulic conductivity. The reason being
22 that we need to remember that the model is not just a tool
23 to represent what you see right now in the field. That
24 the primary goal is to represent -- or to get an
25 understanding and evaluate and characterize what's going

1 to happen in the future.

2 So to summarize, I think I'm -- some of you --
3 the principle of parsimony reminds me of don't lose the
4 forest for the trees. And I'd also like touch back little
5 bit on -- I said one of the things I ask myself is the
6 data that's used by Brook Mine consistent with the other
7 information that's collected by the coal mines. So one of
8 the things we have in the Division is a database that's a
9 collection of all the aquifer tests that's conducted
10 within the state of Wyoming by all the coal mines. So we
11 have about 500 aquifer tests that's conducted by different
12 coal mines throughout the state. I understand all the
13 coal seams are like different, they're conducted by
14 different companies, and there are like lots of
15 variabilities in the data set over time. We have
16 information all the way from 1970s to now.

17 I looked into this data set, and I have like a
18 readily available statistics all of this data set. And
19 the median for the coal aquifer of this data set is
20 .67 feet per day. So -- and then the value that's used by
21 .3 and .5. So that reasonably assures me, given all the
22 variability that I'm seeing, this is like one of the line
23 of evidence that tells me that the values that get used in
24 this -- used in this model are within the range.

25 Q. Just to clarify you mentioned the data was

1 available in the Division's database. Can you just
2 clarify which division?

3 A. Land Quality Division.

4 Q. I'll turn now -- I'll have us turn now to DEQ
5 page 12-248. And just have my colleague, Mr. LaRock, also
6 take a quick look at page 249 and 250.

7 Does the groundwater model state the predictions
8 that came out of it?

9 A. Yes. One of the key points of interest to us is
10 the drawdown that's going to be at the wells. And these
11 figures illustrate the drawdowns at the different coal
12 seams. The blue line -- the blue contours that you see
13 are the predicted drawdown and the -- the numerical value
14 that lies on top of these blue contour lines, they show
15 the magnitude of the drawdown. So, for example, if you
16 see a 10, so like at this location, it's about --

17 THE REPORTER: It's what?

18 THE WITNESS: It's about 10 feet.

19 THE REPORTER: Are you saying drawdown?

20 THE WITNESS: At this location, drawdown is
21 about 10 feet.

22 Q. (BY MR. KUHLMANN) I'll have you turn now to the
23 very next page, page 12-251. Can you tell us what this
24 document is?

25 A. Yes, this is the table that lists all the

1 identified water rights that's adjacent to the proposed
2 Brook Mine. And it lists what's the estimated predicted
3 drawdown at these well locations that have a water right.

4 So the last column that you see here that's
5 labeled Max Drawdown Feet, that tells you what's the
6 drawdown that's -- that will be caused by mining at these
7 well locations. So there is one value that indicates
8 25.8 feet, but everything else, all that you look at here,
9 they're like pretty much less than 2 feet or so of
10 drawdown.

11 Q. Are these drawdown impacts mentioned on the
12 table permit?

13 A. They are not permit.

14 Q. Does the mine plan or the groundwater model
15 discuss why they aren't permit?

16 A. Yes. The -- the groundwater model doesn't just
17 stop at the same stage in mining stage. It runs -- it
18 goes into the recovery stage. So after the mining is
19 done, the model also predicts what's the time it's going
20 to take for these wells to recover to premining water
21 levels.

22 Q. I'll have you turn to page 12-258. Can you tell
23 us what this section of the groundwater model is?

24 A. This is the section that talks about the
25 recovery that's estimated by the model.

1 Q. What does the -- what is the groundwater model's
2 estimate on the recovery period for the groundwater
3 levels?

4 A. So if you look at these drawdowns, the maximum
5 impact of the maximum drawdown's going to be at the
6 locations where you mine. So that's going to be the
7 location where maximum drawdown. Once you go out from
8 this location, the drawdown's going to decrease with the
9 distance. So the model estimates that the locations you
10 mine within the permit boundary, it's going to take 10 to
11 20 years for the Masters coal and Carney coal seams to
12 recover to within 10 feet of premining water levels.

13 Q. Does that rate of recovery -- is that like -- is
14 that different between the Masters and Carney coal seams?

15 A. Yes, they are. The Masters -- the Carney coal
16 seams, it's about 10 years, and the Masters, it's been
17 20 years.

18 Q. Does the -- does the groundwater model predict
19 estimated groundwater flow that will be intercepted during
20 the mining operations?

21 A. Yes.

22 Q. I'll have us turn to page 12-254. Can you tell
23 us what the table on this page is?

24 A. So this table predicts what's going to be the
25 pit inflow into the Brook Mine. So this tells what's the

1 potential -- what's the possible amount of groundwater
2 that Brook Mine will be intercepting during their mining
3 operations. So you have a year -- so Brook is proposing
4 to mine for 12 and a half years. So this table tells us
5 by year what's the amount of groundwater that -- that will
6 be intercepted by Brook Mine during their mining.

7 So if you'll look at this -- the maximum draw --
8 the maximum amount of pit inflow that you see here, it's
9 about year 7. It's about 98.9 gallons per minute. That's
10 the potential maximum groundwater that may be intercepted
11 by Brook Mine during mining.

12 Q. Is that number applied to a particular pit or
13 can you describe what that -- that number represents?

14 A. So as we know Brook -- Brook Mine is going to
15 follow a mine sequence. They're going to mine a certain
16 area in the year number 1, they're going to move on to the
17 second trench in year number 2, and they're going to
18 progress and follow the sequence. So, for example, if
19 you're looking at year number 7, this tells us the
20 cumulative impact of all the previous trenches that was --
21 that before year 7. It's a total of all the groundwater
22 that may potentially be impacted by Brook in year 7 based
23 on like the number of --

24 THE REPORTER: Based on the number of?

25 THE WITNESS: Based on the number of pits

1 that's open at the time.

2 Q. (BY MR. KUHLMANN) So that inflow represents the
3 total of all of the inflow that might be in the pits at
4 that time in the mine?

5 A. Yes.

6 Q. Does the groundwater model take into account
7 streamflow data?

8 A. The groundwater has a representation of Tongue
9 River into it, yes.

10 Q. Do you know where this -- that data was
11 obtained?

12 A. That data's also represented in Appendix D6, but
13 mine has used some of the information from the USGS
14 gauging stations that's available.

15 Q. Do you know what -- based upon the data, do you
16 know what the average annual flow was in that data for the
17 Tongue River?

18 A. So I think I'm going to like to provide the
19 council the context of the numbers that we are talking
20 about. And we're talking about 98.9, hundred and
21 thousand. And what does it mean in the practical context?
22 So if you look at the Tongue River. It's right next to
23 the proposed mine area. We have a -- we have a gauging
24 station from USGS that tells us what's the flow in this
25 river. We have -- we have a data set that gives us the

1 information for a ten-year period, from 2005 to 2015. So
2 we have a ten-year period of this information. So it's --
3 it's a decent data set for us to get a handle on what's
4 flows in the Tongue River.

5 So I looked into this data set and the minimum-
6 most flow that's in the Tongue River during this ten-year
7 period is 100 CFS. The maximum that I see is like 400
8 CFS. And the average is 200 CFS. And if I look into this
9 table, it says like 98.9 GPM. And this translate to .22
10 CFS. So Tongue River, even if you take the most
11 conservative case, the lower -- the -- the lowest flow
12 that's in the past 10 years is 100 CFS. And worst-case
13 that you look at the highest possible amount of
14 groundwater that Brook Mine would be intercepting, that's
15 .22 CFS. So 100 CFS in Tongue River, .22 CFS from Brook
16 Mine. So there is a magnitude two orders -- three orders
17 of magnitude of difference in flows here.

18 So it's important to keep in mind Brook Mine did
19 all this modeling work to characterize the .22 CFS that
20 they are intercepting. And I reviewed this model for its
21 accuracy of intercepting .22 CFS.

22 Q. You mentioned the heterogeneous nature of the
23 aquifer and the uncertainties in the groundwater model
24 input parameters. Based on your review of the model, how
25 would these uncertainties affect the model results?

1 A. The two parameters of interest for us in the
2 model is the drawdown that's going to be caused by the
3 proposed mine in what is the current water right and
4 what's the amount of groundwater that Brook Mine will be
5 intercepting. These are the two parameters of interest to
6 us. And both these parameters concern the heterogeneity
7 of uncertainty. Both these parameters will be impacted to
8 some extent. That is, we have -- we have acknowledged
9 there is variability and uncertainty from the model in
10 predicting these parameters of interest to us.

11 Q. Considering those uncertainties, are there any
12 additional mechanisms to protect nearby well owners in the
13 permit application?

14 A. In the LQD, Land Quality Division, over the
15 years we have always acknowledged when you're dealing with
16 Mother Nature, there is always going to be heterogeneity
17 and variability and it's going to be certain level of
18 uncertainty to the outputs that you're looking at from a
19 model. So, I mean, we did the best that we could in
20 reviewing the model, making sure it's technically
21 adequate, it's reasonable. But there's always the
22 potential that the model predictions may be off track,
23 even if the chance is slim or whatever, our confidence on
24 each -- on the predictions, we need to acknowledge this
25 uncertainty and we need to have --

1 THE REPORTER: We need to have?

2 THE WITNESS: We need to have backstop
3 mechanisms.

4 A. So the -- so the two back -- we have several
5 regulatory mechanisms that we can address these
6 uncertainties. And first parameter of interest, the
7 drawdown and its impact of that of just water rights. We
8 have a commitment that --

9 THE REPORTER: I'm sorry. Sorry.

10 A. So we have a -- we have required Brook to have a
11 commitment in the permit that says if the water rights --
12 if the groundwater rights are impacted by the proposed
13 mining, they need to provide a replacement source. So
14 that's a commitment that's struck by statute and it's in
15 the permit.

16 Item number 2, the amount of water that's --
17 that Brook's going to intercept, that is a variability and
18 we need to acknowledge that. So how we deal with that is
19 we have a set of three mechanisms I can think of. One is
20 the groundwater model in itself is not a once done sealed
21 document. We rely quite a bit on the annual -- the annual
22 reports that the mine needs to submit to us, the site
23 inspections, and we also require the mine to collect
24 monitoring information from these water -- from these
25 wells during mining.

1 So there is the during mining monitoring,
2 there's the LQD oversight in terms of inspections and
3 annual reports from the Brook Mine and reviewing and
4 commenting on those things. And item number 3, the
5 monitoring doesn't stop on the model -- the model
6 predictions doesn't stop the annual -- this stage we take
7 it all the way to post-mine monitoring. So even after the
8 mining is complete, Brook is required to monitor
9 post-mining after reclamation.

10 Q. (BY MR. KUHLMANN) Is that data that you just
11 identified incorporated into the groundwater model?

12 A. The -- can you rephrase the question?

13 Q. Yes. Is the groundwater model updated?

14 A. Yes. I would consider the groundwater model as
15 a living, updateable tool. So based on the information
16 that we -- that the Brook Mine submits to us during mining
17 and the information that we've been collecting in annual
18 reports, inspections, all this data will go into the
19 model, and if we see any deviation what the model was
20 designed for versus what you see in the field, we will
21 require Brook to update the mine application.

22 Q. I'll have us turn to page DEQ 12-064. You had
23 mentioned a monitoring plan. Can you tell us if this
24 document relates to that?

25 A. Yes. This is the section in the mine plan that

1 talks about the committed monitoring --

2 THE REPORTER: The what?

3 THE WITNESS: The committed monitoring by
4 Brook Mine.

5 Q. (BY MR. KUHLMANN) What is the frequency of the
6 collection?

7 A. We require Brook to collect quarterly.

8 Q. Talking about the second regulatory control you
9 mentioned, annual reports and site inspections. When does
10 the Land Quality Division require the mine to submit
11 annual reports?

12 A. It's a statutory requirement that Brook needs to
13 submit the annual report prior to within 30 days of the
14 anniversary of the permit. So every year, prior to within
15 30 days of the permit approval date, that they need to
16 submit the annual reports for our review.

17 Q. Does DEQ identify what information needs to be
18 provided in the annual reports?

19 A. There is a document. This is called the coal
20 annual report format that we use to guide coal mines to
21 provide the information that we would like to see in their
22 annual reports.

23 Q. I'll have us turn to DEQ Exhibit 29. And taking
24 a look at this page, as well as following few pages. Is
25 this the document that you were just mentioning?

1 A. Yes.

2 Q. This is the coal annual report format?

3 A. Yes.

4 Q. Could you -- I guess we'll turn to page
5 DEQ 29-014. Does this page identify groundwater data
6 that needs to be provided in an annual report?

7 A. Yes. I'd like to highlight the statement right
8 here. The bottom of this page that states "The operator
9 will provide a brief discussion of the data and state
10 whether data are trending toward or away from permit
11 projections in the Probable Hydrologic Consequences
12 section of the permit." So the modeling is a part of the
13 Probable Hydrologic Consequences section of the permit.
14 So the data that's provided by Brook Mine during the
15 annual reports are deviating from what's in the modeling
16 of the -- modeling section of the permit, then we'll be
17 asking Brook to provide an explanation why it's deviating
18 and what needs to be done to --

19 THE REPORTER: Done to --

20 THE WITNESS: Update the model.

21 Q. (BY MR. KUHLMANN) To clarify just for the
22 transcript where that statement that you just read was
23 located, was that statement in paragraph with the lower
24 case B in front of it on this page?

25 A. That's correct.

1 Q. You mentioned a third regulatory control, that
2 is post-mine monitoring. Is there a commitment from Brook
3 Mine for post-mine monitoring?

4 A. Yes.

5 Q. Can you tell us where in the permit application
6 that's located?

7 A. It's in the reclamation plan from the permit
8 application.

9 Q. We'll open up DEQ Exhibit 13 and turn to page
10 13-052. Can you tell us what this part of the reclamation
11 plan is?

12 A. This is the part where Brook commits to monitor
13 groundwater levels and water quality post-mining.

14 Q. What is the intent for post-mining groundwater
15 monitoring?

16 A. The intent for post-mining -- most mine
17 groundwater monitoring is to ensure that the groundwater
18 levels and groundwater quantity meets the approved
19 post-mining land use.

20 Q. How long does the Brook Mine -- how long is
21 Brook Mine required to collect this data?

22 A. We require Brook Mine to collect this
23 information until final --

24 THE REPORTER: Until final?

25 THE WITNESS: Bond release.

1 Q. (BY MR. KUHLMANN) Based on your review, during
2 the technical review of the groundwater model and those
3 areas of the permit application that you mention you
4 reviewed, did you determine that those portions of the
5 application were technically adequate, in your opinion?

6 A. Yes.

7 Q. Have you reviewed the objections filed relating
8 to groundwater -- or to the groundwater model and the
9 areas of the permit application that you reviewed?

10 A. Yes.

11 Q. Did you look at objections related to the trench
12 TR-1 -- TR-1 area?

13 A. Yes.

14 Q. What is your understanding and analysis of the
15 TR-1 area?

16 A. The TR-1 area, there is a specific cross-section
17 in the permit application that describes or helps me
18 inform what's happening in the TR-1 area. So that's the
19 document that I'd like to point the council to show my
20 understanding on what's happening in the TR-1 area.

21 Q. I'd like to open up Big Horn's Exhibit Number
22 14. Can you tell me if -- is this the document you were
23 referring to?

24 A. Yes. This is the document that I was referring
25 to. So even though it's a Big Horn Coal exhibit, I'd like

1 to point out the map that's used here is developed by
2 Brook Mine. It's part of the permit application.

3 Q. Okay. And you reviewed that figure during your
4 review of the permit as well as reviewing after the
5 objections?

6 A. Yes.

7 Q. Is there anything different on this exhibit than
8 is on the figure inside the permit application?

9 A. There is a red line here that's marked as
10 3600 feet elevation. You can see the red text here that
11 shows the exhibit number.

12 Q. Can you explain how this figure informs your
13 understanding of the TR-1 area?

14 A. So I guess I would like to point the scale that
15 we are looking at here, each of these intervals here
16 that's about 25 feet. So the darker shade that you see
17 here, that's the saturated backfill of the TR-1 area. And
18 this is a drill hole, a groundwater monitoring well that
19 was drilled by Brook Mine during their pre-investigation.

20 So this is the coal seam of interest to Brook.
21 This is the backfill. And then you see the Tongue River
22 here. And the red line here that shows -- that's put in
23 by Big Horn in their exhibit, 3600 feet, that shows the
24 water level in the saturated backfill and what's in the
25 Tongue River.

1 I also would like to point out the lighter blue
2 lines that you see here, those are the water levels, the
3 groundwater levels that, that are observed at these
4 monitoring wells by Brook. And the white space that you
5 see here, we can zoom in and take a look at it, but the
6 drill hole here shows what's in this --

7 Q. We'll just take a moment to zoom in. Please
8 continue?

9 A. These are lower permeable units, the clay,
10 claystone, siltstone, and there's some sandstone in here.

11 So one of the things that it informs me when I
12 was reviewing is -- I'm looking at these two water levels.
13 What's in the saturated backfill, what's in the Tongue
14 River, and also looking at like what's in the -- what's in
15 the -- what's in the coal seam. So I see a difference of
16 about 100 feet between the blue line that I see in the
17 well versus what I see in the Tongue River and saturated
18 backfill.

19 So I'd like to maybe simplify things. So, for
20 example, if you think like two tanks just laying on top of
21 each other. The top tank represents the Tongue River and
22 the saturated backfill, and the bottom tank represents the
23 coal seam that's of interest to Brook Mine. So if you
24 think there's a partition in between these two tanks that
25 separate these two tanks. If this partition is permeable

1 or porous, you would think at some point in time this --
2 the water levels in between break and you will see one
3 water level. One distinct water level that's
4 representative of the entire tank.

5 But in this instance, the fact is we are seeing
6 two distinct water levels. One is representative of the
7 coal, one is representative of the Tongue River and the
8 saturated backfill. So that tells me these two tanks are
9 not talking to each other. They are -- there is a
10 partition in there that separates these two systems.

11 There might be some minimal connection here. In
12 hydrology we -- hydrogeology we never want to say there's
13 no connection and rule it out there is some connection
14 there, but the water levels indicate they are hundred feet
15 apart. There is the other evidence that I see in the
16 materials that tells us that is clay -- claystone,
17 siltstone and low permeable materials. So this tells me
18 the story that these two things are not hydrologically
19 related.

20 Q. After reviewing the objections related to the
21 Tongue River TR-1 area and the other objections you may
22 have reviewed, and then looking back in the permit
23 application, in your opinion, are the groundwater model
24 and portions of application you reviewed still technically
25 adequate?

1 A. Yes.

2 Q. Did the objections reveal any minor technical
3 issues that could be corrected through a permit revision
4 after the permit is issued?

5 A. Yes. There was one issue that was point --
6 pointed our attention from the objectors. On -- on the
7 comment from the Brook Mine to replace groundwater rights.
8 That's one issue I think we need to correct.

9 Q. I'll have us open back up DEQ Exhibit 12 and
10 turn to page 12-062. Can you tell us if the area you were
11 mentioning needs to be corrected is on this page?

12 A. Yes. It's on the first paragraph. And I think
13 it -- here it says it's -- there is the Tongue adjudicated
14 water rights. We would like to remove "the Tongue
15 adjudicated" from this statement.

16 Q. What would that correction -- what would the
17 effect of that correction be?

18 A. So this correction will ensure that on valid
19 water rights that have a permit with the State Engineer's
20 Office would be replaced if they were impaired by Brook
21 Mine.

22 Q. Are adjudicated water rights just one type of
23 water rights?

24 A. I will not get into the SEO technology.

25 Q. But based upon your review, this correction

1 should be made?

2 A. Yes.

3 Q. Just to over -- to summarize overall, do you
4 believe, in your opinion, that the permit application is
5 technically adequate?

6 A. Yes, it is.

7 MR. KUHLMANN: Okay. Thank you. That's my
8 last question.

9 CHAIRMAN BAGLEY: Thank you.

10 Well, I don't know about you, but that works up
11 an appetite for me just listening to that.

12 So it is 12:10. Let us take an hour and
13 20 minutes and be back here at 1:30 to start
14 cross-examination. So we are recessed until 1:30.

15 (Hearing proceedings recessed
16 12:10 p.m. to 1:30 p.m.)

17 CHAIRMAN BAGLEY: All right. We are back
18 in session. I understand there's a question.

19 Ms. Anderson.

20 MS. ANDERSON: Thank you, Dr. Bagley. I
21 just wanted to ask the council if, given where we are in
22 the hearing process -- I'm sure aware we haven't even
23 completed DEQ witnesses -- if there's an ability of the
24 council to continue the hearing beyond I think it was
25 Friday at noon that we originally anticipated wrapping up,

1 just so all the parties are aware that we will have
2 adequate time to ask questions and call the witnesses we
3 need to call through the rest of the hearing.

4 CHAIRMAN BAGLEY: Yeah, we've been thinking
5 about that. We don't have a complete decision yet, but
6 my -- we weren't going to close the hearing on Friday at
7 noon anyway. And I think it's really important for
8 everyone to have a chance to comment and while we've been
9 going slow, I think it's actually been really useful to
10 hear all this information, have everybody have a chance to
11 ask questions. So we will -- we're not going to force an
12 ending arbitrarily Friday at noon, and if we need to
13 continue on, we will figure out a way to do that.

14 MS. ANDERSON: Okay. Thank you. I
15 appreciate that.

16 CHAIRMAN BAGLEY: Now, that said, people
17 can speed it up.

18 CHAIRMAN FLITNER: Mr. Chairman.

19 CHAIRMAN BAGLEY: Yes.

20 COUNCIL MEMBER FLITNER: Since a lot of
21 us -- I don't know about a lot of us -- I think a couple of
22 us -- three of us are going to be gone on Friday. If it
23 looks like on Thursday night we will not finish, would it
24 be a consideration, maybe, to not meet at all on Friday and
25 at least then more of us -- if you're not going to finish,

1 then postpone a larger share of the hearing so that maybe
2 more of us can get back for that extra testimony? At least
3 those of us that are going to be gone day and a half or day
4 of testimony at least can listen to it in person.

5 CHAIRMAN BAGLEY: That's a good suggestion.
6 We can make that decision probably about midday tomorrow.
7 We'll see how we're going. But thanks. That's a good
8 suggestion.

9 MR. POPE: Dr. Bagley, one quick
10 clarification on that issue. Will we have the opportunity
11 to comment if the council decides not to hold a hearing on
12 Friday? The concern -- the concern for Brook Mine is, as
13 the council's well aware, we feel this should have been a
14 20-day hearing.

15 CHAIRMAN BAGLEY: Uh-huh.

16 MR. POPE: It's gotten bumped and bumped
17 and bumped. And this seems like another occasion to bump
18 it further down the road. And if we had an original 20-day
19 hearing, we would have had a decision from the director in
20 just a matter of days. This would have already taken
21 place. The council would have issued findings of fact, and
22 somewhere, whether it's yes, no or yes with conditions. So
23 our concern is pushing this further down the line and
24 delaying the process even further. So we recommend the
25 council hold a hearing on Friday. And, frankly, we think

1 people are talking about relevant information and
2 proceeding in efficient manner, we can get it done by
3 Friday. And understanding that members of the council
4 won't be here. And I understand that concern as well, but
5 we -- we have an issue with getting permit and moving
6 forward.

7 CHAIRMAN BAGLEY: Sure. Thank you for that
8 feedback. So tomorrow -- tomorrow afternoon we will -- we
9 will revisit where we are and see what we need to do, but
10 we weren't going to close the hearing on Friday at noon
11 anyway. I was going to request closing statements to be
12 not presented on Friday, first -- so we -- we'll get it
13 sorted out.

14 But I do want to make sure, and I certainly
15 appreciate the urgency of Brook Mine, but I do want to make
16 sure that the public does have a chance to bring its
17 feedback in, and those who had objections get a chance to
18 do that, understanding your objection.

19 MR. POPE: Thank you, Dr. Bagley.

20 CHAIRMAN BAGLEY: All right. So let us now
21 continue with the cross-examination.

22 So, Ms. Boomgaarden, or your colleague.

23 MS. BOOMGAARDEN: Mr. Gregersen will
24 proceed with cross. Thank you.

25 CHAIRMAN BAGLEY: Thank you.

1 MR. GREGERSEN: Thank you, Mr. Chairman.

2 I notice the projector is not showing my screen.

3 MR. GIRARDIN: Just a second. Should be
4 turning on now.

5 MR. GREGERSEN: There we are.

6 CROSS-EXAMINATION

7 Q. (BY MR. GREGERSEN) All right. Hello,
8 Dr. Kuchanur. My name is Clayton Gregersen. I am here
9 with Crowley Fleck on behalf of my client Big Horn Coal
10 Company. You'll probably be happy to hear that I don't
11 think I have all that many questions for you. Most of the
12 issues that I have with the permit application and
13 groundwater were addressed by Mr. Kristiansen, and his
14 responses to those questions I believe are in the
15 transcript already. So for you I think we can keep this
16 pretty brief.

17 Okay. So I'm going to start out again on the
18 screen with Big Horn Exhibit 10 for your reference and for
19 the council's reference. Do you see this map?

20 A. I see it on the screen, yes.

21 Q. And do you recognize this map as being from the
22 Brook Mine permit application?

23 A. I cannot read the label here, the bigger name,
24 but I can see it from the application.

25 Q. Thank you. I think that's good enough.

1 MR. GREGERSEN: And for the record, it is
2 Exhibit MP.4 -- MP.4 from the permit application. It is
3 the Skittles map that's been referred to throughout this
4 hearing.

5 Q. (BY MR. GREGERSEN) And, Dr. Kuchanur, as you
6 may have gathered from being present at the prior
7 testimony, that one of my client's chief concerns is
8 that -- presenting here at the hearing today is the TR-1
9 area and the implications of the proposed mining
10 operations in that area. Are you familiar with the TR-1
11 area?

12 A. Yes, I am.

13 Q. And got the laser pointer. So you understand
14 the TR-1 area being this area, right here in Sections 15
15 and 22?

16 A. Yes.

17 Q. And so as I believe you discussed a little bit
18 in your direct examination, you understand the TR-1 area
19 as being an area where there will be a highwall trench cut
20 through that horizontal east-to-west oval, and then from
21 the bottom of that trench, they will go and mine panels
22 both north and south underground, correct?

23 A. That's correct.

24 Q. Okay. So now I want to turn to an exhibit you
25 referenced in your testimony. Big Horn -- BHC Exhibit 14.

1 Do you remember that?

2 A. Yes, I do.

3 Q. All right. And as you discussed, there is what
4 you refer to as saturated backfill material right here,
5 correct?

6 A. That is correct.

7 Q. And when you talk about saturated backfill, you
8 mean saturated with groundwater, correct?

9 A. That's correct.

10 Q. And now you also talked about this test well
11 that was drilled by Brook Mine and how it indicates on
12 light blue markings where there is groundwater in the coal
13 seams. Do you remember that?

14 A. Yes.

15 Q. Now, that well, although it goes through what
16 you've described as saturated backfill, it doesn't
17 acknowledge any groundwater in the saturated backfill,
18 does it?

19 A. This specific well that we are looking at,
20 screened in the coal seams.

21 Q. So it didn't acknowledge any of the groundwater
22 in the backfill, right?

23 A. So when I mentioned screened in the coal seams,
24 it's specifically designed to look at what's happening in
25 the coal seams, not in the saturated backfill.

1 Q. Thank you.

2 And so what you described as one of your reasons
3 for not being worried about the saturated backfill
4 material and the groundwater implications is that you
5 described a barrier and a lack of connect -- connection
6 between saturated backfill and that groundwater and the
7 groundwater in the coal seams, right?

8 A. Yes.

9 Q. So that barrier is basically the strata that's
10 in between the two areas, correct?

11 A. Yes.

12 Q. Now, as we just discussed, when looking at the
13 TR-1 area, Brook Mine's proposal is to actually cut a
14 trench cut through this backfill material, right?

15 A. That's correct.

16 Q. And so their trench will cut through that
17 separating strata between the groundwater and the
18 saturating backfill and the groundwater in the coal seams,
19 won't it?

20 A. That's correct.

21 Q. So then, in effect, that barrier you described
22 that gave you the comfort of knowing those water barriers
23 were separate and distinct, that will actually be cut
24 through and be done in a portion of this material, right?

25 A. Where the proposed mine trench is going to be at

1 that specific location, yes.

2 Q. Thank you.

3 Okay. So Dr. Kuchanur, as you testified, your
4 role in review of the Brook Mine permit application was to
5 review groundwater issues and particularly the groundwater
6 modeling; is that correct?

7 A. Yes.

8 Q. And it is your understanding that as part of the
9 mine permit application, Brook Mine was required to submit
10 data and analysis regarding groundwater, and this needed
11 to include the groundwater modeling, which would address
12 impacts that the mine operations might have on that
13 groundwater, right?

14 A. Yes.

15 Q. And I believe you also talked about how the
16 hydrological input and data from the modeling and the
17 information that it provided would be the foundation --
18 excuse me, the hydrological data and input from the
19 various wells drilled by Brook Mine would provide the
20 input and data for that modeling and also for your review,
21 right?

22 A. Yes.

23 Q. Okay. So over the last couple of days we've
24 heard a lot of testimony about whether DEQ personnel such
25 as yourself think the permit application is technically

1 adequate and complete, and a lot about how much time
2 people have spent looking at the application. But what I
3 want to do with you is actually go through with you
4 portions of the permit application and specifically some
5 portions that you referenced in your testimony. Does that
6 sound all right?

7 A. Sounds good.

8 Q. All right. So I believe you referenced Addendum
9 D6 at various points, and you reference that it outlines a
10 lot of the information in the model that you considered,
11 right?

12 A. Can you restate what's the reference that you're
13 mentioning?

14 Q. Yeah. So during your direct examination,
15 frequently -- or at least several times, I believe, you
16 referenced Addendum D6 of the permit application, correct?

17 A. Addendum D6.

18 Q. Yes. Or Appendix D6?

19 A. Appendix D6, yes.

20 Q. Okay. Thank you.

21 Now, I'd like to pull up a portion of that. And
22 I'll put it up on the screen here. And so you see the
23 D6.2 up at the top?

24 A. Yes, I do.

25 Q. And so this is part of the Appendix D6?

1 A. That's correct.

2 Q. And Section D6.2 is actually the groundwater
3 portion of Appendix D6, right?

4 A. Correct.

5 Q. So this section, as it goes through, discusses
6 the various aspects of the groundwater in the permit
7 application, right?

8 A. Correct.

9 Q. All right. So I'm going to go to the next page,
10 DEQ 6-024. And at the bottom of this page, I have a
11 sentence highlighted. I want you to follow along as I
12 read and tell me if I read this correctly. "No monitoring
13 wells were completed in the overburden or interburden as
14 no water was found in these units during drilling
15 operations."

16 And then ending on this page and going on to the
17 next page it says, "Addendum D5.2 contains drilling logs
18 and resistivity logs that demonstrate the overburden and
19 interburden are dry." Did I read that correctly?

20 A. Correct.

21 Q. Okay. And I've already talked to
22 Mr. Kristiansen about the reference material and whether
23 that material is actually accurate. But as you read this,
24 this pretty clearly states there are actually no
25 monitoring wells in any of the overburden and interburden,

1 correct?

2 A. Yes.

3 COUNCIL MEMBER FLITNER: Are we talking
4 about the overburden in whole mine or just TR-1 or -- I
5 mean --

6 Q. (BY MR. GREGERSEN) We're talking --
7 Dr. Kuchanur, we're talking about the overburden in the
8 entire permit area, correct?

9 A. That's correct.

10 COUNCIL MEMBER FLITNER: Because I think a
11 point of clarification needs to be made. I don't think
12 there's any debate that everything but TR-1 is dry. Is
13 that -- am I right there?

14 MR. GREGERSEN: Yes. I believe --

15 COUNCIL MEMBER FLITNER: So would it
16 clarify things if we kind of kept it to TR-1 on these water
17 issues so people kind of --

18 MS. ANDERSON: I'm sorry. Dr. Bagley,
19 objection to the interjection of Mr. Flitner. This doesn't
20 seem to be the right process for his questions.

21 COUNCIL MEMBER FLITNER: I don't care where
22 we keep it, but it's hard to keep track of which areas
23 we're talking about. So I'm just trying to get it clear in
24 my mind. I'm not trying to --

25 CHAIRMAN BAGLEY: Yeah. So let's make sure

1 it's clear that when we're asking the questions whether
2 you're referring to the whole permitted area or
3 specifically focusing on TR-1 so that we -- we can --

4 COUNCIL MEMBER FLITNER: Because they're
5 completely different.

6 CHAIRMAN BAGLEY: There's different
7 hydrogeologies throughout this system.

8 MR. GREGERSEN: Yes, Mr. Chairman, I will.

9 For clarification, right now I am talking about
10 the entire overburden anywhere.

11 Q. (BY MR. GREGERSEN) My next question actually
12 was, and so in that there is no modeling or monitoring
13 wells in the TR -- in the entire overburden area that
14 necessarily means there's no monitoring wells in the TR-1
15 area, correct?

16 A. There are no --

17 THE REPORTER: I'm sorry?

18 THE WITNESS: There are no monitoring
19 wells.

20 Q. (BY MR. GREGERSEN) All right. Now the next
21 section I want to take you to is DEQ Exhibit 12, which is
22 the mine plan, correct?

23 A. That's correct.

24 Q. So I put this on the projector. And MP.6, the
25 title of this is Probable Hydrologic Impacts, correct?

1 A. Yes.

2 Q. And so this -- this is a section that's going to
3 discuss those impacts and is actually something that's
4 specifically required by the DEQ rules and regulations;
5 isn't that right?

6 A. Yes.

7 Q. Okay. So Section MP.6.1 starts with surface
8 water. And if we go down a couple pages, we get to MP.6.2
9 which is groundwater, correct?

10 A. Yes.

11 Q. All right. Now, we're going to go one more page
12 down to MP.6.2.3, which is entitled Drawdown in the
13 Overburden. Do you see that?

14 A. Yes.

15 Q. And, again, this says "The overburden
16 encountered when installing the monitoring network was
17 primarily dry and is indicative of the Tongue River Member
18 of the Fort Union Formation in this area?"

19 The next sentence, "Drawdowns of the overburden
20 were not modeled and only isolated sands where encountered
21 are expected to be affected." Did I read that correctly?

22 A. You read that correctly.

23 Q. And so based on this, we can see that there were
24 no model -- there's no modeling done in any of the
25 overburden, correct?

1 A. This statement that you read could have been
2 phrased better. As in discussed in my testimony, the
3 overburden is represented in model layer number 1. This
4 statement, my interpretation is the drawdowns that you
5 assign the figures were not specifically shown as a
6 figure. So the model accounts for overburden.

7 Q. The model -- so this statement in the permit
8 application and mine plan is incorrect?

9 A. It could have been phrased better.

10 Q. But -- okay. So I just want to be absolutely
11 clear on this. This says the drawdowns of the overburden
12 were not modeled, but you say that they were modeled?

13 A. They are accounted --

14 THE REPORTER: They are what?

15 THE WITNESS: They are accounted in the
16 model. Accounted.

17 Q. (BY MR. GREGERSEN) Okay. And this also says
18 that the drawdowns in the overburden were not modeled
19 because they were isolated sands and effectively because
20 they were dry, correct?

21 MR. KUHLMANN: Asked and answered.

22 Objection.

23 CHAIRMAN BAGLEY: Yeah, I agree. Let's go
24 ahead and move on.

25 Q. (BY MR. GREGERSEN) So basically what I'm

1 getting at here is these portions that we've reviewed
2 suggest that the overburden is absolutely dry, right?

3 A. I think we want to be specific about the area
4 that we are looking at. In general, it was not listed
5 portions of the permit that's dry. When you get to the
6 Tongue River, it's not.

7 Q. Okay. And that's contrary to what's written
8 here in the mine plan?

9 A. That's not my understanding.

10 Q. Okay. Well, I guess to sum this up, you've
11 acknowledged to me that the overburden in the TR-1 area is
12 actually saturated and wet, right?

13 A. The overburden in the TR-1 area is saturated,
14 yes.

15 Q. And what I'm getting at here is the mine permit
16 application doesn't ever address that, does it?

17 A. The model that's in the mine permit considers
18 the TR-1 area and it's in the model.

19 Q. The TR-1 area is in the model?

20 A. Yes.

21 Q. And the overburden and the -- the saturation of
22 that overburden is in the model?

23 A. Spatially TR-1 area and everything with the --
24 acres --

25 THE REPORTER: I'm sorry. The what acres?

1 THE WITNESS: The 4500 acres of the
2 proposed Brook Mine permit and 38,000 areas that's outside
3 the permit, it's not listed in the model, so we did not --
4 the model did not exclude the TR-1 area.

5 Q. (BY MR. GREGERSEN) But does the model
6 contemplate the saturation of the overburden in the TR-1
7 area?

8 MR. KUHLMANN: Objection. Asked and
9 answered.

10 CHAIRMAN BAGLEY: Yeah, I agree. The
11 answer is it does. That's what I've heard several times.

12 Q. (BY MR. GREGERSEN) Okay. So I'll ask the next
13 question. Can you tell me where in the permit application
14 that information is present?

15 A. It's back -- the modeling layers of this -- the
16 overburden's in there. And then there are figures showing
17 the cross-section within the modeling section, and it
18 shows the overburden that's in the model.

19 Q. Do you have any specific portion of the mine
20 plan or the permit application you can point me to?

21 A. I can't think of --

22 THE REPORTER: You can't?

23 THE WITNESS: I cannot think of it right
24 now.

25 Q. (BY MR. GREGERSEN) Okay. But we can agree that

1 the permit application stated there was no monitoring
2 wells in the overburden in the TR-1 area, correct?

3 A. That's correct.

4 Q. Okay. So what I want to show you now is a
5 portion of DEQ rules and regulations. And this is, as you
6 can see from Chapter 2, Permit Application Requirements
7 for Surface Coal Mining Operations. Do you see that?
8 It's up here in the top. In the top box.

9 A. Yes.

10 Q. Okay. And so this is Section 4 of that chapter,
11 Other Baseline Requirements. Do you see that?

12 A. Yes, I do.

13 Q. All right. So we're looking at subsection (a),
14 which is right below that, which, to summarize, says that
15 the lands within the permit area need to be described.
16 And then it goes on in various subsections to say what
17 that description needs to consist of. Is that your
18 understanding?

19 A. Yes.

20 Q. So we're going to go down to subsection (xii),
21 which is highlighted on the screen. Do you see that?

22 Excuse me.

23 A. Yes.

24 Q. And so this says that it needs complete
25 information on the groundwater which may be affected in

1 the permit area and adjacent areas, correct?

2 A. Correct.

3 Q. Okay. And as we just discussed, there was no
4 mod -- there may be modeling contemplated in the TR-1
5 areas based on its coverage, but there's actually no
6 monitoring wells in the TR-1 area, correct?

7 A. Correct.

8 Q. And you acknowledge that area actually has
9 groundwater in it?

10 A. Correct.

11 MR. GREGERSEN: Thank you.

12 I'll confer with my co-counsel here and see if I
13 have any follow-up questions.

14 Dr. Kuchanur, I don't think I have any more
15 questions.

16 THE WITNESS: Thank you.

17 MR. GREGERSEN: Thank you.

18 CHAIRMAN BAGLEY: All right. Thank you.

19 Ms. Anderson.

20 MS. ANDERSON: Thank you, Dr. Bagley.

21 CROSS-EXAMINATION

22 Q. (BY MS. ANDERSON) Good afternoon. You have
23 said that the permit is technically adequate, correct?

24 A. Correct.

25 Q. Okay. But yet you testified a little earlier

1 about the adjudicated versus permitted wells issue for
2 water wells, correct?

3 A. Correct.

4 Q. And that you -- it's your opinion that the
5 permit needs to be changed to remove the word
6 "adjudicated," correct?

7 A. Correct.

8 Q. How did you determine that was -- I think your
9 phrase was "a minor technical issue."

10 MS. ANDERSON: We can just wait? I'm not
11 ready for technology at this point.

12 Q. (BY MS. ANDERSON) So to repeat the question.
13 How did you determine that to remove the word adjudicated
14 would be a minor technical issue?

15 A. So not sure, but if we have a specific page that
16 cites that definition that I testified to. The specific
17 sentence also was the statute. So the sentence -- the
18 statute is clear. We need to replace --

19 THE REPORTER: I'm sorry?

20 THE WITNESS: We need to replace all
21 impaired water rights by any monitoring.

22 Q. (BY MS. ANDERSON) Would you agree that's an
23 important part of the statute?

24 A. It is.

25 Q. And particularly important for nearby landowners

1 whose water wells may be impacted by the mining, correct?

2 A. Correct.

3 Q. So is it minor regarding the replacement of
4 those water wells?

5 A. It's minor in the sense we, as a division, rely
6 on the statutes. And the permit comes next. So if the
7 permit contradicts the statutes, the statute wins. We can
8 leave it up to the council to discuss that, but my
9 understanding statute is over rights and everything else.

10 Q. Okay. That makes sense.

11 So I guess how will this change -- that's an
12 important point then. How will that change be made in the
13 permit application?

14 A. I have recommended the change after I reviewed
15 the objections. I leave the process to the permit
16 coordinator and the supervisors to decide what the process
17 is.

18 Q. Okay. So you said you made a recommendation.
19 Where is that recommendation recorded?

20 A. We have discussed this change internally. And
21 the council is the place that I'm making this
22 recommendation to.

23 Q. Okay. So you're making the recommendation to
24 the council, and you're asking the council to do something
25 with that in their decision?

1 A. We are acknowledging that this is a
2 recommendation we make.

3 Q. Okay. Have you contemplated making it a
4 condition of approval of the permit application?

5 A. I would not give the details of the process.

6 Q. Okay. That's fine.

7 All right. So have you ever heard the phrase
8 "garbage in, garbage out" in relation to a model? For
9 instance, a scientific model.

10 A. Yes.

11 Q. Okay. Would you agree generally that that
12 phrase is used to mean that a model is only good -- as
13 good as the data you put into it?

14 A. Correct.

15 Q. Okay. So you talked a lot in your testimony
16 about, you know, some holes in the ground -- I'm going to
17 use a very unscientific phrase for that -- that provided
18 some data. Hundreds of wells, right?

19 A. That's correct.

20 Q. Okay. But would you agree that those holes in
21 the ground were actually just bore holes drilled for the
22 exploration of the coal resource?

23 A. That table that I referenced in my testimony
24 lists a lot of bore holes, and they were drilled for lots
25 of purposes, that includes historical holes too. So...

1 Q. But generally they were drilled only into the
2 coal seam, correct?

3 A. They go --

4 Q. They do go deeper.

5 THE REPORTER: They go what?

6 THE WITNESS: They go deeper.

7 Q. (BY MS. ANDERSON) Deeper but not shallower.

8 A. There are like 300 drill holes in the table, and
9 covers a lot of ground in terms of depth.

10 Q. Okay. So how many monitoring wells drilled
11 specifically for the purposes of delineating baseline and
12 groundwater were drilled for this permit application?

13 A. So I'd like to clarify the process that we took.
14 I was involved in reviewing the permit after the permit
15 application was submitted in November of 2014. And before
16 that our District 3 staff -- Mr. Kristiansen was involved
17 in discussions with the mine on where do we set up the
18 baseline and this is the baseline, things like that.

19 So I'm not exactly sure about what the details
20 of those discussions, but for my review of the groundwater
21 model, I relied on 15 specific groundwater level
22 elevations.

23 Q. Okay. So 15. Not hundreds, necessarily?

24 A. For groundwater levels, yes.

25 Q. Okay. Kind of along those lines of questioning,

1 how many site-specific data values did you collect or did
2 the permit applicant collect for hydro -- hydraulic -- I'm
3 going to butcher this, sorry -- hydraulic conductivity?

4 A. There was one aquifer tested that was conducted
5 by Brook Mine, and that was done during the
6 pre-application phase of the --

7 Q. Okay. So one test?

8 A. That's correct.

9 Q. Okay. And where was that test done?

10 A. That was done within the permit boundary towards
11 the northeastern sections of the permit.

12 Q. Okay. And which geologic units?

13 A. The coal seams were the ones tested during these
14 aquifer tests.

15 Q. Okay. So the coal seams. Okay.

16 How many site-specific data for -- oh, man --
17 specific yield did you -- did the permit applicant
18 collect?

19 A. So --

20 Q. And storage coefficient.

21 A. Storage?

22 Q. Yes. That's --

23 A. Okay. I wanted to make sure that --

24 Q. That's the phrase that I'm supposed to be saying
25 here. Yes, storage.

1 A. The storage parameters that was used in the
2 model was also calibrated from this aquifer.

3 Q. Okay. So that same test?

4 A. Yes.

5 Q. Okay. So why did you feel confident of -- that
6 the permit application used a single value for hydrologic
7 connectivity [sic], storage coefficient and porosity to
8 characterize the entire coal seam?

9 A. I'd like to step back a little bit here and
10 explain the process. We need these parameters to
11 characterize the aquifer. One is just to have data
12 points, and the other one is the point -- the process of
13 applying the data points in the model. As I mentioned
14 before, I am looking for an effective parameter that
15 provides the best match to the -- to what you see in the
16 ground in terms of water levels. If this one aquifer
17 test -- I'm not going to speak for Mr. Kristiansen -- but
18 they went through this pre-application phase and they
19 decided that this is the most appropriate location to
20 conduct this test.

21 And if this test is going to provide effective
22 parameter that the model is able to match the field
23 conditions, initial data, as a scientist, it's good to me,
24 but as regulator I think it's technically --

25 THE REPORTER: It's technically?

1 THE WITNESS: It's technically adequate for
2 the modeling purposes.

3 Q. (BY MS. ANDERSON) Okay. Did I just hear you
4 that you draw a distinction between what's good for a
5 scientist versus what's good for a regulator?

6 A. So data is always good. I mean, we all know
7 that we have hypotheses, even if it's well accepted. We
8 like to increase our confidence over time with more and
9 more and more data. But -- but I think we also need to
10 realize, as a regulator, that rules and regulations set
11 requirements for us to evaluate and get a good starting
12 point for a mining application. That's where we are.

13 Q. Okay. So does it kind of go back to the minimum
14 standards that Brook was talking about in their opening
15 statement?

16 A. It does not. I mean, in this instance,
17 specifically the modeling, this provides the information
18 I'm looking for. The value that additional data points
19 are adding to the model at this point are diminution
20 value.

21 Q. And I'm sorry I don't have technology ready
22 for you. So could you turn to Exhibit 12 of DEQ's at
23 page 213. This is the mine plan at 213.

24 Sorry to make you do this. I just can't display
25 my screen right now.

1 A. Did you say 213?

2 Q. Yeah, 2 -- 2-1-3.

3 A. I'm on page 213.

4 Q. Okay. Great. Do you see the last sentence of
5 that first full paragraph on page 213?

6 A. Yes.

7 Q. Okay. Would you agree that it reads,
8 "Limitations and assumptions specific to this modeling
9 effort are primarily due to the complexity of the
10 hydrogeologic system and a lack of data on physical and
11 hydraulic characteristics of the aquifers and confining
12 units being modeled." Do you see that? Am I in the wrong
13 spot?

14 A. Seems -- the last sentence that I have in this
15 page?

16 Q. No, the last sentence of the first paragraph.
17 Sorry. Yeah, up at the top there. So limitations and
18 assumptions starting that sentence.

19 A. Yes.

20 Q. Okay. Great. So it reads "Limitations and
21 assumptions specific to this modeling effort are primarily
22 due to the complexity of the hydrogeologic system and a
23 lack of data on physical and hydraulic characteristics of
24 the aquifers and confining units being modeled, as
25 described in detail within this report." Would you agree

1 that's what that sentence says? Just yes or no whether
2 that's what it says.

3 A. Yes. That's what it says.

4 Q. Okay. Would you agree with that statement?

5 A. There are limitations in the model. There are
6 assumptions in the model. I agree with that, yes.

7 Q. In the course of your review of the permit
8 application, did you identify any other limitations of
9 this modeling effort that you believe is not captured
10 within the sentence?

11 A. I don't think so.

12 Q. You don't think so. Okay.

13 Did you identify any other assumptions that you
14 had to draw to complete this modeling effort?

15 A. Can you please restate the question?

16 Q. In the course of your review of the permit
17 application did you identify any other assumptions that
18 you had to draw to complete this modeling effort that's
19 not captured within this sentence here?

20 A. This sentence is just one of 60 pages of the
21 model, so I cannot state this sentence represents what you
22 see in the 60 pages and all the documents I reviewed.

23 Q. Okay. Would you agree there were a lot of
24 assumptions drawn for these of this model?

25 A. There are assumptions. I would not choose to

1 qualify a lot.

2 Q. A lot.

3 More or less than other permit applications
4 you've reviewed?

5 A. Nothing stands out to me.

6 Q. Okay. Could you turn to page 192 of that
7 exhibit. Are you there?

8 A. Yes.

9 Q. Okay. Do you see the last sentence of the last
10 full paragraph on that page starting with "Exploration
11 data"?

12 A. That's correct. Yes.

13 Q. Okay. And would you agree that it reads,
14 "Exploration data within the project area to date provides
15 a limited understanding of the coal location, continuity
16 and hydrology." And in the sentence after that reads,
17 "This model was therefore constructed to provide a general
18 understanding of regional groundwater impacts." Would you
19 agree that's what that says?

20 A. That's what it states here, but in my opinion
21 that could have been phrased better.

22 Q. It could be phrased better.

23 A. Yes.

24 Q. How would you phrase it?

25 A. This model provides adequate information to

1 understand what's happening at the field right now and act
2 as a good --

3 THE REPORTER: I'm sorry?

4 THE WITNESS: Act as a good predictive
5 tool.

6 A. So I would like to step back and just like
7 contemplate just a little bit here to provide contextual
8 understanding of these kinds of statements and modeling
9 reports. As I said, there are like 164 rows and 325
10 columns of grid and 319,800 grid notes. So for a modeler,
11 it's pretty hard to say when you don't have a distinct
12 data points for each of those grid notes. So it becomes
13 pretty subjective what you call a limited understanding
14 versus an adequate understanding of the --

15 THE REPORTER: Of the --

16 THE WITNESS: Geographic area of interest.

17 Q. (BY MS. ANDERSON) Okay. But this is the words
18 from the permit applicant themselves, right?

19 A. That's correct.

20 Q. On the purpose of their model, right?

21 A. That's correct.

22 Q. That it was for a general understanding of
23 regional groundwater impacts, right?

24 A. Correct.

25 Q. Okay. So given that, how can this model

1 accurately -- be accurately used to predict site-specific
2 conditions with a measure of certainty?

3 A. I would not like to repeat all the things that I
4 said in the direct, but a lot of information went into
5 building this model, testing the model, adhering to the
6 industry standards. Based on that reasoning, I believe
7 that this --

8 THE REPORTER: I'm sorry. You believe?

9 THE WITNESS: I believe that the model is
10 an adequate representation of the field conditions.

11 Q. (BY MS. ANDERSON) Okay. You talked a little
12 bit about, I guess, the uncertainty. And I think you used
13 a phrase of like 3 feet or something like that.

14 A. The error?

15 Q. Yeah, the error?

16 A. That was observed in the model values.

17 Q. Okay. What is the uncertainty or the error
18 associated with the model results?

19 A. So when you have a specific observation model
20 well -- for example, if it says the water level at this
21 well is a hundred feet, the model can predict plus or
22 minus 3 feet -- plus or minus.

23 THE REPORTER: 3 feet?

24 THE WITNESS: 3 feet to the hundred feet.

25 Q. (BY MS. ANDERSON) And is that true throughout

1 the permit area?

2 A. That's the -- that's what we call the mean
3 error. So that's the average error on an average that you
4 see within the permit boundary.

5 Q. Okay. So what's the high range of the error?

6 A. I have to go to the table and look at it. I
7 can't recollect the exact number.

8 Q. That's fine. I don't know where that page is
9 either, so we're fine with that.

10 Okay. Would you agree generally that the -- the
11 alluvial aquifer is an important aquifer in this area?

12 A. Yes.

13 Q. Because it serves for a water source and is
14 important to agriculture?

15 A. Yes.

16 Q. Okay. So why did you sign off on a permit as
17 being technically adequate, then, when there weren't any
18 monitoring wells constructed in that alluvium?

19 A. I cannot go into the details of the
20 pre-mining -- or the pre-application phase. And the
21 monitoring that was seen because I was not involved in
22 those discussions.

23 Q. Okay. So you just took the data that you got.
24 You didn't have the ability to ask for more?

25 A. From the modeling perspective, I did not need

1 that information.

2 Q. Okay. So you -- in all the rounds of comments
3 we talked about, you never said, Hey, let's get some more
4 data here. Let's characterize this the right way.

5 A. I definitely asked for justification for the
6 information that they provided in the permit.

7 Q. Okay. But you never asked for more data?

8 MR. KUHLMANN: Objection. Asked and
9 answered.

10 MS. ANDERSON: Okay.

11 Q. (BY MS. ANDERSON) Now that you've had a chance
12 to review the permit application and the objections, would
13 you, in your opinion, consider monitoring the alluvium
14 important?

15 A. Monitoring in the alluvium is important. And
16 the mine has committed --

17 THE REPORTER: I'm sorry.

18 A. The mine has committed to three monitoring wells
19 in the Tongue River alluvium.

20 Q. (BY MS. ANDERSON) Okay. And that's going to be
21 another one of these kind of minor technical fixes, I
22 think is how they've been phrased?

23 A. It is not. It's in the permit application.

24 Q. Okay. How does the model and your review of it
25 and use of it handle the saturated overburden in the TR-1

1 area?

2 A. It represents as a geologic unit --

3 THE REPORTER: I'm sorry.

4 THE WITNESS: It represents -- it's
5 represented in the model as model layer number 1.

6 Q. (BY MS. ANDERSON) Okay. So you seem to be a
7 pretty important part of the permit review process given
8 the importance of groundwater in the area, so I'm going to
9 ask you the same question I asked Mr. Kristiansen. Did
10 you feel at any time pressure related to review of the
11 permit application, given the statutory deadlines that
12 DEQ has to meet for its rounds of technical review?

13 A. No, I did not.

14 Q. You did not. So after that first round, it's a
15 30-day review period, right?

16 A. Yes.

17 Q. For all the other rounds?

18 A. Yes.

19 Q. And that's enough time to run the models, check
20 the data, do all the work that you have to do?

21 A. I did all the work in 30 days.

22 Q. All right. Must be some late nights that you
23 have going on there at DEQ.

24 MS. ANDERSON: All right. Thank you.

25 That's all the questions I have.

1 THE WITNESS: Thank you.

2 CHAIRMAN BAGLEY: Thank you.

3 Mr. Gilbertz.

4 MR. GILBERTZ: Thank you.

5 CROSS-EXAMINATION

6 Q. (BY MR. GILBERTZ) Good afternoon, Doctor.

7 A. Good afternoon.

8 Q. I have a few questions to cover with you. I --
9 so I do not forget to, I would like to follow up for a
10 moment on a couple of questions that Ms. Anderson had
11 asked. If I understand correctly, the hydraulic
12 conductivity and the storage coefficient for the entire
13 4,500 acres was developed from one well site, correct?

14 A. Correct.

15 Q. And if I have understood the testimony of the
16 DEQ correctly in these proceedings, this is an area that's
17 geologically fractured and highly variable.

18 A. Yes.

19 Q. If additional wells were drilled for purposes of
20 testing the hydraulic conductivity and storage
21 coefficient, those could give us different results as a --
22 because of this fractured and variable geology, correct?

23 A. Depends on how you define different.

24 Q. Okay. And if we had significantly different
25 findings in those wells and you plugged them into your

1 model, it would have the opportunity to confound and crash
2 the model, correct?

3 A. Can you please restate the question?

4 Q. Sure. If you have a model and you start showing
5 that the hydraulic conductivity and the storage
6 coefficient differ significantly in a short distance, that
7 is a confounding problem for the model, isn't it?

8 A. Not sure it's not.

9 Q. But it can, can't it?

10 A. Not sure why it would be.

11 Q. Okay. Yet what we don't have in this is
12 anything but one well in all of this fractured and
13 variable geology to apply that one hydraulic conductivity
14 and storage coefficient across the entire acreage,
15 correct?

16 MR. KUHLMANN: Objection. Didn't sound
17 like a question to me.

18 MR. GILBERTZ: It was a question. Question
19 mark.

20 CHAIRMAN BAGLEY: Could you repeat the
21 question, please.

22 Q. (BY MR. GILBERTZ) So what we have is this. One
23 well that establishes the hydraulic conductivity and
24 storage coefficient across the entire 4,500 acres, even
25 though you acknowledge that this is a fractured geology

1 and variable, correct?

2 A. Speaking from a modeling perspective, the test
3 was one aspect of the lines of evidence that I looked
4 into.

5 Q. But it is an important piece of data, is it not?

6 A. It is.

7 Q. In fact, you couldn't have the model without
8 that data?

9 A. No, you couldn't, you cannot have the model.

10 Q. And then one more follow-up. You have mentioned
11 that the DEQ is now willing to say that these registered
12 water wells be covered by the commitment for replacement,
13 correct?

14 A. Correct.

15 Q. Will the stipulation also state that DEQ has the
16 ability to enforce that stipulation and order the operator
17 to drill the wells or supply the replacement water?

18 A. We have a process in place that's called State
19 Engineer's -- State Engineer's Office's process. That's
20 the process that we need to go through.

21 Q. DEQ will not retain the right to tell the
22 operator that it has determined a water source has been
23 impaired by its operations and is obligated to supply
24 replacement water; is that right?

25 A. All water rights that are impacted will need to

1 be replaced.

2 Q. And will DEQ retain the authority to order the
3 operator to supply the replacement water? I'll tell you
4 why I'm struggling with this, Doctor. I have represented
5 landowners when the operators have commitments to supply
6 replacement water and we have spent years in litigation
7 fighting over whether or not it is their obligation to do
8 so. So I'm wondering whether DEQ will retain the
9 authority to direct the operator to supply replacement
10 water.

11 A. I'm not -- I'm not familiar with the process.
12 I'm not in a position to address the question.

13 Q. Thank you.

14 Now I do want to talk about your model for a few
15 minutes. We know now that you have no baseline data for
16 the alluvial valley floors, correct?

17 MR. KUHLMANN: Objection. I think it's a
18 mischaracterization.

19 Q. (BY MR. GILBERTZ) For the alluvium --

20 CHAIRMAN BAGLEY: Wait a minute.

21 MR. GILBERTZ: He's right. It's not --
22 it's not a mischaracterization. It's a poor question.

23 CHAIRMAN BAGLEY: Yeah. Rephrase your
24 question.

25 Q. (BY MR. GILBERTZ) We have no baseline data for

1 the water in the alluvium in the valleys, correct?

2 A. We don't have monitoring wells in the Tongue
3 River, yes.

4 Q. Okay. Very good.

5 And you have told us that the alluvium is an
6 important aquifer for the region, correct?

7 A. Yes.

8 Q. Okay. Now, a day or so ago I was visiting with
9 other folks from the DEQ about impacts on the alluvium and
10 there was a discussion of how the coal in certain areas is
11 exceedingly dry. So I want to visit about that for a
12 moment. Your testimony is that the water modeling that
13 has been done is something that we can scientifically rely
14 on, at least to some degree, right?

15 A. Correct.

16 Q. Okay. Good. So I'm going to go to DEQ 12. I
17 need to get to the particular maps so people don't get
18 dizzy. Here we go.

19 So I have a map here, which is DEQ 12-246. Do
20 you see this map?

21 A. Yes, I see it.

22 Q. This is part of the water modeling, correct?

23 A. That's correct. Yes.

24 Q. Okay. So I'm going to blow it up and make it
25 easier for us to look at. Oh, come on. There we go. Now

1 we got nice and clear.

2 So on this particular map, as you have told us,
3 these blue lines coming out represent the drawdown of the
4 coal seam aquifer, correct?

5 A. That's correct. Yes.

6 Q. And that's the -- this is what the model tells
7 us we can reasonably expect, correct?

8 A. Correct.

9 Q. And you told us earlier that, for example, here
10 where it says 10, that that represents a 10-foot drawdown,
11 correct?

12 A. Correct.

13 Q. And then here where we see 20, that is a 20-foot
14 drawdown?

15 A. That's correct.

16 Q. Okay. And we can see that our blue line
17 drops -- this red line -- do you recognize the red line
18 passing through the map and partially through the
19 concentric rings being representative of the interstate?

20 A. Can you please restate that question?

21 Q. Yeah. The red line that goes from the corner of
22 the map up, that's the interstate, right?

23 A. Yes.

24 Q. Okay. And so just to get a conceptual idea of
25 this, we can look and see that the line extends down here

1 even to the extent of touching the Tongue River itself,
2 correct? You see that as the Tongue River coming up,
3 looping through here?

4 A. Yes.

5 Q. Okay. And then back up across the interstate,
6 right?

7 A. Correct.

8 Q. Okay. So just for a second here, then, I want
9 to say this area that we've just been talking about,
10 roughly inside of this green highlighted portion, what you
11 have just been discussing, correct?

12 A. Correct.

13 Q. Okay. Good. Now I'd like to take that and
14 compare that to something else because we now have an
15 indication of 10 and in some instances 20 feet of drawdown
16 extending beyond the interstate.

17 Let's go back to a DEQ exhibit, and that will be
18 16. And do you recognize this area labeled as potential
19 AVF acreage to encompass that same area that I just
20 identified the model showing a 10-to-20-foot drawdown in?

21 A. Yes.

22 Q. And you were -- you've been here during the
23 course of these proceedings, right?

24 A. Yes.

25 Q. And so you've heard the discussion earlier that

1 there has been the general agreement that the Carney seam
2 subcrops into the Tongue River alluvium -- alluvium,
3 correct?

4 A. Correct.

5 Q. Let's talk then a bit more about the notion of
6 whether there's water in this upper portion of the Brook
7 permit acreage. And then I'm going to go back to DEQ 12.
8 All right. And this is Table 4.9-1. Do you see that?

9 A. Yes.

10 Q. You were visiting about this with us earlier
11 about this demonstrating the drawdown that might happen
12 for particular wells.

13 A. That's correct. Yes.

14 Q. Okay. So let's blow up our top portion just a
15 little bit here for us. And I will try to do this. I'm
16 positive I can. I'll highlight two wells up here at the
17 top. These are the two I'd like to visit with you about.
18 The first well on the list has a Wyoming well -- that's a
19 Wyoming State Engineer's designation of that well,
20 correct?

21 A. Correct.

22 Q. And we see down on the end that it is predicted
23 to have a 7.4-foot drawdown in that well?

24 A. Correct.

25 Q. That could be very significant for that well,

1 correct? Its productivity?

2 A. Depends on a lot of factors.

3 Q. Depends on where the wells sit?

4 A. How deep it is.

5 Q. How much aquifer is at that location?

6 A. Yes.

7 Q. Okay. The next one we have on the list, which
8 is P48251W, whiskey. And we see that one has a drawdown
9 of 25.8 feet, correct?

10 A. That's correct. Yes.

11 Q. Okay. Let's find out where those wells are.
12 Just a second. All right. I should start with this
13 shrunk and tell everyone that we are now talking about
14 DEQ 12-253. I've highlighted the identification of a well
15 on that map. You see that, Doctor?

16 A. Yes, I do.

17 Q. And that is the well number and location for the
18 well that's going to suffer 25-foot -- almost 26-foot
19 drawdown according to the model, correct?

20 A. Yes.

21 Q. And the one that is going to suffer the
22 7-or-so-foot drawdown is the one that I've highlighted
23 here, correct?

24 A. Yes.

25 Q. You would agree with me that both of those wells

1 are outside the permit boundary?

2 A. Yeah. They are outside --

3 THE REPORTER: I'm sorry?

4 THE WITNESS: They are outside the permit
5 boundary, yes.

6 Q. (BY MR. GILBERTZ) And so they will be
7 materially impacted by these drawdowns, correct?

8 MR. KUHLMANN: Objection. Speculative.

9 CHAIRMAN BAGLEY: Yeah. Rephrase.

10 Q. (BY MR. GILBERTZ) Do you know whether they'll
11 be materially impacted?

12 A. Can you define materially impacted, please?

13 Q. Well, will this harm the quantity or quality of
14 water that these wells are capable of producing?

15 A. So when you have a well that's 250 feet deep, if
16 this is going to cause 25-foot drawdown, depending on the
17 water column, still you can meet the livestock demands for
18 this well.

19 Q. You know, in fact, that this model has been
20 developed focused solely on the Carney itself, right?

21 MR. KUHLMANN: Objection. It's
22 argumentative.

23 MR. GILBERTZ: What's the objection?

24 CHAIRMAN BAGLEY: The model --

25 MR. GILBERTZ: I'll solve it. Let's do it

1 this way. We're going to stick right in that same exhibit.

2 I don't want anybody speculating.

3 Q. (BY MR. GILBERTZ) Right here on page 12-240,
4 the highlighted portion down here it says "Some of the
5 wells are believed to be completed over multiple water
6 bearing intervals, but model impacts are reported as if
7 they are only completed in the coal seams of interest."
8 Do you see that?

9 A. Yes.

10 Q. So, therefore, the drawdown for these two wells
11 I've just been talking about have been modeled as if the
12 only impact is the drawdown from the coal seam of
13 interest, right?

14 A. That's not correct.

15 Q. Okay. Why is that not correct?

16 A. So the statements here indicate that these wells
17 potentially might be completed in separate zones, not just
18 not coal seams. But the model assumed on the water that's
19 going to come out of this well is going to come from the
20 coal seam. So it's a conservative assumption. So it's
21 limiting the water production to the thin coal seams that
22 we are talking about, given that you have 200 feet of
23 other zones that the well might be getting its water from.
24 So it's a conservative assumption for modeling purposes.

25 Q. Right. So you and I said the same thing in

1 different words. So this model predicts that that -- that
2 well, if completed in the coal seam, is going to suffer
3 25-foot drawdown.

4 A. So when you drill a well, you look at the
5 water level -- you look at the water level pre-mining,
6 you look at the water level post-mining. The difference
7 is 25 feet.

8 Q. Okay.

9 A. If you look, that well is like 200 feet deep.
10 You still have the rest of the column to provide stuff
11 like that you need for the demands.

12 Q. So then on the wells that we've been --

13 A. And I'd like to highlight that the 25 feet is
14 the one-year value --

15 THE REPORTER: I'm sorry.

16 THE WITNESS: The one-year maximum value
17 that's about 10 feet.

18 Q. (BY MR. GILBERTZ) So --

19 A. So we are looking at an extreme case here.

20 Q. So in these two wells, the one thing you cannot
21 say because you don't -- let's go about it more precisely.

22 The first well on our list here, you do not know
23 how deep that well is, correct?

24 A. The table here shows the depth.

25 Q. You do not know which seam it is completed --

1 which aquifers it is completed into, correct?

2 A. This table does not have that information.

3 Q. Okay. And, therefore, you cannot tell us that
4 drawing down the water table at that well by 7.4 feet will
5 not have a material impact to that well, correct?

6 A. Can you please restate the question?

7 Q. Because you do not know these things, you cannot
8 tell us that drawing down this well by 7.4 feet will not
9 materially impact this well?

10 A. We know the well is 180 feet deep.

11 COUNCIL MEMBER FLITNER: How many?

12 THE WITNESS: 180 feet.

13 CHAIRMAN BAGLEY: Just a minute.

14 THE WITNESS: In the third column.

15 CHAIRMAN BAGLEY: Did you have a comment?

16 COUNCIL MEMBER FLITNER: I just didn't hear
17 how many feet it was.

18 CHAIRMAN BAGLEY: Okay. Sorry.

19 A. So that's 180 feet. That's the well depth.
20 This is the drawdown. And in general we know how -- how
21 deep our -- from the land surface where you see the
22 groundwater. So this will tell us the 7.4 feet is going
23 to affect us or not.

24 COUNCIL MEMBER FLITNER: Do we know the
25 level of water or the water table is? Is it 100 -- you

1 know, is it 160 feet? Is it a hundred feet? Do we know
2 what those values are?

3 THE WITNESS: This table does not provide
4 us that information, but we have that information.

5 COUNCIL MEMBER FLITNER: You do have it.

6 THE WITNESS: It's in maps that we can look
7 at.

8 COUNCIL MEMBER FLITNER: Okay.

9 Q. (BY MR. GILBERTZ) And on the next one, the
10 25.8 feet. That's almost the entire depth of the Carney
11 seam, right?

12 A. We are discussing about two different things.
13 One is thickness of the coal seam and the thickness of the
14 water column. Two different things.

15 Q. Right. The thickness of the coal seam, if it is
16 the aquifer, is only about 25 feet.

17 COUNCIL MEMBER FLITNER: Mr. Chairman.

18 CHAIRMAN BAGLEY: Yes.

19 COUNCIL MEMBER FLITNER: We're spending a
20 lot of time on this. And I think it's a good concept. I
21 mean -- but I think that it would shorten this discussion
22 if we knew -- I mean, because it could be a moot point.
23 With the discussion we're having now, we don't know whether
24 these wells are affected or not. And we can argue all day
25 about --

1 MR. GILBERTZ: That's fine.

2 COUNCIL MEMBER FLITNER: -- there will be
3 or whether be won't. If that information's out there,
4 let's get the information and then we know and the
5 discussion's over one way or the other. I'm not
6 interesting in going back and forth on things we can never
7 answer.

8 Q. (BY MR. GILBERTZ) I'll do it this way. As you
9 sit here today, you cannot tell us any more about these
10 wells other than these are the drawdowns anticipated by
11 the mine?

12 A. This table just shows that information.

13 Q. Okay. And then -- oh, and then we know that
14 these wells that are predicted by the model to suffer
15 these drawdowns if completed in only the Carney seam are
16 located up in -- up in this general area. Right up here,
17 just outside the permit boundary, right? We just
18 established that on our other map.

19 A. The locations of the wells, yes.

20 Q. Okay. And that's up in this area that we heard
21 yesterday the coal was completely dry, yet the model
22 predicts these drawdowns?

23 A. That's not the area that's dry.

24 MR. GILBERTZ: Okay. No further questions.

25 Thank you.

1 CHAIRMAN BAGLEY: All right. Thank you,
2 Mr. Gilbertz.

3 Mr. Pope.

4 MR. POPE: Thank you, Dr. Bagley.

5 CROSS-EXAMINATION

6 Q. (BY MR. POPE) Dr. Kuchanur, thank you very
7 much. I'm sure being subjected to cross-examination by a
8 bunch of lawyers is not the most fun thing in the world.
9 But I want to make sure that we're clear on a couple of
10 points, because I think we're losing the forest through
11 the trees, to borrow your phrase.

12 To pick up where you were discussing with
13 Mr. Gilbertz about drawdowns in the water table, does
14 Appendix D6 contain potentiometry maps that show water
15 surface elevation contours?

16 A. Yes, it does.

17 Q. And is that the type of information Council
18 Member Flitner was referring to in deciding where the
19 water level is in this area?

20 A. Exactly.

21 Q. And Appendix D6 is in the permit, correct?

22 A. Yes.

23 Q. Sticking with the theme of losing the forest for
24 the trees. You discussed in your direct testimony the
25 concept of parsimony, correct?

1 A. Correct.

2 Q. And as you explained it, it was we don't want to
3 make models too complex, otherwise we're not going to have
4 an accurate understanding; is that fair?

5 A. Just to rephrase, added complexity does not
6 translate directly into an increased accuracy.

7 Q. And, please, Dr. Kuchanur, if I mess up the
8 science, please correct me. I became a lawyer so I can
9 avoid science.

10 The -- the goal of the groundwater model within
11 Brook's permit application, was to figure out what is
12 going on with the groundwater across the entire mine
13 permit boundary, correct?

14 A. Correct.

15 Q. And in your opinion, the model in the permit
16 application was able to do that.

17 A. Yes.

18 Q. Correct?

19 And we've heard some discussion about number of
20 wells, number of bore holes, but I think you testified on
21 direct that you had access to other data sources. Is that
22 correct?

23 A. Yes.

24 Q. Did you use those data sources in analyzing and
25 filling in the alleged gaps the objectors have presented?

1 A. I have looked into other information that helped
2 my understanding and to inform myself, yes.

3 Q. Let's talk very briefly about trench TR-1. I
4 want to clear up a few issues there. The material that
5 Mr. Gregersen was discussing with you is saturated
6 backfill; is that correct?

7 A. Yes.

8 Q. Okay. Help me understand that. Is that
9 material native to that area?

10 A. It's not.

11 Q. What is it?

12 A. That's the mined-out area. It was backfilled by
13 Big Horn.

14 Q. Is saturated backfill considered an aquifer for
15 purposes of your review?

16 A. Can you restate the question, because the
17 definition of aquifer is very scientific, so --

18 Q. Sure. Actually, why don't I just go ahead and
19 tell you the definition and you can -- we can go from
20 there. So aquifer is defined in Chapter 1, Section 2, as
21 a zone stratum or group of strata that stores and
22 transmits water in sufficient quantities for specific use.

23 Using that definition, is saturated backfill
24 considered an aquifer?

25 A. The saturated backfill does not have any

1 production wells, so it's currently not acting as a source
2 of water.

3 Q. So is it fair to say, then, based on what you
4 just said, if Brook were to remove that material
5 temporarily, it would not be disturbing an aquifer?

6 A. It will not be disturbing an area that's
7 providing active source of water supply.

8 Q. Fair enough.

9 Very briefly I want to, again, ask you about
10 something you heard from Mr. Gregersen, he represented to
11 you that he had discussed some issues with
12 Mr. Kristiansen, and I believe what he was referring to
13 was a discussion about Round 1 Comment 11 from you to
14 Brook about data and justification. You remember hearing
15 that discussion with Mr. Kristiansen?

16 A. Yes, I do.

17 Q. And groundwater hydrology and hydrogeology is
18 your area of expertise, correct?

19 A. Correct.

20 Q. So you were the one who analyzed Brook's permit
21 application and provided that comment and analyzed the
22 response, correct?

23 A. That's correct.

24 Q. Okay. Were you satisfied with Brook's response
25 to that comment?

1 A. If I was not satisfied --

2 THE REPORTER: I'm sorry?

3 THE WITNESS: If I am not satisfied, I will
4 not accepting the response.

5 Q. (BY MR. POPE) Just a few more questions for
6 you, Dr. Kuchanur.

7 Mr. Gilbertz was showing you a map of potential
8 areas of drawdown near the Tongue River. Do you remember
9 that?

10 A. I do.

11 Q. Okay. To your knowledge, is there a hydrologic
12 connection between the surface water in the Tongue River
13 and the water in the Carney seams in the area you were
14 looking at?

15 A. Can you please restate the question?

16 Q. Absolutely. In the area we were looking at with
17 Mr. Gilbertz, there were those concentric rings with 10,
18 20 indicating a drawdown of water, correct?

19 A. Correct. Yes.

20 Q. And some of those rings got -- it got near the
21 Tongue River, right?

22 A. Correct. Yes.

23 Q. And what I'm curious about is the water, the
24 potential drawdown will occur in a coal seam, correct?

25 A. That's correct, yes.

1 Q. Is there a connection -- a hydrologic connection
2 between the coal seams in that area and the surface water
3 in that area?

4 A. I'd like to go back to my tanks analogy. Based
5 on my tanks analogy, water level stage elevation that you
6 see in the Tongue River district and what you see in the
7 coal aquifers. So based on my review of the information
8 that's in the permit application, I don't think there is
9 hydrological connection.

10 MR. POPE: Thank you, Dr. Kuchanur. I have
11 no further questions.

12 THE WITNESS: Thank you.

13 CHAIRMAN BAGLEY: It is 2:45. Let us take
14 a 10-minute recess and be back at 5 to 3:00.

15 (Hearing proceedings recessed

16 2:44 p.m. to 2:54 p.m.)

17 CHAIRMAN BAGLEY: All right, everyone.

18 Okay. We are back in session. It's that time
19 for council members to ask any questions.

20 We'll start with you, Tim.

21 COUNCIL MEMBER FLITNER: A couple. I don't
22 know if you can answer on the second.

23 EXAMINATION

24 Q. (BY COUNCIL MEMBER FLITNER) But the first one,
25 I think we're calling that trench a box cut. And there

1 was a question brought up earlier, and if I understand it
2 right, that's really the only place that the water in the
3 coal seam can communicate with the water in the backfill
4 area in a TR-1, because the trench is the only place.
5 Everywhere else you're talking about that horizontal
6 barrier, whatever, sediment you had in it that's pretty
7 solid. But the backfill, it's not anyway. But at the box
8 cut I think we're calling it, that water's going to come
9 in there, both from the backfill water and from the coal
10 seam, correct?

11 A. That's correct. Yes.

12 Q. So that water will be pumped out there for
13 pretty much the lifetime of the mine because they'll be
14 using that water for the other mines, correct?

15 A. That's correct. Yes.

16 Q. So are there any effects to that water?
17 Because, you know, we talked about the barrier, said one
18 doesn't have anything to do with the other, but in this
19 particular place they will mix and they will communicate.
20 So are there any, you know, effects of that that we need
21 to take a look at?

22 A. You stated there's going to be some limited
23 communication there, and the mine is going to have a mine
24 water management plan, but that's all I can think of is --
25 there's nothing else I can think of.

1 Q. Okay. The other part goes back to this well
2 that we were -- two wells we were talking about, which
3 opens up whole 'nother can of worms. We can't find these
4 wells. First of all, they're outside the permit area.
5 We're not really finding any information on them. But we
6 don't know the depths. We don't know -- is it possible
7 some of these wells are more shallow than the coal seam?
8 Do we know if some of these wells are in the coal seams
9 we're talking about? Do we have information on those
10 kinds of things so we know going forward what kind of
11 effects they might see from the drawdown?

12 A. The State Engineer's Office has a database on
13 the wells and the mine put all the information available
14 to the state engineer's database into the department. So
15 we know the information on the depth, where it's screened.
16 The only thing I was not able to look at is in that
17 specific table did not bring all the information in one
18 place.

19 Q. So if I'm a landowner and I have a well, and I
20 know it's -- what was that one -- 180 feet deep. I can go
21 to the State Engineer's Office or I can come to you and
22 find out basically what effects that's going to have on my
23 well with that drawdown. I can get to that information if
24 I need it?

25 A. Yes, you can.

1 Q. And then I guess I can -- I can be guaranteed
2 that -- I mean, through the process that may prove
3 difficult. I understand the legal process just enough to
4 know there's no place for justice sometimes.

5 But, anyway, you would have an idea of what --
6 what kind of impact it's going to have, so we would maybe
7 hear that from the landowner over the next day or two.
8 They should have that information available to them and be
9 able to present to us what's going to happen to them.

10 A. Yes.

11 COUNCIL MEMBER FLITNER: Okay. That's all
12 I've got.

13 CHAIRMAN BAGLEY: All right. Thank you.
14 Megan.

15 COUNCIL MEMBER DEGENFELDER: Just one.

16 EXAMINATION

17 Q. (BY COUNCIL MEMBER DEGENFELDER) So no
18 monitoring wells were completed in the over/interburden,
19 correct?

20 A. That's correct.

21 Q. Is that necessary for it to be technically
22 accurate, the permit?

23 A. So during the pre-application phase of the --

24 THE REPORTER: I'm sorry.

25 A. During the pre-application phase of the mine

1 permit, there was some discussions on things like that,
2 given the predominantly dry nature of the area and the
3 interburden and overburden being low permeable, they did
4 some drill holes and things like that, but they did not
5 find water. So that was one constraint that I'm aware of
6 and why they did not have a permanent monitoring well.

7 Q. (BY COUNCIL MEMBER DEGENFELDER) Okay. Because
8 I think what I'm still struggling with a bit is the TR-1,
9 whether or not, as you said, is that primarily dry or not.
10 That's what I can't seem to get an answer on.

11 A. The TR-1 area, specifically the backfill --

12 Q. Yes.

13 A. -- is --

14 THE REPORTER: It is?

15 THE WITNESS: It is saturated. Saturated.

16 Q. (BY COUNCIL MEMBER DEGENFELDER) But it's not a
17 source of water, correct?

18 A. It's not a source of water.

19 Q. Okay.

20 A. Or any wells --

21 Q. Okay. Thank you.

22 THE REPORTER: Can you say that again?

23 THE WITNESS: It's not a source of water
24 for any wells -- production wells that I'm aware of.

25 COUNCIL MEMBER DEGENFELDER: Okay.

1 CHAIRMAN BAGLEY: Meghan L.

2 EXAMINATION

3 Q. (BY COUNCIL MEMBER LALLY) I've asked this
4 question before, and you may not be able to answer it.
5 Was one reason that there were no monitoring wells or
6 wells to be accessed, drilled, in TR because of the lack
7 of access by Brook to that property?

8 A. I don't have the information to that question.

9 CHAIRMAN BAGLEY: Is that it?

10 COUNCIL MEMBER LALLY: Yeah.

11 CHAIRMAN BAGLEY: All right. Nick?

12 COUNCIL MEMBER AGOPIAN: I don't have any
13 questions at this time.

14 CHAIRMAN BAGLEY: Okay. Deb?

15 COUNCIL MEMBER BAUMER: My questions have
16 been answered. Thank you.

17 CHAIRMAN BAGLEY: Okay. I have a few
18 questions, Dr. Kuchanur. I actually really like this sort
19 of stuff, having taken some coursework in it years ago
20 myself, but not to the level you have.

21 EXAMINATION

22 Q. (BY CHAIRMAN BAGLEY) I'll ask a couple of
23 technical questions, then I want to get to the question I
24 think is on everybody's mind, but -- so, first, when we
25 put a box cut trench in and start pulling the coal out,

1 how is the model dealing with that as -- as it predicts
2 into the future?

3 A. So you're -- can you -- just trying to
4 understand the question. So you're thinking about the
5 mechanism the model uses to incorporate how it's being
6 mined into the model, Dr. Bagley?

7 Q. Yes. Yes. So, for example, the coal has a
8 certain hydraulic conductivity, and so in your baseline
9 modeling that you use to calibrate it, the coal's all
10 there and you're able to use the baseline hydraulic
11 conductivity of the coal. Now we go in and we drop the
12 box cut in, so we cut through all those layers, as
13 Mr. Flitner indicated, then we go in and start pulling
14 coal out. So that's, of course, is going to act -- it
15 could even act almost like a tunnel, I suppose, but -- so
16 I was wondering how did the model -- how does that handle
17 that as you predict into the future, knowing that there's
18 coal being pulled out of that seam?

19 A. It's a pretty good question. MODFLOW models has
20 a provision that's called drain cells. The drain cells
21 are specifically used in MODFLOW to -- in mining
22 applications. So what those drain cells do is they act as
23 the dewatering -- dewatering location for those trench
24 cuts. So once you know this is where the trench cut's
25 going to be, then you place a drain cell in the MODFLOW

1 model, and that's going to dewater, and it's going to
2 represent what's going to happen at the mine during
3 mining. So that's how the model deals with it. I hope
4 that answers your question.

5 Q. So MODFLOW does have an actual component that
6 allows you to account for that as start to pull coal out,
7 you put these drain cells in in those spots and it's an
8 accounting for now that you completely changed that
9 hydraulic conductivity?

10 A. Exactly, yes.

11 Q. Okay. Thank you.

12 How does the model -- and maybe -- well, it
13 would have had to, since you had the different layers.
14 How does the model handle the Tongue River and Goose
15 Creek, since you had the model going over a lot of large
16 area?

17 A. So the model -- MODFLOW has a specific component
18 to represent rivers, perennial rivers. It's called river
19 package. So the model used a specific package that's a
20 component of MODFLOW. It's called a river package to
21 represent --

22 THE REPORTER: What was the last part?

23 THE WITNESS: To represent the river.

24 Q. (BY CHAIRMAN BAGLEY) So in a way does that act
25 like a boundary condition?

1 A. It does.

2 Q. Okay. This question has come up a lot, so I
3 just want to follow up on it. And so this would be, in
4 your opinion, based on the information you have, is the
5 overburden -- the nondisturbed overburden -- so not the
6 TR-1 area, but the nondisturbed overburden, is it serving
7 as an aquifer in that area?

8 A. No, it does not.

9 Q. So it -- and you base that on when you were
10 doing the boreholes -- or you weren't doing them. But
11 when boreholes were done and you start digging down
12 through -- and, of course, you're taking samples and
13 checking all the way, just no water was found as they went
14 down. Is that your understanding?

15 A. That's my understanding, yes.

16 Q. So now back to TR-1 backfill. I think you may
17 have already answered this question, but I'll ask it again
18 just to be sure, because I want to make sure I hear it.
19 So the TR-1 area has backfill. It's been previously
20 mined. The backfill goes to a certain level. Doesn't go
21 all the way down to the seam that you're interested in.
22 But it had -- and it's being -- you've noted that you
23 believe it's saturated. Is it serving, to your knowledge,
24 as an aquifer?

25 A. It's not serving as a production source for any

1 supply wells.

2 Q. Okay. So it's not serving as a production
3 source, to your knowledge.

4 When you had mentioned 98.9 GPM inflow during
5 year seven, I pulled out my calculator but you beat me to
6 it. But I confirmed your answer that it was .22 cubic
7 feet per second. And I wanted to know how that compared
8 to the flow of the Tongue River. And you answered that
9 too by saying, well, the Tongue River is 100 to 400 cubic
10 feet per second, so this is truly a trivial amount
11 going -- that's flowing into the pits.

12 But my question, then, is, in your opinion, will
13 there be effects on the Tongue River/Goose Creek due to
14 groundwater changes that occur due to -- throughout the
15 mining process?

16 A. So that's -- I do pretty well restating the .22
17 CFS that the mine will be intercepting. If it hadn't been
18 intercepted, not all the water will be discharging to the
19 Tongue River. There will be some very minimum collection
20 out at the mine CFS, but not all the water is
21 hydrologically connected and discharging to the Tongue
22 River.

23 Q. So the Tongue River and Goose Creek are not
24 hydrologically connected to the lower coal seam,
25 although I am actually looking at a -- a DEQ 12-231 that

1 says the -- it is likely that the Carney coal would lose
2 water to the Tongue -- Tongue River alluvium. So
3 there's -- there may be some connection to some of these
4 seams with the rivers, right?

5 A. That's correct, yes.

6 Q. Okay. So I guess I have two concerns. One,
7 will we suck all the water out of these rivers to the
8 point where people downstream have a problem? Just in
9 your opinion, as would be -- the effect be that
10 significant?

11 A. Based on the site plans that I reviewed on the
12 modeling, it does not indicate that way.

13 Q. Okay. So my next question is, will we have
14 another problem? Will we contaminate these rivers with
15 flow from the groundwater due to the mining activities?

16 A. So I haven't discussed this before, but on the
17 issue of groundwater contamination, so we would like to
18 discuss about like what's the source of this
19 contamination? How does it -- where exactly this
20 contamination will be coming from.

21 So if you look at it when you do the box cuts,
22 dig the trench, you take the material out, you store it
23 and then put it back. So things change geochemically, and
24 that might be the source of contamination that might
25 pollute the water. So DEQ/LQD, Land Quality Division, we

1 have guidelines and rules and regulations in place to deal
2 with the spoils material. We make sure these things are
3 like placed in appropriate locations so that it doesn't
4 act as a source of contamination for the groundwater. So
5 that's what we try to address that approach of groundwater
6 quantity and pollution at sites.

7 Q. Okay. Thank you.

8 So now the question that I think some of council
9 were beating around the bush at, I'll just come out and
10 ask it. We've got folks out there around that area that
11 are depending on wells that are producing water for their
12 homes, their livelihoods. Are folks going to see wells
13 run dry or become contaminated because of this mine
14 operation?

15 A. Based on the information that I have reviewed,
16 it's present in the permit application, I don't think so.

17 Q. Okay. So based on the -- the modeling that was
18 done, that you reviewed, you double-checked, and even
19 though we see drawdowns of things, the location of where
20 some of those are, it's -- it's your -- it's your expert
21 opinion that we will not -- people who were not there will
22 not see their wells being significantly affected by
23 quantity or quality --

24 A. That's correct.

25 Q. -- because of this mine.

1 A. Yes.

2 Q. And what if they were?

3 A. That's where the backstop mechanisms that I
4 previously mentioned. Number one, the mines need to
5 provide a replacement for the groundwater right if --

6 THE REPORTER: I'm sorry.

7 THE WITNESS: If it's impaired by Brook
8 Mine, and the mine needs to replace those water rights.

9 A. Item number 2, we'll also be keeping a closer
10 eye during our operations monitoring and during our site
11 inspections and annual reports on what these impacts are.
12 So if this is going to deviate from what the site right
13 now says there's not going to be any impact, then I think
14 we need to be requiring Brook Mine to update the
15 predictions and we'll be basically reevaluating the --

16 Q. (BY CHAIRMAN BAGLEY) So a question I've -- I've
17 gotten. Will there be -- there are, I think you said, 15
18 monitoring wells or were they just water level wells?

19 A. There are 15 monitoring wells that provide water
20 level information.

21 Q. Okay. And then there's going to be did you say
22 three additional monitoring wells added as part of the
23 mine plan?

24 A. Yes.

25 Q. So how often will those wells have to be sampled

1 for both level and quality?

2 A. Quarterly.

3 Q. Quarterly.

4 So let's say we've got a monitoring well located
5 down-gradient from the mine, between say the mine activity
6 and a homeowner's well that's off site of the mine
7 property, but moving in that direction, if we see
8 something happen to that monitoring well that's between
9 the two -- and I don't know if that's the case, but I'm
10 just asking this more of a speculative-type question. But
11 we see the levels significantly drop. We see a
12 contamination problem. What happens to this whole -- the
13 whole system?

14 A. So the first step we'll do is we'll have a
15 meeting with the mine and make sure that we understand
16 that this drawdown, is this like really happening and make
17 sure like all the analysis information and double-check
18 it's all falling into place. After we do this and if we
19 see an impact -- for example, if it's a drawdown impact,
20 it's drawing down the alluvial aquifer to a significant
21 extent, then we'll ask -- we'll require the mine to
22 evaluate what's causing this drawdown and they either need
23 to minimize or mitigate the impacts soon.

24 Q. So is there -- I guess what I'm wondering -- and
25 you may not know the answer. Does DEQ have a legal remedy

1 if you see an impact one quarter, you come back the next
2 quarter, it's gotten worse and nothing seems to have
3 changed, is there any kind of legal remedy that DEQ might
4 take to help stop this? Because, you know, we assume if
5 it's moving down-gradient, it hits one of the monitoring
6 wells, it could continue to move down-gradient off the
7 permit site. Do you know of a legal remedy?

8 A. I cannot think of a legal remedy, but I think in
9 my view it would be in the interest of the mine to take a
10 closer look at this before it hits the well owners and
11 impact mostly their operations.

12 CHAIRMAN BAGLEY: Okay. I shouldn't have
13 asked you a legal question. I've got a bunch of lawyers I
14 could have asked that legal question. That's all my
15 questions. Thank you very much.

16 THE WITNESS: Thank you, Dr. Bagley.

17 CHAIRMAN BAGLEY: Any other questions from
18 council?

19 All right. Mr. Kuhlmann, chance for redirect.

20 MR. KUHLMANN: Thank you, Dr. Bagley.

21 I thank you for asking a few questions I was
22 going to, so I'll try to pare mine down.

23 REDIRECT EXAMINATION

24 Q. (BY MR. KUHLMANN) Dr. Kuchanur, you previously
25 testified about a minor technical issue identified after

1 reviewing the objections related to the commitment in the
2 permit application for Brook to replace adjudicated
3 groundwater wells that might be impacted.

4 A. Yes.

5 Q. Is that what you testified to?

6 And I believe your testimony was that the
7 recommendation was -- from DEQ was that the term
8 "adjudication" be removed so it would just be replacing
9 water rights.

10 A. Correct.

11 Q. Do you know what -- if there's a similar
12 commitment in the surface water quality sections in the
13 mine plan to replace impaired surface water rights?

14 A. There is no qualifying term to replace water
15 rights. That specifies only adjudicated water rights will
16 be replaced.

17 Q. So I'll rephrase this just to make sure I
18 understand it. The -- the commitment to replace surface
19 water rights. It does not say adjudicated surface water
20 rights?

21 A. Right.

22 Q. So removal of the term adjudicated groundwater
23 rights section make that commitment more closely match the
24 surface water rights section?

25 A. It will.

1 Q. Would you characterize deleting of a single word
2 as minor?

3 A. In this instance, yes.

4 Q. And does the fact that the application that was
5 determined to be technically adequate by DEQ prior to the
6 public notice, the fact that the term adjudicated water
7 rights is used instead of just water rights, in your
8 opinion does that make the application tech -- not
9 technically adequate?

10 A. It does not.

11 Q. Okay. You were asked a little bit about whether
12 wells would be materially impacted. Is that a term that
13 is defined in DEQ regulations?

14 A. I don't know off the top.

15 Q. Is that a -- a technical term you would --
16 you're familiar with the definition of?

17 A. I'm not.

18 Q. I think you may have got at this issue a little
19 bit with Dr. Bagley. When you mentioned that .22 CFS,
20 that would be the maximum amount of water intercepted
21 according to the groundwater model. Not all of that would
22 have gone into the Tongue River, correct?

23 A. That's correct. Yes.

24 Q. Where other -- if it hadn't been intercepted,
25 where are some other places that water might have gone to?

1 A. To be pretty much in the coal seams, traveling
2 in those coal seams.

3 Q. So the .22 CFS that would be intercepted would
4 be a total of any of the water that would have gone into
5 the Tongue River, any of the water that would have gone
6 into the coal seams as well?

7 A. Yes. It's the total of any water that's being
8 intercepted by the mine, irrespective of the geology units
9 recharging from or discharging to.

10 Q. So when you compared the .22 CFS to the flow of
11 the Tongue River, which I believe you said the -- the
12 minimum flow as 100 CFS in the last 10 years -- was that
13 correct, the flow?

14 A. That's correct. Yes.

15 Q. When you compare the .22 CFS to the flow of the
16 Tongue River, does the model -- does the model predict
17 that the intercepted .22 CFS -- let me rephrase that.
18 Does the model predict that the Tongue River's flow will
19 lose .22 CFS because of the intercepted groundwater?

20 A. It does not.

21 Q. So if there was water that was intercepted, the
22 Tongue River could be less than .22 CFS?

23 A. Potentially, yes.

24 Q. Do the -- to your knowledge, does the existence
25 of water drawdown from a well make a permit application

1 not technically adequate?

2 A. It does not.

3 Q. So there can be some drawdown and the
4 application is still technically adequate?

5 A. Yes.

6 MR. KUHLMANN: I don't have any other
7 questions. Thank you.

8 THE WITNESS: Thank you.

9 CHAIRMAN BAGLEY: Thank you, Mr. -- Dr. --
10 oh, did you have another question, Tim?

11 COUNCIL MEMBER FLITNER: Yeah.

12 EXAMINATION

13 Q. (BY COUNCIL MEMBER FLITNER) I mean, just
14 sitting here thinking, and probably my problem, so I
15 apologize for being a nag on this, but I don't think I
16 phrased it very well. But I've been trying to figure out
17 a way to explain it better.

18 But what I'm getting at is the water in the coal
19 seam is deeper than, say, your backfill water or any
20 groundwater that might be above that. So it's under more
21 pressure. So, basically, when we make that crosscut,
22 we're breaching that -- that system down there. It's like
23 letting water out -- or air out of a tire, correct? I
24 mean, we've got -- got the coal seam under so much
25 pressure here, and as you get up into the backfill, of

1 course the backfill water is under less pressure. But
2 this box cut is going to tie those two together for all
3 eternity, and so your pressure's going to want to
4 equalize. So what stops the water in the coal seam? It's
5 been there for millions of years under a certain amount of
6 pressure. Now, from leaking up through the box cut, even
7 years after the mine is backfilled. Because you can't
8 stop that now. I mean, you've basically breached that
9 lock between the coal seam and the backfill. And you're
10 basically backfilling it -- the breach now. It's not that
11 hard sediment that you talked to -- talked about, because
12 we cut through it, and you can't pack it tight enough to
13 seal it again.

14 So over -- over the years to come in the future,
15 what happens to that groundwater in the coal seam that
16 maybe there are other wells attached to, because that
17 pressure will -- then that water will eventually leak out
18 of that coal seam and up into the box cut. And so
19 those -- that pressure in there will eventually deplete,
20 correct? So if you have a well in that coal seam, that
21 pressure originally would have pushed water up into
22 your -- you know, into your system, but now maybe it
23 doesn't. What happens -- I mean, what is -- what is the
24 effects of that?

25 A. There are two parts that I'm going to use to

1 answer your question, Mr. Flitner. Number one, when you
2 put the backfill in -- into the coal, you have on either
3 side -- one side of coal being removed and wide and things
4 like that. On the other side there is still going to be
5 the native coal. And we know that the coal is more
6 permeable than the backfill aquifer. So the overburden,
7 the permeability, the rate at which it can conduct
8 water -- we know the coal conducts water better than the
9 backfill.

10 So groundwater always take the path of least
11 resistance, so it tries to like continue and follow the
12 coal seam. And the other one is a little -- the second
13 part of my response is going to be nuanced, but when you
14 talked about the pressure, the confined aquifer, the coal
15 aquifer in this zone, the pressure that you're looking at
16 is not like several tens of feet or something like that.
17 The pressure is pretty minimal. As.

18 You saw the blue line, it's like right above the
19 coal seam. It's just like a little bit above the
20 thickness of the coal. I mentioned the area is about like
21 10 feet, so maybe might be 5 feet above, maybe like 2 or 3
22 feet above the top of the coal seam. So the pressure to
23 begin with is not a lot, and the permeability difference
24 between the backfill and the coal is going to make sure
25 that the water follows the natural path of least

1 resistance.

2 Q. So you're saying the lack of real pressure that
3 exists, and the fact that the coal is permeable, the
4 water's more likely to travel horizontally than
5 vertically. So really the effects are nominal. Not much
6 will happen.

7 A. Exactly. Yes.

8 CHAIRMAN FLITNER: Okay.

9 COUNCIL MEMBER LALLY: I've got a question
10 on follow-up for that.

11 CHAIRMAN BAGLEY: Okay.

12 EXAMINATION

13 Q. (BY COUNCIL MEMBER LALLY) Will that -- because
14 coal's going to -- or coal -- I'm sorry, water's going to
15 want to follow the path of least resistance, like you were
16 saying. Are you going to lose water in that upper aquifer
17 because it's trying to go down into that coal and fill the
18 next aquifer down and losing water in the upper aquifer by
19 doing that?

20 A. Sounds like a little mechanical response I'm
21 going to give. We know the backfill is coming from the
22 Tongue River, and we know that the permeability of the
23 backfill aquifer --

24 THE REPORTER: I'm sorry.

25 THE WITNESS: The permeability of the

1 backfill aquifer is low. So it's connected to the Tongue
2 River, and it's based on my review of the backfill aquifer
3 saturation from Big Horn Mine. It took like 23 years for
4 the backfill to re-saturate. So we know that the water's
5 going to trickle down into the backfill, and we know that
6 the permeability is like low. So it's -- it's going to be
7 a very slow process, and it's going to be very, very
8 minimal.

9 And, typically, if you look at these units, the
10 horizontal permeability of that water, most naturally it's
11 going to be more than the vertical permeability. So those
12 are the two things I can think of.

13 COUNCIL MEMBER LALLY: Okay. Thank you.

14 CHAIRMAN BAGLEY: All right. Thank you,
15 Dr. Kuchanur.

16 THE DEPONENT: Thank you, Dr. Bagley.

17 CHAIRMAN BAGLEY: Do you have any other
18 witnesses, Mr. Kuhlmann?

19 MR. LAROCK: Yes. We're going to call
20 Doug Emme.

21 CHAIRMAN BAGLEY: All right.

22 (Witness sworn.)

23 DOUG EMME,
24 called as a witness on behalf of the DEQ, being first duly
25 sworn, testified as follows:

1 DIRECT EXAMINATION

2 Q. (BY MR. LAROCK) Hey, Doug.

3 A. James.

4 Q. Can you spell your name for the record, please.

5 A. D-O-U-G. Last name is Emme, E-M-M-E.

6 Q. Okay. Thanks. What's your job title at DEQ?

7 A. I'm a blasting program principal for Land
8 Quality.

9 Q. How long have you been the blasting program
10 principal?

11 A. Over 27 and a half years.

12 Q. What's your education background?

13 A. BS in geological engineering from South Dakota
14 School of Mines.

15 MR. LAROCK: Is this speed fine? Thank
16 you.

17 Q. (BY MR. LAROCK) Can you talk a little bit about
18 your work experience.

19 A. It's been about 15 years in the industry, grew
20 up in construction family. I've been running equipment
21 since I was probably 12, 13 years old. Done a little bit
22 of everything in mines. I've operated dragline shovels,
23 scrapers, dozers, drills, run drill blaster. I've run
24 dragline crews, done job estimating for mines and
25 construction companies, and then I've done this for the

1 State for the last 27 and a half years.

2 Q. Can you talk about your duties as the blasting
3 program principal?

4 A. I train blasters for the mining industry. I
5 license blasters for the mining industry. I investigate
6 blasting complaints citizens have. I do blasting
7 inspections. I do other inspections. I also helped
8 develop our bond guideline about 27 years ago. And I'm
9 tasked to update it on an annual or as-needed basis. I do
10 a lot of the coal mine bond estimates for our District 3,
11 which includes the northeast part of the state. I've also
12 helped our other two districts in Lander and Cheyenne with
13 bond reviews on not only coal mines, but larger small
14 mines, granite quarries, gravel pits, things like that.

15 Q. Have you ever consulted for coal companies on
16 blasting?

17 A. Yes.

18 Q. Can you talk a little bit about your teaching
19 and lecturing experience?

20 A. I spent a couple years as an adjunct professor
21 here at Sheridan College back in the mid-'70s, teaching
22 introductory mining courses. For about the last 20 years,
23 as well as my teaching duties, training blasters for the
24 State of Wyoming, I've taught blasting classes for OSM all
25 over the country. We have introductory blasting class as

1 well as advanced blasting class. The advanced blasting
2 class we actually go to the field, set up seismographs.
3 People get to be out on the bench, watch blaster load
4 holes, fire the shots.

5 Five years ago, the Department of Interior sent
6 me to Costa Rica to do some training for Costa Rican
7 government officials on the adverse effects of mine and
8 quarry blasting near people that live near those quarries
9 and mines.

10 Q. And you certify the blasting for the state of
11 Wyoming?

12 A. I certificate blasting for the state of Wyoming,
13 yes.

14 Q. Can someone become certified to blast in the
15 state of Wyoming without your signature?

16 A. No.

17 Q. Let's talk a little bit about Wyoming's blasting
18 rules and regulations. How were Wyoming's blasting
19 standards developed?

20 A. Wyoming is a state that has primacy under the
21 OSM, the Office of Service Mining, surface coal
22 regulations. And our regulations have to be as stringent
23 as OSM regulations. So ours almost mirror theirs.

24 Q. How do the regulations deal with damage to
25 structures from blasting?

1 A. Our regulations are set forth so any structure,
2 anybody that lives in a house, any public building off
3 mine permit is protected from damage from ground
4 vibration, air blast, fly rock, any adverse effects from
5 mine blasting.

6 Q. So in your view, if a mine doesn't exceed ground
7 vibration or air limits -- air blast limits, should there
8 be any damage to structure outside the permit area?

9 A. If they don't exceed limits set forth in our
10 regulations, there would be no structural damage to any
11 houses in the area.

12 Q. Okay. Let's talk a little bit about the Brook
13 Mine permit application. Did you review the Brook Mine
14 permit application?

15 A. Yes.

16 Q. What kinds of protections are in the permit
17 application as relates to blasting?

18 A. They are going to comply with all the state,
19 federal, local relations -- there are no local blasting
20 regulations, so they'll comply with the state and federal
21 regulations.

22 Q. Okay. Can -- when the mine is blasting, is the
23 mine going to shake the house -- a structure -- well,
24 hypothetically -- outside the permit boundary?

25 A. Yes. Our regulations allow mines to shake a

1 house, but not damage it.

2 Q. Okay. What kind of shaking would a person
3 expect when a mine's blasting?

4 A. They might hear the windows rattle. A picture
5 on the wall might move. Dishes in a china cabinet might
6 rattle. If a dish were broken or a picture fell off the
7 wall from mine-related blast, ground vibration or air
8 blast, the mine would have to replace, say, the glass in
9 the picture or the dishes in the china hutch.

10 Q. How's the mine going to know what the structures
11 look like inside and outside?

12 A. Anybody that lives within a half mile of the
13 permit area can request a pre-blast survey from the mine
14 at any time.

15 Q. And that pre-blast survey looks at what exactly?

16 A. Pre-blast survey will look at the condition of
17 the structure at the time a pre-blast survey was done.
18 Most of them consists of a series of pictures of videos
19 that document the outside, as well as the inside of the
20 structure. And they also look at the quantity and quality
21 of any water from wells on their property.

22 Q. Okay. So if the mine's following the rules,
23 there shouldn't be any damage, but if it breaks the rules,
24 then you have evidence of what changed, right?

25 A. That's correct.

1 Q. So relatively speaking, I think folks hear
2 blasting and think about the Powder River Basin. Can you
3 talk about how this mine's going to be different from
4 those mines?

5 A. Most of the mines on Powder River Basin shoot
6 multiple times daily. The bigger mines like Black Thunder
7 and NARM, they might have five, six, seven shots a day.
8 This mine is going to shoot when they open the initial box
9 cut, and they'll shoot the coal in that box cut, then
10 there's going to be no blasting for months, could be a
11 year or more, depending on what their production is. So
12 it's going to be sporadic.

13 Q. What are the size of the shots going to be like?

14 A. Shots are going to be relatively small. Will be
15 dependent on the type of drilling equipment they use and
16 type of excavating equipment.

17 Q. Is there going to be cast blasting?

18 A. No.

19 Q. And just for the benefit of the council, what's
20 cast blasting?

21 A. Cast blasting is a blasting technique where we
22 try to chemically move the dirt, so it never has to be
23 handled with a dragline or a shovel. It's all done
24 through the ground blast operation. And the mines in the
25 basin that do cast blasting probably get 30 to 40 percent

1 of the bench moved to where it never has to be touched by
2 equipment.

3 THE REPORTER: Mr. LaRock, can you slow
4 down, please.

5 MR. LAROCK: I'm so sorry. Of course I
6 can.

7 Q. (BY MR. LAROCK) So, again, to reiterate, people
8 living half mile away are going to feel vibrations, right?

9 A. Yes.

10 Q. But it's -- are those vibrations going to be
11 bigger or smaller than other kinds of vibrations they
12 might normally feel as part of day-to-day life?

13 A. They will more than likely be less than what
14 they feel from the everyday activities in the house.
15 People coming in, closing the door. A teenager flopping
16 down on the couch. The wind in Wyoming is going to put
17 more impact on the leading wall where that wind hits the
18 house than what they're going to experience from blasts
19 from neighboring mine.

20 Q. But the blasting might be more distressing, as
21 they may not know where it's coming from?

22 A. Perception to reality. And people aren't used
23 to the blast where they are used to the wind or normal
24 everyday activities in the house.

25 Q. What kind of steps is Brook going to take make

1 people aware of when blasting is going to happen?

2 A. They have to publish annually and also send this
3 publication to the people that live within half mile of
4 the permit a blasting public notice that specifies days
5 and times when blasting's going to occur. How the access
6 to the area's going to be controlled. It will also list
7 the name, address, phone number, contact information for
8 the operator, should they have any problems they could
9 contact the operator.

10 Q. Okay. But the mine's not going to submit some
11 kind of formal plan detailing exactly which explosives are
12 going to be used and when?

13 A. No.

14 Q. Okay. Would such a plan be required by the
15 rules and regulations?

16 A. No.

17 Q. Can you explain why that is?

18 A. We don't want that type of specificity in the
19 permit. Because if they say we're going to shoot with
20 ANFO, that's all they can shoot with. And we want them to
21 use the best technology available. The best initiation
22 system, the best explosives for the product that they're
23 trying to produce.

24 Q. Do you know if the mine is going to be able to
25 blast at night?

1 A. No. Our regulations only allow sunrise-sunset.
2 So the biggest window possible.

3 Q. Could they blast night for emergencies?

4 A. Emergency situations, they possibly could shoot
5 after sunset. There are very few emergency situations.

6 Q. If a mine's experiencing an emergency that would
7 require them to blast at night, how do they go about doing
8 that?

9 A. My recommendation there's nothing specific in
10 the regulations, but my recommendation is they try to
11 contact me before they do it. And if they can't contact
12 me, they have to let me know within 24 hours after the
13 fact.

14 Q. In your 27-plus years being program principal
15 for blasting, how often are you aware of that you
16 authorized night blasting?

17 A. Less than five times.

18 Q. All right. Thank you.

19 That's all the questions I have about blasting.
20 I'm going to move on to your life reviewing bonds.

21 So just as a preliminary matter, has a bond been
22 set for the Brook Mine yet?

23 A. No.

24 Q. Okay. When is it going to be set?

25 A. It won't be set until we're ready to issue the

1 permit and they give us specifics on what actually they
2 plan to do in the first 12 months of the mining operation.

3 Q. Okay. Is the Brook Mine required to submit an
4 estimate to you of what they think the bond should be?

5 A. Not at this point, they're not.

6 Q. Okay. Talking about bonding generally. In
7 Wyoming do we require bonds that are going to cover the
8 entire life of the mine?

9 A. No.

10 Q. How much time does a bond have to cover?

11 A. When an operator submits a bond, they're looking
12 at what the operation looks like the day the bond is
13 submitted and the projection 12 months in advance.

14 Q. How often are bonds being viewed and reset?

15 A. At least annually.

16 Q. But it could be more than annually?

17 A. Yes.

18 Q. You mentioned you developed Guideline 12.

19 A. Yes.

20 Q. Can you talk a little bit about how Guideline 12
21 works?

22 A. Guideline 12 specifies different equipment they
23 can use to backfill pits, spread topsoil, scarify, seed,
24 demolish structures, set bond, air quality monitors,
25 screen monitors. And we use hourly equipment costs that

1 we get from national recognized companies, and then we
2 adjust those for Wyoming conditions.

3 Q. How often is the dollar amount set in Guideline
4 12 updated?

5 A. We update it at least once a year. And I think
6 I've done it three times in the last 14 months.

7 Q. Okay. So what's the most recent version of
8 Guideline 12's prices?

9 A. February 2017.

10 Q. Okay. All right. Does an operator have to
11 suggest a bond amount in order for a permit application to
12 be deemed technically adequate?

13 A. No.

14 Q. Okay. Has Brook Mine submitted an estimated
15 bond amount?

16 A. Yes.

17 Q. When operators submit an estimated bond amount
18 to DEQ, do you just accept that amount or do you do your
19 own analysis what the bond amount should be?

20 A. We don't accept theirs. We do our own analysis.

21 MR. LAROCK: Okay. Can I get the
22 connection to throw something up? Never mind. My
23 co-counsel's going to do it.

24 So what we're going to throw up is DEQ
25 Exhibit 32. And just for the council's benefit, a paper

1 copy of DEQ 32 is over with all of our other exhibits now.

2 Q. (BY MR. LAROCK) Mr. Emme, do you recognize this
3 map?

4 A. Yes.

5 Q. Can you describe what this map is?

6 A. This is permit boundary in blue. These little
7 colored areas are their projected disturbance in the first
8 12 months of activity.

9 Q. So --

10 A. What we call year zero.

11 Q. Okay. So the bond amount that they've suggested
12 only needs to cover the activities that are outlined in
13 this map, correct?

14 A. That's right.

15 Q. Can you describe what the map says you're going
16 to do in year zero?

17 A. We have 20.7 acres here in this tan crosshatched
18 area, which is going to be the pit that we've been talking
19 about. They will strip topsoil in that pit, as well as a
20 laydown area. There are a couple of sediment ponds and
21 topsoil stockpile from the topsoil they strip off that
22 area and any access road into that area. The total
23 disturbance in that first 12 months is projected at
24 30.8 acres.

25 Q. Okay. So there's not going to be blasting or

1 big trenches or anything like that in year zero?

2 A. There will be no blasting. There will be no
3 overburden removal in year zero.

4 Q. So I'm going to ask you now what I was getting
5 close to asking a little bit earlier. The mine submitted
6 a proposed estimate to you, right?

7 A. Yes.

8 Q. What amount did they suggest?

9 A. It was 371,000 and change. And the
10 recommendation was to round that to 372,000.

11 Q. Is that more or less than you would have
12 requested had you gone through this yourself under
13 Guideline 12?

14 A. My review indicated that the bond was very
15 robust. Higher than I would have asked for.

16 Q. Okay. But, again, the bond isn't set yet?

17 A. No, it is not.

18 Q. Okay. If DEQ realizes that an annual bond
19 amount is too low, what can DEQ do?

20 A. We can increase the bond.

21 Q. Okay. I think that's all the questions I have
22 about bonds.

23 So just wrapping it up, have you reviewed the
24 objections that have been submitted in this case to the
25 permit application?

1 A. Yes.

2 Q. In light of those objections, do you still
3 believe that the permit application is technically
4 adequate with regards to blasting and bonding?

5 A. Yes, I do.

6 MR. LAROCK: I don't have any more
7 questions for this witness.

8 CHAIRMAN BAGLEY: Thank you.

9 Ms. Boomgaarden or Mr. Gregersen, please.

10 MR. GREGERSEN: Mr. Chairman, right now
11 with the focus of our case, I don't believe we have any
12 questions for Mr. Emme. However, we would like to defer to
13 Mr. Gilbertz and Ms. Anderson, and with opportunity to
14 maybe ask a couple follow-up questions if they arise
15 through the cross-examination.

16 CHAIRMAN BAGLEY: All right. Yeah, we'll
17 let -- we'll come back to you, then. Defer.

18 MR. GREGERSEN: Thank you.

19 CHAIRMAN BAGLEY: Ms. Anderson.

20 MS. ANDERSON: Sure. Can I have the little
21 doohickey thingy.

22 MR. LAROCK: Do you mean the connection?

23 MS. ANDERSON: That's the official name of
24 it?

25 MR. LAROCK: That's the official name of

1 it.

2 MS. ANDERSON: That's fine. I can do it.

3 CROSS-EXAMINATION

4 Q. (BY MS. ANDERSON) All right. Good afternoon,
5 Mr. Emme.

6 A. Good afternoon.

7 Q. All right. Would you agree that there is a lot
8 of residents in the area around the Brook Mine?

9 A. There are a fair amount.

10 Q. I think yesterday we heard testimony of
11 hundreds. Would you agree with that?

12 A. I -- you'd have a better idea than I would, so
13 that could be accurate.

14 Q. So more than maybe some of the other mines that
15 you deal with --

16 A. Probably, yes.

17 Q. -- in blasting.

18 And just for the benefit of the court reporter,
19 we're going to try not to talk over each other.

20 Okay. So with that, given your history -- and I
21 know you've received citizen complaints every now and then
22 from citizens on blasting, right?

23 A. Yes.

24 Q. And those are generally in areas where there's
25 more people close to a mine, right?

1 A. Yes.

2 Q. Okay. So given the -- kind of your knowledge of
3 those kind of concerns, is there anything special you did
4 with the review of this permit versus maybe other permits
5 that you've looked at for blasting requirements?

6 A. No.

7 Q. Are there any special conditions or restrictions
8 you were thinking of?

9 A. No.

10 Q. Okay. Let's see. You talked a little bit -- I
11 have on the screen DEQ Exhibit 12, page 338, which I think
12 you mentioned that blasting would be limited to daylight
13 hours, correct?

14 A. Yes.

15 Q. Okay. But they can occur any day of the week?

16 A. If that's what they put in their permit and
17 that's what we agreed to, yes, they could.

18 Q. But you don't know for sure one way or the
19 other?

20 A. They could specify in permit they're going to
21 shoot Monday through Friday from noon to 4:00, that would
22 be the only window they could shoot.

23 Q. Okay. But that's something the operator would
24 have to suggest to you --

25 A. Unless -- unless it were an area where we felt

1 that restricting the blasting times was advantageous.

2 Q. Did you think about that in the context of the
3 Brook Mine --

4 A. No.

5 Q. -- whether it be advantageous?

6 A. No, I don't believe it would be advantageous.

7 Q. Restricting -- given the presence of all the
8 residents in this area, you don't think it would be
9 advantageous to limit blasting to certain days of the week
10 or maybe different times to limit the impacts on those
11 neighbors?

12 A. No, because I don't feel the blasting is going
13 to be that impactful from this operation.

14 Q. Okay. Do you agree that in addition to the
15 vibrations you talk about in your testimony, that blasting
16 also causes visual and potentially noise impacts?

17 A. There could be some. They may see some in the
18 operation. They may see dust from the blast, that type of
19 thing. They're going to see those things from interstate
20 traffic on the interstate, traffic on gravel roads where
21 they live. So I doubt the blasting will be much more
22 visually disturbing to them than everyday traffic in areas
23 where they live.

24 Q. Okay. You didn't really talk about this in your
25 direct testimony, but what is -- you know, when you blast,

1 is there a certain amount of kind of pollution that comes
2 up at that time, generally? Like a cloud of dust, for
3 instance?

4 A. There will be dust from a lot of blasts, yes.

5 Q. Is that something that regularly happens on the
6 interstate?

7 A. I've seen a lot of dust on the interstate when
8 the wind blows, yes.

9 Q. Okay. Did DEQ consider any other limitations on
10 blasting, such as limiting blasting during inclement or
11 adverse weather conditions?

12 A. No.

13 Q. Or when soil conditions are not appropriate for
14 blasting, when that soil's saturated with water?

15 A. No, we did not.

16 Q. I think you have a history with a situation that
17 can result from blasting called orange cloud, correct?

18 A. Will you repeat that, please?

19 Q. Yeah. I know that you have some background in
20 situations where blasting causes what's called an orange
21 cloud.

22 A. Yes.

23 Q. Could you tell the council what an orange cloud
24 is?

25 A. Orange cloud is what we call NOx, N-O-X, oxide

1 and nitrogen. The orange cloud is actually NO2. The
2 initial gas produced from an incomplete combustion is NO,
3 and it mixes with oxygen in the atmosphere and produces
4 NO2. That's what gives it the yellowish-red color. We
5 have had a fair amount of problems with NOx fumes in the
6 Powder River Basin at mines with cast blasting.

7 Q. Okay. And I think your testimony is that Brook
8 won't cast blast.

9 A. That's correct.

10 Q. Is that in their permit application right now,
11 that they won't do that?

12 A. I don't believe so.

13 Q. So how do you know that that won't happen?

14 A. Because their mining technique does not lend
15 itself to cast blasting.

16 Q. Is that something DEQ has considered as maybe a
17 condition of approval for the permit?

18 A. No. If we were going to condition a permit,
19 they'd have to come in with a mine plan and specify they
20 were going to cast blast in their operation.

21 Q. Okay. So it's your assumption, based on the
22 type of mining, there won't be cast blasting. But it's
23 not spelled out anywhere in the permit application, right?

24 A. No, it's not.

25 Q. Okay. Are you aware of orange clouds developing

1 in any situation besides cast blasting?

2 A. It happens occasionally.

3 Q. Okay. In what situations?

4 A. Oftentimes when you get wet conditions and your
5 product gets wet, that's when operations use a mix of ANFO
6 and emulsion and go to a water-resistant product.

7 Q. Okay. So a moment ago I just asked you if DEQ
8 considered limitations on blasting to kind of, I guess, if
9 the soil's too wet or if it's rainy outside, did you --
10 would you agree that that would be -- those kind of
11 conditions might help to prevent orange clouds from
12 happening?

13 A. I don't feel we need to condition a permit
14 because their blasting plan specifies they're going to use
15 the best techniques available in their operations. So if
16 wet conditions -- no operator's going to use straight ANFO
17 if it's going to tend to break down in a wet borehole.
18 They're going to use a waterproof rocket.

19 Q. You would agree that in spite of the best
20 efforts of operators, orange clouds still happen, right?

21 A. Yes.

22 Q. Okay. In your review of the permit application,
23 are you aware of the likely blasting amounts and durations
24 necessary to achieve the operations plans of the company?

25 A. Do not know how often or how much they will

1 blast on an annual basis. Again, that's going to be
2 dependent upon traffic.

3 Q. Okay. So you would agree that a blasting plan
4 would be submitted at a later date?

5 A. They have a blasting plan in place in the permit
6 right now.

7 Q. But it doesn't discuss how often blasting would
8 happen or where?

9 A. No.

10 Q. So how is that a plan?

11 A. They're going to blast in active pits that they
12 mine in. We know according to their mine plan where
13 they're going to mine in year one, year two, year three,
14 throughout the mine, we know where they're going to blast.
15 So they have to follow mine plan if they're going to blast
16 in those areas in those specified years.

17 Q. And that's an assumption you're drawing. It's
18 not actually spelled out in the permit application,
19 correct?

20 A. Their mine plan spells out where they're going
21 to mine each year --

22 Q. And you're drawing --

23 A. -- during the term of the permits.

24 Q. And you're drawing assumption that based on
25 where they're going to mine, where they're going to blast,

1 right?

2 A. Why would they blast anywhere else?

3 Q. Okay. But they don't actually, in their
4 blasting plan, have any identification of where they're
5 going to blast?

6 MR. LAROCK: Mr. --

7 MR. SUTPHIN: Mr. Chair -- go ahead,
8 Counsel.

9 MR. LAROCK: Objection. Asked and answered
10 several times, I think.

11 MS. ANDERSON: Okay. That's fine.

12 Q. (BY MS. ANDERSON) Okay. Are you aware of the
13 part of the regulations that allows the administrator or
14 maybe in this case your supervisor, I guess, if
15 Mr. Wendtland wasn't involved, that would allow other
16 information necessary to ensure compliance with Chapter 6
17 of your regulations?

18 MR. LAROCK: I'm going to have to object to
19 the characterization of that question. The witness has
20 already testified that Mr. Wendtland was not involved.

21 Q. (BY MS. ANDERSON) Okay. But -- so the rest of
22 the question, let's get to that. And -- I mean, the
23 regulation says administrator, so that's why I'm having
24 the difficulty dealing with this because I don't know who
25 else to put in the regulation besides the administrator.

1 But are you aware of the ability for I guess
2 someone at DEQ to request additional information necessary
3 to ensure compliance with Chapter 6 of your regulations
4 within the mine permit application?

5 A. The rules and regs in Chapter 6 specify that the
6 administrator, my boss, can specify more stringent
7 regulations for ground vibration or air blast if he deems
8 that necessary to protect structures near mine or quarry.

9 Q. Well, if Mr. Wendtland wasn't involved, then who
10 at DEQ could have done that in the context of the Brook
11 Mine?

12 A. I believe, if we felt it was necessary, would
13 have been Mr. Alan Edwards.

14 Q. Okay. Did you talk to Mr. Edwards about this at
15 all in the scope of your review?

16 A. No.

17 Q. Do you know if Mr. Edwards is aware of this
18 regulation this is something he could do?

19 A. I'm sure he's aware of it.

20 Q. How -- okay. I won't ask you that.

21 Are you aware of recreation uses in the area?

22 A. Yes.

23 Q. Are you at all concerned about blasting impacts
24 to those recreation uses?

25 A. There will be no recreation uses on the permit

1 during mining, so I'm not too concerned about impacts to
2 recreation on a permit during mining.

3 Q. Okay. How about adjacent areas?

4 A. Adjacent areas, I'm not very concerned about any
5 impacts from this mine operation.

6 Q. Okay. Are you aware that the permit area
7 includes some county roads that are used by the public?

8 A. Yes.

9 Q. Are you at all concerned about blasting near
10 those county roads?

11 A. No. If they're blasting close to those county
12 roads, it would be the operator's responsibility to block
13 traffic on those roads and make sure that anybody
14 traveling on the road -- those roads didn't travel on them
15 during blasting operations.

16 Q. Is blocking a road an impact, in your opinion?

17 A. It would be a minor impact.

18 Q. Are you aware of the presence of Abandoned Mine
19 Lands mines in the area?

20 A. Yes.

21 Q. Did in the scope of your review of the blasting
22 impacts, did you consider those abandoned mine lands at
23 all?

24 A. I thought about them. I didn't really consider
25 them too much, no.

1 Q. So you didn't consider if you're blasting right
2 close to an abandoned mine, if that would have an impact
3 related to that abandoned mine?

4 A. I doubt that it would have much of an impact.
5 Most of the abandoned mines in the area, if there was
6 going to be subsidence, would have subsided by now. And
7 for that matter blasting vibrations probably wouldn't
8 cause subsidence in an old mine near the operation.

9 Q. Do you draw that opinion based on anything
10 discussed or any information provided by the permit
11 applicant?

12 A. No.

13 Q. So you're -- what's the basis of this opinion?

14 A. My experience and knowledge of ground vibrations
15 impact on adjacent structures of mines.

16 Q. Okay. Are you aware that there's still active
17 subsidence in the area?

18 A. Yes.

19 Q. So I think just a moment ago you testified that
20 if subsidence would happen, it would have happened by now,
21 right?

22 A. In most cases. Most of those mines are many
23 decades old.

24 Q. But you just told me that subsidence is still
25 happening, right?

1 A. Possibly.

2 Q. Are you aware of subsidence happening?

3 A. I haven't been out in that area in many years,
4 so I guess I'm not aware of it.

5 Q. You didn't visit the mine site in the course of
6 your review at all?

7 A. No.

8 Q. And when you mean you haven't been out there,
9 it's -- in many years, when was the last time you were out
10 there?

11 A. I really couldn't say.

12 Q. Okay. Are you aware that nitrogen is a common
13 constituent in blasting agents, right?

14 A. Would you repeat that, please.

15 Q. Is nitrogen a common constituent in a blasting
16 agent? It's a common chemical. Maybe you can explain
17 this better than I can, but --

18 A. Ammonium nitrate --

19 Q. Yes.

20 A. -- is a common chemical used in many blasting
21 agents, yes.

22 Q. Okay. We talked a lot about the water today.
23 In the scope of review of blasting, did you consult with
24 any of your colleagues that reviewed the hydrogeologic
25 consequences of the mine related to possible nitrogen

1 contamination?

2 A. No.

3 Q. Is that something you've ever done in the course
4 of a mine?

5 A. I have.

6 Q. Why didn't you do it here?

7 A. I didn't feel it was necessary. I don't think
8 that there will be nitrogen contamination on groundwater,
9 as much of the permit is dry, as you've already heard.

10 Q. So you don't think there's going to be nitrogen
11 contamination. What evidence do you draw that opinion?

12 A. I believe that the operator will use the best
13 techniques available, and they use waterproof products
14 when they shoot in wet areas.

15 Q. Okay. So you talked a little bit about -- a
16 little bit about possible -- or the unlikely nature of
17 structural damage in the homes in the adjacent areas from
18 blasting, right?

19 A. Yes.

20 Q. There may be some vibrations and some pictures
21 may fall off the wall, but structural damage likely
22 wouldn't happen, right?

23 A. Very unlikely.

24 Q. Are you aware of stone houses or stone buildings
25 in the area?

1 A. Yes.

2 Q. Do you think the presence of those kind of
3 buildings, would that change your opinion at all?

4 A. No.

5 Q. Why not?

6 A. If I remember -- and I actually looked at that
7 house years ago, when we were looking at houses to buy and
8 remodel, it's a sandstone foundation. It's a pretty
9 sturdy foundation. Probably a better foundation than many
10 other houses in the area that are on a poured concrete
11 foundation.

12 Q. Is that kind of information in the permit
13 application?

14 A. The quality of the structure?

15 Q. Yeah, or potential impacts to structures at all,
16 actually.

17 A. All they are going to do is comply with blasting
18 regulations, so there's no damage to houses near the
19 permit.

20 Q. And there's nothing in the permit application
21 about any kind of structures themselves right now?

22 A. I believe --

23 MR. SUTPHIN: Mr. Chairman, I'm going to
24 object. I know that this witness has already testified
25 that if damage is caused, pre-blast surveys will have been

1 done and operator will be responsible for any repairs -- or
2 damages they've caused.

3 MS. ANDERSON: And, Mr. Chairman, my line
4 of questioning, while that may be true to some degree,
5 there's also a duty to prevent harm in the Environmental
6 Quality Act in Chapter 6. And that's where these questions
7 are getting at.

8 CHAIRMAN BAGLEY: As I understand what I've
9 heard here, the blasting regulations have been designed to
10 do that. So if the blasting regulations are what's in the
11 mine plan, I guess I'm having some difficulty understanding
12 this too. So I'll give you one more crack at this and then
13 we'll need to move on.

14 MS. ANDERSON: Okay. Sure.

15 Q. (BY MS. ANDERSON) Let's talk a little bit about
16 water wells. Are you aware that there's probably a lot of
17 water wells in the area, given a lot of homes in the area?

18 A. Yes.

19 Q. Okay. Can blasting impact water wells?

20 MR. LAROCK: Mr. Chairman, I'm going to
21 have to object. I know it doesn't sound like the same line
22 of questioning, but again, the Land Quality rules and
23 regulations require protection to groundwater wells.

24 MS. ANDERSON: I guess, again, I'm getting
25 at what's in the permit application to make sure those

1 requirements are met.

2 COUNCIL MEMBER FLITNER: Is he really
3 qualified to answer a question about what's going to happen
4 to water wells?

5 MS. ANDERSON: He's the blasting guy.

6 CHAIRMAN BAGLEY: Yeah. It's -- it's not a
7 building, but it is something. I'll allow this question.
8 And I think -- I mean, I -- we have blasting regulations
9 that presumably have been set, as we've heard, to address
10 these issues. And so go ahead and ask that question.

11 Q. (BY MS. ANDERSON) Okay. Mr. Emme, are you
12 aware of times that blasting has impacted water wells?

13 A. No.

14 Q. No. So never in the history of the DEQ program
15 that you're aware of?

16 A. We have had complaints. We've investigated
17 complaints about a potential blasting impacting wells. We
18 have actually run a downhole camera down a well that
19 complainant thought blasting was affecting it. We had the
20 camera sitting right above the groundwater in the well
21 when the blast went off at the neighboring mine and there
22 was not even a ripple in the water. We have had mining
23 operators that have replaced wells because it was cheaper
24 to replace well from a complaint than it was to sit and go
25 through the informal conference with the director, sit in

1 front of the EQC, bring their lawyers in from their home
2 office, wherever that might be. But they've also had the
3 operators -- or the complainant sign a nondisclosure that
4 their blasting did not affect the well. So, no, we
5 have -- we have had no actual wells impacted by blasting.

6 Q. Okay. Just one last question on the orange
7 clouds. Can you explain to the council just the toxicity
8 of that and how that matters potentially for the public?

9 A. The orange cloud -- the NOx cloud that we get
10 from a lot of our casting operations is highly toxic.
11 Some regulatory agencies, like CAL/OSHA, they have short-
12 term disclosure limits as low as one part per million for
13 that orange cloud. And it's a tough thing to monitor
14 because you gets a little bit of shift in wind and you
15 don't get it coming over your monitors.

16 Initially, when the blast goes off, heat of the
17 reaction causes that NOx cloud to rise. It is much
18 heavier than the atmosphere. As it drifts off site, it
19 tends to settle back to the surface. It's highly toxic.
20 In the Powder River Basin, all the mines have either
21 permit conditions or have voluntarily put restrictions on
22 their operations. They don't shoot cast blast when the
23 wind's blowing towards neighbors because of toxicity of
24 the cloud.

25 Q. Okay. And you just reminded me I did have one

1 question on wind direction too. Just to clarify, there's
2 nothing in the permit application or you didn't consider
3 conditions would limit blasting during high wind days, for
4 instance?

5 A. No, I didn't, because I don't feel like we'll
6 have a NOx problem at this mine because shots are going to
7 be relatively small. They're not going to cast blast.
8 Cast blasts are the shots that usually produce the NOx
9 fumes. If we have a problem with NOx, then it's at that
10 point in time we would probably require the operator to
11 have wind restrictions and not shoot when the wind blows
12 towards neighbors.

13 Q. So, for instance, some of the mines in the
14 Powder River Basin, we do have those kinds of restrictions
15 in the permit application?

16 A. Many of them do, yes.

17 Q. Okay. All right. I might shift over to bond.

18 I think during your direct testimony you said
19 that Brook needs to give specifics about what they plan to
20 do in the first year prior to you calculating the bond,
21 right?

22 A. That's right.

23 Q. When are they going to give those specifics?

24 A. If we get approval to issue a permit, they will
25 have to give us more specifics. And it may be exactly

1 what we saw on the map, and then we'll have to review that
2 bond and set it.

3 Q. Okay. So, Mr. Emme, let's just walk through
4 this a little bit. So we're here at a contested case
5 hearing. We know some point there's going to be a
6 decision from the council. And then after that decision
7 from the council, would you agree that there's a 15-day
8 period where we either get the permit denied or granted --
9 granted, right?

10 A. Well, there is a 15-day period, but their permit
11 will not be issued until the bond is set and in place.

12 Q. So you can take longer than that 15 days in the
13 statute if you need it?

14 A. If -- if they don't have the bond in place, the
15 permit won't get issued until the bond's in place.

16 Q. Okay. So you're saying DEQ probably -- and
17 maybe this calls for a legal conclusion. I'm already
18 seeing the objection here, but to the extent that you need
19 to take more time, you feel you can take it?

20 A. I would get the review done in the regulatory
21 time frame, but then it's incumbent upon the operator to
22 get the bond in place and approved by our Cheyenne staff.

23 Q. Okay. I think you're aware of the general
24 purpose of the bond, right? That it's -- and the history
25 of the Environmental Quality Act and SMCRA and why the

1 bonding program's important, right?

2 A. Yes.

3 Q. Could you kind of tell us about that?

4 A. Well, we have a reclamation bond. So if an
5 operator walks away, the state has revenue money in place
6 to reclaim the mine site.

7 Q. Are you aware that there's public notice and
8 comment provisions generally for a bond amount? Do you
9 agree with that, that the public generally has the right
10 to comment on the bond amount?

11 MR. LAROCK: Objection calls for a legal
12 conclusion.

13 Q. (BY MS. ANDERSON) In your review of other
14 permit applications, is there generally a bond set in a
15 way that allows the public to review that bond amount?

16 A. The bond is set in the permit, and there is a
17 public comment period before the permit is approved.

18 Q. All right. So I guess I'm getting at here,
19 where's the public comment period for the bond amount?

20 A. We don't have a bond in place yet.

21 Q. Right. So how are we going to comment on it?

22 A. Once we go to issue the permit --

23 COUNCIL MEMBER FLITNER: Mr. Chairman.

24 CHAIRMAN BAGLEY: Yeah. Just a minute.

25 COUNCIL MEMBER FLITNER: Are we talking

1 with this particular permit or are we talking about DEQ
2 regulations in a broad sense here? Because I get the
3 feeling that he's doing what he's supposed to be doing by
4 state regulations and we're quizzing him on that versus
5 what -- I mean, if there's holes in this permit, point them
6 out to us. Tell us exactly what they are. But this
7 question and answer about in the broad sense doesn't help
8 us.

9 MS. ANDERSON: We're talking about this
10 permit.

11 COUNCIL MEMBER FLITNER: If you can target
12 this -- okay. But it sounds like he's been doing this like
13 this for years. And I can't distinguish between what's
14 different about the process of this permit and what might
15 be the process in the Powder River or anywhere else. I'm
16 looking for deficiency in this permit. If that's what
17 you're looking for --

18 MS. ANDERSON: Thank you, Mr. Flitner.

19 COUNCIL MEMBER FLITNER: -- I want you to
20 make it really clear for me because I'm kind of slow.

21 MS. ANDERSON: Okay. Thank you,
22 Mr. Flitner. I will get exactly right there.

23 Q. (BY MS. ANDERSON) So I just asked you generally
24 in the -- you know, when you review bonds and you set
25 bonds, and generally they're set at a time that allows

1 public comment, right?

2 A. For the initial permit.

3 Q. Right. So in this permit application, the bond
4 has yet to be set, right?

5 A. That's right.

6 Q. Where is the public comment period?

7 A. I guess I can't answer that for you.

8 Q. You can't answer it?

9 A. I guess I can't.

10 Q. Okay. Let's talk a little bit about the bond
11 estimate provided by Brook. Can you talk a little bit
12 about contingency factors in a bond estimate?

13 A. Yes. We include the contingency factors for
14 profit, project design, administration, accounting, site
15 security. We also have an unknown to take care of acts of
16 God. Maybe a large flood or something like that. I think
17 our contingencies cover about all the bases for any large
18 project.

19 Q. Okay. And would you agree with me that a
20 contingency factor is important, not just for the permit
21 applicant, but actually if DEQ would have to take over in
22 the case of a forfeiture?

23 A. The contingency is very important if the state
24 has to take over bond.

25 Q. Okay.

1 A. They have enough money to do the project, yes.

2 Q. Right. So -- and would you agree with me that
3 contingency factors are important regardless of the size
4 of the project?

5 A. Yes.

6 Q. So in the course of your review of the bond
7 estimate from Brook Mine, are you at all concerned about
8 some of those contingency factors are zeros?

9 A. In this particular operation I'm not, because I
10 think the overall bond, as I said, is very robust.
11 There's a line item in the contingencies \$125,000 for site
12 security, for a 30.8-acre site is exorbitant.

13 Q. But would you agree that there's some number for
14 that contingency factor and it could be maybe prorated or
15 adjusted for size?

16 A. There should be some number, but that particular
17 line is very high. And I think overall the contingencies
18 are adequate and the bond is more than adequate.

19 Q. So are you saying that even though there are
20 some zeros, maybe there's enough cushion and a couple of
21 the other lines that you could adjust it over to some
22 other line?

23 A. I believe so.

24 Q. Okay. Are you generally aware of the AML work
25 in the area?

1 A. Somewhat.

2 Q. Somewhat?

3 Are you aware at all about the costs of that AML
4 work in the area?

5 A. No.

6 Q. No. Okay. Then I won't ask you any questions
7 about that.

8 MS. ANDERSON: And that's all I have.
9 Thank you.

10 CHAIRMAN BAGLEY: Thank you, Ms. Anderson.
11 Let's take a 10-minute break -- 12-minute break. I have
12 4:13. Let's start at 4:25.

13 (Hearing proceedings recessed
14 4:13 p.m. to 4:25 p.m.)

15 CHAIRMAN BAGLEY: All right. It's 4:25.
16 Let us return.

17 (Council Member Flitner
18 is no longer present.)

19 CHAIRMAN BAGLEY: And we're up to
20 Mr. Gilbertz, please.

21 MR. GILBERTZ: Thank you.

22 CROSS-EXAMINATION

23 Q. (BY MR. GILBERTZ) Good afternoon, sir.

24 A. Good afternoon.

25 Q. Just a couple quick questions about these

1 issues.

2 We call these vibrations -- what have been
3 called vibrations, what we have happening when that
4 explosion happens is that's a shockwave transferred
5 through the strata, right?

6 A. That's right.

7 Q. Okay. And one thing we know is that when that
8 shockwave gets to these old abandoned mines, it is not
9 going to make them more stable, correct?

10 A. No. Probably not.

11 Q. Okay. And you said you didn't know much about
12 the work out at the abandoned mine stuff. So in thinking
13 about that and the abandoned mines in close proximity to
14 the Brook Mine, you were not aware that in 2014 the State
15 spent \$42,000 to mitigate just two sinkholes?

16 A. I was not.

17 Q. Okay. Not aware that added to another
18 mitigation project of \$33,000 that was ongoing?

19 A. I did not know that either.

20 Q. Or 2016 the State spent \$161,000 on subsidence
21 in that area?

22 A. I did not know that.

23 Q. Okay. And so the blasting plan does not take
24 into account additional subsidence that may be caused out
25 at the -- in these old abandoned mines, correct?

1 A. That's true.

2 Q. Okay. And neither does the bond?

3 A. No, it doesn't.

4 Q. Okay. Couple of questions about the blasting.

5 You -- if I gather rightly from your testimony, they can
6 once they submit their blast plan, they can blast any time
7 from sunrise to sunset, right?

8 A. If that's what's in their permit, yes.

9 Q. Okay. Then -- so then there wouldn't be
10 restrictions, anything -- any restrictions on that at all,
11 for example, blast sunrise to sunset on Christmas day?

12 A. That's true.

13 Q. Did the DEQ consider making some reasonable
14 limitations like that in this process with so many
15 homeowners in close proximity?

16 A. No, we did not.

17 Q. You mentioned that it was within the power of
18 the DEQ to put further restrictions on the blasting should
19 it deem that necessary; is that correct?

20 A. That's correct.

21 Q. So you did not, if I understand, investigate
22 historic buildings that might be more susceptible to these
23 shockwaves traveling through the ground to them?

24 A. No.

25 Q. Okay. And, therefore, not aware of a barn on

1 the Fisher property that's made out of rock and over a
2 hundred years old?

3 A. No.

4 Q. Would that be anything that DEQ would consider
5 is limiting the blasting to provide protection for any of
6 these types of old historic structures?

7 A. It could be considered. Again, it's going to
8 depend on how far the structure's away, the size of the
9 shots. If they stay within the standards set forth in the
10 rules and regs, I doubt it's going to have any impact on a
11 hundred-year-old barn.

12 Q. One of the things that the DEQ has done in other
13 circumstances is place a seismic monitor near the
14 habitable structure, say the Fisher house, to measure the
15 amount of shockwave that's making it through the substrate
16 to the Fisher home. DEQ's done that before, right?

17 A. I've done that, yes.

18 Q. You've done that.

19 And did you give any consideration to putting
20 any of those kinds of seismic monitors in for my
21 homeowner?

22 A. If we had complaints and felt it was necessary,
23 we could do that at any point in time.

24 Q. Okay. Only after complaints, then?

25 A. If we had a request -- it might not necessarily

1 have to be a complaint. If we had a request, we could do
2 it.

3 Q. And you mentioned that if they -- if damage is
4 caused, well, then the mine would have to pay for the
5 damage, right?

6 A. If you can prove that the damage was done by
7 blasting, yes.

8 Q. And that's the point. If the damage is done to
9 the Fisher home, they're left to the court system and
10 litigating with Brook's lawyers about whether or not the
11 damage was caused?

12 A. More than likely.

13 Q. On the weather restrictions, sounds like the --
14 the notion is if we have a problem, then we'll think about
15 the weather restrictions at a later date?

16 A. As far as NOx fumes are concerned, yes, I think
17 so. If we have a problem, but I do not foresee a problem
18 in this operation.

19 Q. Did you take -- you're from Sheridan, right,
20 sir?

21 A. I've been here for 42-plus years.

22 Q. Did you take into consideration in any way the
23 sort of local problem of having inversions in this valley,
24 which holds all the wood smoke and all the other kinds of
25 things in?

1 A. Yes. Inversions are very common. Not only in
2 Sheridan, but in the Gillette area. So I'm very aware of
3 aversion -- inversions and problems they cause, dust from
4 operations at mines, on county roads, as well as blasting.

5 Q. Okay. But as it stands today, no restrictions
6 on blasting during inversion events?

7 A. No.

8 Q. This last series of questions about this
9 conceptual understanding about how blasting was going to
10 occur. Pretty simple, aren't they?

11 A. Would you repeat that?

12 Q. Sure. The questions I just asked you about how
13 blasting was going to happen and whether there might be
14 restrictions, pretty simple questions, right?

15 A. Pretty simple, yes.

16 Q. Pretty easy for you to answer, right?

17 A. Yes.

18 Q. Do you find odd that the Fishers had to get all
19 the way into this room to have those questions asked?

20 A. I don't know if it's odd. Nobody has approached
21 me about any concerns except for the complaints that were
22 written and submitted to DEQ, and I've read those
23 complaints and I'm very aware of them.

24 MR. GILBERTZ: Thank you. No further
25 questions.

1 CHAIRMAN BAGLEY: Thank you, Mr. Gilbertz.

2 Mr. Gregersen, did you have any questions at this
3 point?

4 MR. GREGERSEN: Mr. Chairman, as I
5 expected, we have no questions.

6 CHAIRMAN BAGLEY: Thank you.

7 Mr. Sutphin.

8 MR. SUTPHIN: Yes, Mr. Chairman. Thank
9 you. I have a few questions.

10 CROSS-EXAMINATION

11 Q. (BY MR. SUTPHIN) Mr. Emme, good afternoon.

12 A. Good afternoon.

13 Q. Were you in the room when Mr. Kristiansen
14 referred to you as a world renowned blasting expert?

15 A. I was.

16 Q. How did that make you feel, Mr. Emme?

17 A. I thought that was very nice comment by my
18 coworker.

19 Q. I guess I want to follow up on a few of the
20 points that have been brought up and to stay consistent
21 with the pattern. Let's start with blasting, which is a
22 lot more fun anyway.

23 Would you agree that your approach to blasting
24 plans and permits is to allow sufficient flexibility so
25 that blasting can be done efficiently and safely?

1 A. Yes.

2 Q. You testified about a couple of the issues where
3 it sounded like you don't want to overly restrict an
4 operator to, for example, only using ANFO, right?

5 A. That's true.

6 Q. Do you recall that you submitted a comment to
7 Brook during the comment and response period regarding
8 this sort of concept of having more flexibility in the --
9 in the blasting plan?

10 A. I remember making comment like that.

11 Q. So -- and I'm -- I'm maybe trying to read your
12 mind too much, but I'd like to look at one of the comments
13 that you made in the comment response period. This is
14 found in DEQ Exhibit Number 34, page 129. And, Mr. Emme,
15 you don't need to bring it up. We'll give it a shot here
16 on the screen. See if this will work.

17 I'm particularly interested in your -- well, do
18 we have Comment 13 on that page? No. I apologize. Let's
19 try 128. It's a little blurry up there too. Well,
20 obviously my notes are wrong, Mr. Emme. Let's go back to
21 129.

22 CHAIRMAN BAGLEY: 34-128?

23 Q. (BY MR. SUTPHIN) That's funny. Well, let's
24 just look, Mr. Emme, at that -- the page that we do have
25 up. Maybe I was right after all. I'm interested, I

1 guess, in comment DE-16. And Carri will blow that up for
2 us. Just the comment.

3 So first, Mr. Emme, are you DE?

4 A. Yes.

5 Q. Okay. Can you just take a look at this, but
6 just summarize for me, if you will, the nature of your
7 comment.

8 A. Their initial blasting plan in the mine plan had
9 very specific pattern sizes, amounts of stemming that they
10 were going to use, type of explosive they were going to
11 use, and a lot of their specifics were not good design
12 parameters for a shot. For instance, a 15-foot coal seam
13 drilled on a 35-by-35 pattern with a 7 and seven-eighths
14 inch drill with 4 and a half foot of stemming is not going
15 to produce a good shot, and we'd have a lot of fly rock,
16 wouldn't get good fragmentation. So I try to note some of
17 these things and coach them to not be as specific, be more
18 general in what they were going to do for their blasting
19 and to use the best practices, best products available.

20 Q. And were you satisfied with Ramaco -- or rather
21 Brook's response?

22 A. Yes.

23 Q. Now I'd like to zoom in on -- actually, to be
24 fair, it looks like -- yeah, so let's look at the
25 response. So do you -- first I guess did you actually

1 look at the Section MP.14.8.2 to confirm it had been
2 changed as Brook indicated it had?

3 A. Yes.

4 Q. Okay. And the response here says, "The text now
5 provides more open design standards for Ramaco to function
6 as necessary for safe and efficient blasting during mining
7 operations." Did you feel that was an important change?

8 A. I did.

9 Q. And if you had not agreed with that change, what
10 would you have done?

11 A. I would have made another comment requesting
12 different language, and I probably would have recommended
13 some language that they put in the permit.

14 Q. Let's talk briefly about these abandoned mines
15 that have been referenced. Isn't it true that there is a
16 setback required of 500 feet from any known existing
17 underground mines and the blasting operations?

18 A. Any surface mine that is going to do blasting
19 within 500 foot of an active or abandoned underground mine
20 has to have the specific approval of the federal
21 regulatory agency, as well as state regulatory agency that
22 regulates underground mining. That would be MSHA, Mine
23 Safety and Health Administration, for the feds, and State
24 Mine Inspector for the state.

25 Q. And so that's a commitment and a requirement

1 that Brook will have to live up to in this operation,
2 right?

3 A. That's true.

4 Q. What happens if they violate that?

5 A. They would get a violation, probably a fine.

6 Q. What limitations are in place in the Brook Mine
7 permit file and in the rules and regulations to protect
8 structures from damage from blasting?

9 A. There are specifics to the rules and regulations
10 that the Brook Mine has said that they will comply with to
11 protect structures, and there are limits on how much
12 ground vibration we can -- the mine can produce at a
13 nearby structure, the maximum air blast allowed at a
14 nearby structure, the mine cannot throw fly rock off the
15 permit or more than half the distance of any occupied
16 structure. Could be their own structure. So the rules
17 and regulations protect the public pretty well.

18 Q. Speaking of protecting the public, you mentioned
19 earlier in your testimony that you don't believe that any
20 recreational users will be at risk of harm from blasting
21 operations, right?

22 A. That's true.

23 Q. And I think -- and you may not have said it this
24 way, but I certainly came away thinking you were talking
25 about steps that will be taken to make sure that no one

1 wanders around in an active blasting area. Fair?

2 A. That's fair. That's what any certified blaster
3 has to do before he initiates a shot.

4 Q. Do you know what the blasting plan says about
5 steps that will be taken to prevent unauthorized access
6 during blasting?

7 A. The blasting plan, again is pretty generic. But
8 all blasts will be under the supervision of a certified
9 blaster, and part of his designated responsibility is to
10 make sure that all access points to the blast area are
11 barricaded so no one gets into the blast area during the
12 shot or before the all clear is given.

13 Q. Let's take a quick look at what the mine plan in
14 this permit file says about unauthorized access control.
15 Okay? This is on DEQ Exhibit 12-081. And Carri has
16 already blown up a portion of the bottom of that page. Do
17 you see that there?

18 A. Yes.

19 Q. And -- and we don't need to spend a whole lot of
20 time on this piece, but it -- this is the beginning of a
21 list of steps that will be taken to control unauthorized
22 access; is that fair?

23 A. Yes.

24 Q. Okay. Let's look at the very next page, which,
25 of course, is 082, still in DEQ Exhibit 12. And let's

1 just blow up the top part of that list. So I know we left
2 one piece on the other page, but, Mr. Emme, in your
3 experience and in your opinion, do you believe that these
4 are sufficient steps to prevent unauthorized access during
5 blasting operation?

6 A. Yes.

7 Q. Thank you. Does DEQ monitor and force --
8 monitor and enforce the blasting program?

9 A. Yes.

10 Q. What happens if DEQ is made aware of some
11 violation of the blasting rules and regs or the permit
12 conditions?

13 A. We write a violation, oftentimes accompanied by
14 a fine.

15 Q. Did you say you can fine the company?

16 A. Yes.

17 Q. Can you also stop work?

18 A. Yes.

19 Q. Have you ever had to do that?

20 A. In certain parts of a mine we've shut down
21 operations at a portion of a pit, yes.

22 Q. Are you aware that Big Horn Coal blasted in the
23 area of the proposed Brook Mine for its historic surface
24 mining operations?

25 A. Yes.

1 Q. Do you have a personal knowledge about any of
2 the blasting procedures that they used?

3 A. I don't know how much personal knowledge I have,
4 but I knew a lot of the blasters at Big Horn worked for
5 the same company that owned Big Horn years ago.

6 Q. Do you know how the blasting that Big Horn Coal
7 conducted historically would compare in magnitude to the
8 blasting that Brook is proposing?

9 A. Size of shots may be similar. But probably
10 smaller, because I got that they're going to bring an
11 electric shovel in to remove overburden. And, again, it's
12 going to be sporadic blasting. They're going to open one
13 box cut, shoot that overburden, remove it, shoot the coal,
14 remove it, and move their auger in and start the auger
15 mine.

16 Q. Let me make sure we're clear, because you've --
17 we might have crossed our wires there. You expect that
18 the Brook Mine blasting will use smaller shots, true?

19 A. I do anticipate that.

20 Q. And you also would -- I think what you've said
21 is that the frequency of Brook's blasting will be less
22 frequent than -- than what Big Horn Coal did historically,
23 true?

24 A. Yes.

25 Q. Okay. Isn't it true that many, if not all, of

1 the same houses and structures and buildings that have
2 been here for a hundred years were also there when Big
3 Horn Coal was doing its blasting?

4 A. Many of them. There's probably a few new ones
5 since Big Horn shut down, but most of them.

6 Q. I'm sad to say I'm probably done asking you
7 about blasting, because I like that subject. But let's
8 briefly cover a few issues -- actually, we're not done on
9 blasting. I apologize.

10 You heard some questions from Mr. Gilbertz about
11 some expensive AML costs to repair some subsidence. Do
12 you remember those questions?

13 A. I do.

14 Q. And, in fact, I don't remember the number he
15 said, but it seemed like a pretty big number to repair
16 just two sinkholes. Do you remember that?

17 A. Yes.

18 Q. So those abandoned mine lands -- I mean, by
19 their very definition, those are old mines, right?

20 A. Very old.

21 Q. And do you know what I mean when I say "prelaw"?

22 A. Yes.

23 Q. What does that mean to you?

24 A. Pre-SMCRA.

25 Q. Okay. So the fact that AML is dealing with this

1 situation means that there's -- there just ain't nobody
2 around to pay to repair those old mines; is that fair?

3 A. That's fair.

4 Q. He also said something -- or you, in visiting
5 with him, said that the bond calculation doesn't consider
6 reclaiming old mine subsidence that would have been caused
7 by Brook's blasting, right?

8 A. That's true.

9 Q. But isn't it true that in year zero Brook Mine
10 will do zero blasting?

11 A. That's true.

12 Q. Okay. So would you expect the bond to include
13 an amount to possibly repair blast-caused subsidence when
14 there's no blasting taking place?

15 A. No.

16 Q. I think now we can talk more about the bonding.
17 Did you review the objections in -- to the Brook
18 Mine as they relate to the bonding amount?

19 A. Yes.

20 Q. And to be very specific, we're talking about
21 reclamation bonding, right?

22 A. Yes. That's right.

23 Q. Okay. You've already told us about what the --
24 the proposed bond calculation is, and can you remind me
25 roughly what that amount was?

1 A. \$372,000.

2 Q. Did you specifically review the objection letter
3 filed by Powder River Basin Resource Council with respect
4 to the reclamation bond amount?

5 A. Yes.

6 Q. So I want to take a look at that and ask you a
7 few questions. Okay?

8 A. Okay.

9 Q. So we're going to take a look at Powder River
10 Basin Resource Council Exhibit Number 1. Mr. Emme, we
11 just handed you a hard copy of that. Okay?

12 A. Yes.

13 Q. Will you please turn to page 8 of that objection
14 letter. The objection regarding the reclamation bond
15 begins at the bottom of page 8. Do you see that?

16 A. I do.

17 Q. Do you know who prepared these bond-related
18 objections for Powder River Basin Resource Council?

19 A. I do not.

20 Q. Have you ever heard of a guy named Stu Levit?

21 A. I actually read his deposition.

22 Q. Okay. Have you ever talked to Stu Levit?

23 A. No.

24 Q. Okay. So having read his deposition, do you
25 understand that Mr. Levit was, in fact, the one

1 responsible for drafting these objections -- or this
2 portion of the PRBRC objection letter?

3 A. I did not know that he drafted this objection
4 letter.

5 Q. Okay. I think -- you just said you never talked
6 to him; is that right?

7 A. Never talked to him.

8 Q. Okay. So you probably don't know why he's not
9 listed as a witness to testify here?

10 A. I don't, but I can speculate.

11 MS. ANDERSON: Objection.

12 We don't want you to speculate.

13 Q. (BY MR. SUTPHIN) I was just going to say that
14 too. We don't want you to speculate.

15 Let's take a look at the second -- or last
16 paragraph on page 8. Do you see where it says "Based on
17 our review of the reclamation bond estimate it is too low
18 to protect the public interest." Do you agree with that
19 opinion?

20 A. No.

21 Q. In fact, I think you said that the bond estimate
22 is robust, true?

23 A. True.

24 Q. How much would you have told Brook to bond if
25 they had not submitted their own proposal to you?

1 A. I'd probably have reviewed it and gone ahead and
2 just stuck with their number, like pretty much what we
3 did.

4 Q. But I think you said if you did the calculations
5 independently, you would have come in at later number,
6 right?

7 A. That's true.

8 Q. What was that number?

9 A. I don't have a specific number, but I can say
10 that topsoil costs were probably 40 percent higher than
11 what I would have used.

12 Q. I appreciate that.

13 Let's now turn to page 9 of the Powder River
14 Basin Exhibit 1. I'm very interested in the last
15 paragraph on page 9. Here it says Costs to Restore
16 Hydrologic Conditions. "The bond fails to include
17 sufficient funds to carry out all operations needed to
18 restore to pre-mine hydrologic conditions within the
19 permit area -- and in any offsite areas that are
20 impacted." Isn't it true that the only thing Brook is
21 proposing to do in year zero is scrape the topsoil off of
22 approximately 30.8 acres?

23 A. Strip topsoil and building a couple of
24 buildings.

25 Q. Would you expect, in your experience with

1 bonding, that it would require or need to include anything
2 about the hydrologic conditions given that amount of work?

3 A. Not for that minimal surface impact, no.

4 Q. Let's turn the page to page 10. The first
5 paragraph refers to independent reclamation design. Do
6 you see that?

7 A. Yes.

8 Q. Bear with us. We're going to bring it up on the
9 screen here. What -- what is generally meant by
10 independent reclamation design in your bond formula?

11 A. In a large surface mine, it would be for some
12 independent mining construction firm to design the
13 reclamation, backfill the pit, bring it to a state where
14 we had three grade nonerosive slopes and reclaim as close
15 as possible to approximately original contour.

16 Q. Would you expect an independent reclamation
17 design for year zero in a mine that is only proposing to
18 disturb 30.8 acres of surface?

19 A. There's no way that you would hire an
20 independent design firm to design any sort of reclamation
21 for a mine that's got 30.8 acres of surface disturbance.

22 Q. So given that answer, I think I know what you're
23 going to say about this, but what PRBRC claim would be an
24 appropriate amount for an independent reclamation design
25 for the year zero of the Brook Mine?

1 A. \$125,000.

2 Q. And what is your opinion of that number?

3 A. Well, I think I could do it in about an hour.

4 Q. So I -- I appreciate your answer, Mr. Emme, but
5 doesn't really translate super great on the record.

6 A. Okay. You can easily design this for a thousand
7 dollars.

8 Q. Okay. And I apologize, Mr. Emme, I'm asking you
9 these questions, but the fact of the matter is, based on
10 the testimony that we got from Mr. Levit at his
11 deposition, he was the one who did these numbers, and he
12 won't be here, so I don't get to ask him these questions.
13 So I appreciate your patience with me as I try to clarify
14 what I believe -- well, I won't say what I was about to
15 say.

16 So overall, of all the objections, are there any
17 objections regarding the proposed bond amount that you
18 feel deserve further discussion?

19 A. No.

20 Q. What happens -- assuming this permit is issued,
21 what happens when we get to what I'll call year one, the
22 second year of operations? Will Brook be required to
23 submit additional bonding?

24 A. They will submit an annual report. It will
25 document the disturbance on the ground at that time and

1 projected disturbance for the upcoming year, and they will
2 have to bond or the worst-case scenario, which, obviously,
3 would be the end of the next year, and then we'll have to
4 review that bond and make any adjustments we deem
5 necessary.

6 Q. Will the public have an opportunity to review
7 those -- those bond proposals for the next year of
8 operation?

9 A. No.

10 Q. Will there be any opportunity for someone to
11 question whether those bonds are high enough?

12 A. The public can come in and look at the permit at
13 any point in time.

14 Q. And is it fair to say that the reclamation bond
15 is cumulative? In other words, each year it will be
16 increased commensurate with the amount of disturbance
17 that's projected?

18 A. Generally, yes.

19 Q. How does one like Brook Mine go about getting
20 their bond money released?

21 A. They have to backfill the pit, topsoil, seed,
22 and then go through an extensive bond release process.

23 Q. Does the public get to weigh in on whether or
24 not the bond should be released?

25 A. There is a public comment period for that also.

1 MR. SUTPHIN: Okay. I don't have any other
2 questions, Mr. Emme. Thank you so much.

3 CHAIRMAN BAGLEY: Thank you, Mr. Sutphin.

4 Does the council have any questions? Tim's not
5 here. We'll start with Megan.

6 COUNCIL MEMBER DEGENFELDER: I don't have
7 any questions. Thank you.

8 CHAIRMAN BAGLEY: Meghan.

9 COUNCIL MEMBER LALLY: I have two
10 questions.

11 EXAMINATION

12 Q. (BY COUNCIL MEMBER LALLY) I read the
13 regulations that the notice has to be between 30 and
14 60 days for blasting. Does it have to list exactly what
15 hour and time, or is it more broad than that?

16 A. Most operations are going to pick the widest
17 window they can, Sunday through Saturday, sunrise to
18 sunset. We do have some operators that specify a window,
19 like I said, noon to maybe 4 p.m. Most operators want to
20 give themselves that widest window in case a piece of
21 equipment breaks down. They may typically shoot at
22 lunchtime. But then if a drill breaks down and they don't
23 get the shot off until 5:00 in the afternoon, they want to
24 give themselves that wide window.

25 Q. So mostly they'll say it's -- we're going to

1 blast on January 1 from sunrise to sunset? That would be
2 what the notice would say?

3 A. It would say in the period between January 1,
4 2017, December 31, 2017, we will shoot Sunday through
5 Saturday, sunrise to sunset.

6 Q. Okay. Then how does that work with the 30-day
7 notice --

8 A. They can't --

9 Q. -- to --

10 A. Excuse me.

11 Q. -- to landowners?

12 Say if they're only going to blast two days a
13 year, theoretically, and they have to give public notice,
14 but if they're saying we're going to do it within the next
15 year, that's not really noticing the public as to when
16 they're going to be blasting.

17 A. Because this operation's a little bit different
18 than a mine in, say, the Powder River Basin shoots every
19 day --

20 Q. Right.

21 A. -- you know, the operator may decide to call up
22 people and say our blasting is going to commence June 1st
23 and it should take us about six weeks of blasting to, you
24 know, effectively shoot and excavate the first box cut.

25 Q. Okay. And then second one -- and I think you've

1 already answered this, but is weekend blasting normal? It
2 sounds like they just sort of designate they're going to
3 blast all the time and --

4 A. At the coal mines -- bigger coal mines of the
5 state, you know, Kemmerer, Rock Springs, Powder River
6 Basin, up into the Montana in the Powder River Basin, they
7 shoot daily, and they shoot multiple times daily because
8 of their production needs. So, yes, they shoot every day
9 of the week, they shoot on holidays. That's why they want
10 to give themselves the widest window they can.

11 Q. And would it be reasonable -- and you may not
12 know the answer to this -- in a case like this, where it's
13 just such a short blasting period, to put some
14 restrictions in considering the number of houses that are
15 nearby?

16 A. It is possible, yes.

17 COUNCIL MEMBER LALLY: Thank you.

18 CHAIRMAN BAGLEY: Nick?

19 COUNCIL MEMBER AGOPIAN: Just a follow-up
20 on Meghan's question.

21 EXAMINATION

22 Q. (BY COUNCIL MEMBER AGOPIAN) If you were to
23 decide that restrictions were necessary based on the
24 objections or comments that have been received, would
25 you -- would that fall within -- is that something that

1 put in conditions --

2 THE REPORTER: I'm sorry. I can't hear.

3 Q. (BY COUNCIL MEMBER AGOPIAN) Would that fall
4 within the window of things that can -- that can be
5 covered in conditions of approval on the final permit?

6 A. Yes. We can condition the permit with
7 restricted, you know, whatever days, whatever times we
8 felt necessary.

9 COUNCIL MEMBER AGOPIAN: Thank you.

10 CHAIRMAN BAGLEY: Deb?

11 COUNCIL MEMBER BAUMER: No questions.

12 CHAIRMAN BAGLEY: I actually have a couple
13 of questions.

14 EXAMINATION

15 Q. (BY CHAIRMAN BAGLEY) So I'm not familiar with
16 what would need to be blasted for this mine. I mean, we
17 heard earlier about highwall mining and they -- the coal
18 itself is removed by like a some kind of drilling
19 operation that goes in and kind of -- it didn't seem like
20 there was any blasting involved with that. Could you
21 explain to me where the blasting comes in for this
22 particular mine.

23 A. Okay. When they excavate the first box cut, I
24 think it's been referred to as a trench at times in the
25 commentary. That native overburden would have to be

1 drilled and shot to be effectively, you know, removed,
2 scraper, front-end loader, whatever. Once they get that
3 first box cut opened up, that first chunk of coal that
4 they've exposed, they drill and shoot that. Once they get
5 that excavated, then they come in with the highwall miner,
6 which is essentially like an underground miner. You know,
7 most of them have a big auger head on them, and they just
8 start driving that into their drifts after they've got
9 that box cut open. And during that point in time there's
10 no blasting.

11 Q. So the blasting occurs, really, when they're
12 getting the box cut opened and prepared, and then there's
13 this time when they're doing the actual highwall mining,
14 whether -- there is no blasting on that particular
15 location?

16 A. That's right.

17 Q. About how long does -- would it take to open up
18 one of these box cuts?

19 A. You know, it's going to be dependent on what
20 type of equipment they use to open it. Some of their box
21 cuts are bigger than others. Again, I don't have a good
22 number on yardage. You know, it might just be a few weeks
23 to open that first box cut.

24 Q. Uh-huh.

25 A. Some of the longer cuts could be, you know, a

1 few months.

2 Q. So it's not like -- it's not going to be like
3 big open pit mines where daily blasting is how they get
4 coal out.

5 A. Right.

6 Q. It's just open up the box cut. Okay.

7 A. That's correct.

8 Q. So you said at one point that you did not
9 consider this orange cloud issue with the NOx to be a
10 problem for this site. Could you explain to me why?

11 A. Generally, the only shots that we see NOx
12 produced from in this part of the world are the cast
13 shots. Now, occasionally you'll see a shot that maybe
14 90 percent of the bench was dry and they used ANFO, and a
15 few holes might get wet, start to break down that ammonium
16 nitrate, and that portion of the shot might produce a
17 little bit of color. Coal is generally more competent
18 than the overburden we have, so when you shoot coal, in my
19 career, I have seen NOx produced from a coal shot one
20 time. It's almost unheard of. And in that case, it was
21 because they use ANFO and the product got wet.

22 These small shots they're usually loaded and
23 shot the same day, doesn't give the powder long to break
24 down. They're not as energetic as a cast shot. And the
25 energetic shots to form the overburden, and that's the big

1 reason we get NOx from cast blasting.

2 Q. So most of the times you see that is with this
3 cast blasting where you're trying to actually completely
4 move the -- the rock or the whatever it is you're
5 blasting, completely move it without having to get any
6 shovels in. We can just put enough energy into it that it
7 moves itself to where you want it.

8 A. The cast blasting, they've actually got a big
9 pit void that they're moving the dirt into. In this case,
10 open box, there's no pit void to move any dirt to. You
11 know, they take that out of the pit, put it in an
12 overburden stockpile, they mine the coal, do all their
13 auger mining, then they backfill the pit.

14 Q. So they're blasting really in a way to break
15 it up so that they can get in and, in essence, shovel it
16 out?

17 A. Yeah, because, you know, front-end loaders,
18 scrapers, small shovel, whatever your excavation
19 equipment, they don't -- they don't produce well in unshot
20 rock.

21 CHAIRMAN BAGLEY: Okay. Okay. Thank you.

22 THE WITNESS: Uh-huh.

23 CHAIRMAN BAGLEY: Mr. LaRock, redirect.

24 MR. LAROCK: Just three questions on
25 redirect.

1 REDIRECT EXAMINATION

2 Q. (BY MR. LAROCK) First, if the Fishers are
3 worried about the integrity of their structures, can they
4 ask for a pre-blast survey?

5 A. If they live within a half mile of the permit,
6 the operator has to do the pre-blast survey.

7 Q. Okay. Second, changing gears, talking about the
8 orange cloud. Besides good-heartedness and wanting to
9 make sure the air stays clean, is there any reason that a
10 mine would want to use waterproof shots in watery area?

11 A. James, would you repeat that, please?

12 Q. Sure. Besides its general good-heartedness and
13 its desire to keep pollution out of the air, is there a
14 practical reason the mine is going to use water-resistant
15 shots in wet dirt?

16 A. Yes. Ammonium nitrate-fuel oil is the primary
17 blasting agent used in North America. But ammonium
18 nitrate prills break down. They're hygroscopic, they
19 absorb moisture. They'll absorb moisture from a hole you
20 think is dry, from the borehole walls, because a lot of
21 our overburden has inherent moisture in it that the rock
22 doesn't give up. So if you load the ANFO in a dry hole,
23 sometimes it still gets NOx.

24 So, you know, operators often use a mixture of
25 ammonium nitrate and a water-resistant emulsion to get a

1 waterproof product that is not going to break down if it
2 gets wet.

3 Q. And final question, just to clarify. Does a
4 bond have to be in place in order for a permit application
5 to be technically adequate?

6 A. No.

7 MR. LAROCK: No further questions.

8 CHAIRMAN BAGLEY: All right. Thank you,
9 Mr. Emme.

10 THE WITNESS: Thank you.

11 CHAIRMAN BAGLEY: Do you have any more
12 witnesses, Mr. Kuhlmann?

13 MR. KUHLMANN: Mr. Hearing Officer, DEQ
14 does not have any additional witnesses to call in its case
15 in chief, so we rest our case in chief and reserve ability
16 to provide rebuttal, if necessary.

17 CHAIRMAN BAGLEY: All right. Thank you.
18 So I would like to get -- keep moving ahead here.

19 Mr. Pope or Mr. Sutphin, would you please call
20 your first witness.

21 MR. SUTPHIN: Thank you, Dr. Bagley. Brook
22 Mine will call Mr. Jeff Barron as its first witness.

23 (Witness sworn.)

24

25

1 JEFF BARRON,

2 called for examination by Brook Mine, being first duly

3 sworn, testified as follows:

4 DIRECT EXAMINATION

5 Q. (BY MR. SUTPHIN) Good afternoon, Mr. Barron.

6 How are you today?

7 A. I am doing grand. Thank you for asking.

8 Q. Mr. Barron, do you have your cell phone in your
9 pocket?

10 A. I do.

11 Q. Would you please put it on airplane mode?

12 A. I can do that. It's done.

13 Q. Thank you.

14 Mr. Barron, would you please introduce yourself
15 to the members of the Environmental Quality Council.

16 A. I would love to. I'm Jeff Barron. I work for
17 Western Water Consultants, professional engineer, and I'm
18 glad to be here.

19 Q. Where do you live, Mr. Barron?

20 A. I live in the town of Ranchester.

21 Q. How long have you lived in Sheridan County?

22 A. Moved here in 2005.

23 Q. How close do you live to the proposed Brook
24 Mine?

25 A. I'm well within six miles.

1 Q. Are you concerned about trying to keep Sheridan
2 County safe?

3 A. Absolutely.

4 Q. Are you involved in the community in any way?

5 A. Actually involved in the community in several
6 ways. I serve on the Ranchester town council as a
7 councilman. I have served several years on the Tongue
8 River Fire Department, which the residents and the mine
9 are in that district. And then I serve on the Marion
10 Daycare board.

11 Q. Would you do anything -- or at least do anything
12 in relation to the Brook Mine permit and knowingly destroy
13 any part of Sheridan County?

14 A. Absolutely not.

15 Q. You mentioned that you are a professional
16 engineer. And I know we heard some testimony about that
17 from other witnesses. Does the fact that you are a
18 professional engineer influence the way that you have
19 treated the Brook Mine permit in any way?

20 A. It does. My license comes from state statute
21 under the public health and safety clause. So my primary
22 duty outside of any other duties is beholden to the public
23 health and safety.

24 Q. Does that fact affect the decisions that you're
25 willing to make to try and to get the Brook Mine

1 permitted?

2 A. It does.

3 Q. How so?

4 A. Chief among my duties, outside of employment, is
5 the protection of the public and health and safety. And
6 so beyond above every single one of those, I hold that
7 paramount.

8 Q. What is your educational background?

9 A. I received my bachelor's of science degree from
10 Montana State University in civil engineering. There is a
11 facet of that called Bioresource Engineering, which
12 focuses on environmental issues.

13 Q. What do you mean by facet?

14 A. So inside the civil engineering program, the
15 Bioresource Engineering Program deals more with geology,
16 geotechnical issues, water, hydrology, hydrogeology, as
17 opposed to designing a high-rise building.

18 Q. How has that emphasis on bioresources -- well,
19 has that emphasis on bioresources helped you in
20 preparation of the Brook Mine permit?

21 A. It has. It's had a unique qualification for
22 preparing this type of permit application.

23 Q. How so?

24 A. Many of the things that I learned in my
25 undergrad are part of the permit application. We deal

1 with hydrogeology in a permit application, as you all
2 heard. We deal with precipitation. We deal with geology.
3 We deal with vegetation. All of those things that were
4 part of the focus of my undergrad are also the focus of
5 this permit application.

6 Q. What is your engineering background and
7 experience?

8 A. I have worked with Western Water since 2005. In
9 2009 I received my professional engineering license. And
10 I hold that license in two states, both in Wyoming and in
11 Montana.

12 Q. During the time that you've worked as an
13 engineer, have you worked on other mine permits?

14 A. Yes. When I began working with Western Water
15 Consultants, day one was working with Black Thunder permit
16 application.

17 Q. And how many mining permits would you say you've
18 worked on in your time as engineer?

19 A. I've worked on dozens.

20 Q. And of those mine permits -- I mean, just so
21 that we're clear, are we talking about new permits or
22 renewals? Can you please explain to the council what your
23 experience has been?

24 A. So Brook Mine is the first new permit
25 application in several decades, so I've not worked on any

1 new permit applications. However, I've been involved with
2 amendment applications, I've been involved with mergers of
3 applications from one mine to another, merging those
4 documents. I've also worked with minor modifications to
5 existing permit applications, major modifications to
6 permit applications, even something as simple as
7 permitting a single sediment pond within a permit
8 application.

9 Q. How long has Brook Mine been working on this
10 permit application?

11 A. We began our work in May of 2013.

12 Q. And let's be really clear. When you say "we,"
13 what do you mean?

14 A. Western Water Consultants began work on the
15 application 2013. However, Brook Mine was operating and
16 preparing for a permit application prior to our
17 involvement.

18 Q. You were here to listen to Mr. Kristiansen's
19 testimony, right?

20 A. I was, yes.

21 Q. And did you hear him talk about the permit
22 process overview just generally?

23 A. I did, yes.

24 Q. Well, did you agree with Mr. Kristiansen on how
25 the process works?

1 A. I do, yes.

2 Q. Would you add anything that you think might help
3 the council?

4 A. No, I think Bj did an excellent job in
5 describing the process.

6 Q. Would you describe the permitting process as
7 dynamic?

8 A. Absolutely dynamic.

9 Q. What does that meant to you, I guess, to be
10 clear?

11 A. So the permitting process, from inception and
12 really until final bond release is completed, changes,
13 additions and subtractions, both during the
14 pre-application of the phase, during the application
15 phase, even after approval and the amendment phase, the
16 document continues to change to adapt to conditions on the
17 ground or the economic conditions that might drive a
18 permit application. And we do our best to keep the permit
19 document current with DEQ, both to provide for the
20 operator and give DEQ an enforceable document to keep the
21 public safe.

22 Q. Has that dynamic nature been -- have you
23 observed that in all the permits you've worked on?

24 A. I have, yes.

25 Q. Would you say that the permit process involves

1 collaboration between the applicant and the Department of
2 Environmental Quality, Land Quality Division?

3 A. In my professional opinion it does not work
4 without that collaboration.

5 Q. Why do you think that is?

6 A. It's important along every step of the way to
7 engage the agency that's overseeing the application to
8 ensure that they get the document that they're looking for
9 and we prepare a document that protects the safety and
10 health of the residents of the state.

11 Q. Where does an engineer involved in permit
12 applications like these look for direction on what is
13 required for permit issuance?

14 A. Primarily the first step for engineers is the
15 DEQ guidance documents. Unlike other states, DEQ has done
16 an excellent job in the state of Wyoming preparing
17 documents that guide the operator in the preparation of a
18 permit application that is this big. It's not as simple
19 as filling out one-page form. And so to help operators
20 and add some uniformity to the process, they prepared
21 several guidance documents. Those guidance documents are
22 guidelines, they were not hard and fast rules. But
23 they're promulgated by the rules and regulations. So
24 what's in those documents takes away from the regulations
25 and adds some clarity for ease of preparation of the

1 document that you see before you today.

2 Q. Other than the guidance documents, where else
3 would an engineer like yourself look for direction on how
4 to get a permit?

5 A. We would also look at the state rules and
6 regulations.

7 Q. Anything else?

8 A. We look -- above that, would be the state
9 statute themselves, the law.

10 Q. Did you do all of those things as part of the
11 Brook Mine permit application?

12 A. I did, yes.

13 Q. How about the other permit applications you've
14 worked on?

15 A. Absolutely, yes.

16 Q. Okay. Let's move and talk a little bit about
17 highwall mining. It occurred to me from some of the
18 questions we heard over the few days that we didn't really
19 start with a good explanation of highwall mining. So I'd
20 like you to take a look at Powder River Basin Resource
21 Council Exhibit 84.

22 Now, do you recognize this document, Mr. Barron?
23 You know what, don't answer that. It doesn't really
24 matter. This is for demonstrative purposes. Let's look
25 at page 16. Okay?

1 A. Okay.

2 Q. Getting there. Okay. Let's blow that little
3 diagram up. That picture. Have you seen this figure
4 before?

5 A. I have seen that figure before.

6 Q. Okay. Now, first of all, what does this figure
7 represent?

8 A. This figure represents a cross-section of a
9 highwall miner that is mining a coal seam with overburden,
10 and you can see a launch vehicle on the left-hand side of
11 the picture.

12 Q. And to be clear, this is a figure in -- you
13 know, that's shown and is accredited to Caterpillar. Do
14 you see that?

15 A. I do see that, yes.

16 Q. Okay. Is this identical to the machine that
17 Brook will be using for the proposed Brook Mine?

18 A. It's similar, but it is not identical.

19 Q. Okay. So can you just briefly describe the
20 highwall mining process for the council. And if you need
21 to stand up, please go ahead.

22 A. So the highwall mining process starts with
23 you've heard it called a trench or a pit or a box cut
24 that exposes the coal seam. And then the highwall miner
25 pushes forward a machine with a rotating drum with teeth

1 on it. Think of a rolling pin with teeth that claw away
2 at the coal seam. And then in the ADDCAR system, it's a
3 set of conveyors. In this Caterpillar system there's a
4 tube with a screw in it that pulls the coal back to the
5 launch vehicle and then after it gets to its full extent,
6 it's retrieved. The machine moves down the pit and goes
7 back into the seam again.

8 Q. Just to be clear, Mr. Barron, I notice in this
9 figure -- I realize this is just demonstrative -- but we
10 can see trees and things behind the machine. You see
11 that?

12 A. Yes.

13 Q. Is that the situation you would expect during
14 operations at Brook Mine?

15 A. It is. The overburden above the highwall miner
16 is undisturbed. It stays the native ground, the native
17 topography with even the native vegetation.

18 Q. Okay. Now I'd like to look at a different
19 exhibit to help sort of flesh out the -- some of the
20 terminology we've heard throughout the hearing. Let's
21 look at DEQ Exhibit 12-121.

22 All right, Mr. Barron. Can you please explain
23 to the council what we're looking at here?

24 A. So this is a figure that's in the mine plan.
25 And as discussed before, the mine plan has some

1 generalities to describe to the reader just in general
2 what is going on and what something would look like. So
3 you saw a cross-section of the highwall miner, and then
4 this is looking at plan, you are facing right into the
5 open box cut. So we're in the box cut looking at the
6 highwall.

7 And this is describing just in general that the
8 drifts that have been -- they've been called that in this
9 hearing -- are spaced on somewhat regular intervals. And
10 between each drift is left a web, a supporting wall. Just
11 like in this room, we've got -- we're in the drift, and
12 we've got two walls that are the webs between them, and we
13 occupy this space.

14 And then it shows this larger web, which is
15 called a barrier pillar. And it describes that this
16 resides between a series of webs. Its purpose is not for
17 protection, but this figure is just showing the general
18 layout of what you would expect to see if you were looking
19 in the highwall.

20 Q. So, Mr. Barron, roughly how far below the
21 surface will these webs and pillars and drifts be for the
22 proposed Brook Mine?

23 A. They can be in tens of feet to hundreds of feet
24 below the ground. And you heard earlier how the coal is
25 tipped and it gets deeper as we move across the mine

1 permit area.

2 Q. By looking at this generalized schematic, can
3 you tell me how wide the barrier pillar will be in, say,
4 for example trench 1?

5 A. No.

6 Q. What about the coal web width? Can you tell me
7 that based on this schematic?

8 A. For trench 1, no, I can't tell you the exact
9 width of the pillar.

10 Q. So to put it another way, is this figure that we
11 see here an engineered drawing that the operator will use
12 to make its cuts into the coal seam exactly like this?

13 A. No, not at all.

14 Q. So why did you include this in the mine plan?

15 A. Well, it's important in a permit application,
16 when dealing with the regulatory body, and the public that
17 gets to view it, to give them a picture of what this does
18 kind of look like so they don't get lost in the words or
19 some other narrative. So we included this to add it to
20 the permit application.

21 Q. Let's talk a little bit about subsidence. Okay?

22 A. Okay.

23 Q. Have you read the objection letters in --
24 regarding the Brook Mine permit?

25 A. I have.

1 Q. Were there objections regarding subsidence?

2 A. Yes.

3 Q. What is your general understanding of the --
4 subsidence-related objections?

5 A. In general, that the mining operation would
6 cause subsidence in old mine works, and that the highwall
7 mining itself would generate subsidence on the land
8 surface, causing impacts to the surface and to the
9 underground area.

10 Q. Do you believe that the mine permit sufficiently
11 addresses these issues?

12 A. I do.

13 Q. Did DEQ accept your subsidence-related terms and
14 commitments entirely in the first round of comments and
15 responses?

16 A. In the first round, no, they did not.

17 Q. What about your baseline assessment of geology
18 in Appendix D5? Did they accept that entirely in Round 1?

19 A. No. They had comments on the Appendix D5.

20 Q. We heard Mr. Kristiansen go through one example
21 of a comment response. I'd like to show you another
22 example. Let's look at DEQ Exhibit Number 34-014. Do you
23 recognize this? I know I didn't show you the first page,
24 but do you know what we're looking at here, Mr. Barron?

25 A. We're looking at a compiled view of comments and

1 responses.

2 Q. Is this a document that you prepared?

3 A. Yes.

4 Q. And what was it based on?

5 A. It was based on several rounds of comments we
6 compiled into one document.

7 Q. Does it also include Brook's responses?

8 A. It -- I don't know if it includes responses,
9 though.

10 Q. Well, I'll show you in just a minute.

11 A. Okay.

12 Q. Let's look at Comment BJ Number 14. Okay?

13 A. Okay.

14 Q. It's a little tough because it spills over to
15 the next page, but do you see what Carri's just blown up?

16 A. I do sees that, yes.

17 Q. Just to set the stage, what is -- what part of
18 the permit file is Comment BJ 14 referring to?

19 A. It's a -- it's commented on Appendix D5. It's
20 in the geology section of the permit application.

21 Q. Okay. Now let's look at the very next page, DEQ
22 34-015. So first, Mr. Barron, how about now? Do you
23 understand -- do you know whether or not this exhibit
24 includes Brook's responses to the comments?

25 A. Appears to be, yes.

1 Q. Okay. So let's blow up the rest of Bj's Comment
2 14. We don't need to read this whole thing, but,
3 Mr. Barron, please take a look at that and can you just
4 summarize generally what -- what Comment 14 was about?

5 A. Comment 14 was about the level of sampling and
6 testing for strength parameters within the geologic area
7 of the permit application.

8 Q. Does that have anything to do with subsidence,
9 in your experience?

10 A. It does.

11 Q. And what did you think of this comment when you
12 received it?

13 A. After I received that comment, it was apparent
14 that we needed to address the comments and create a
15 mechanism to supply some additional data to DEQ.

16 Q. And what kind of additional data was -- or --
17 well, I guess, yeah, data -- was DEQ interested in based
18 on this comment?

19 A. They were interested in more specific strength
20 parameters tied to specific mine areas.

21 Q. Okay. Now let's take a quick look at Brook's
22 response. So what was your response to BJ 14 comment?

23 A. We updated the appropriate section in D5.

24 Q. Okay. What section is that exactly?

25 A. It is Section D5.3.3.2.

1 Q. Okay. Let's take a quick look at DEQ
2 Exhibit 5-017. So first, Mr. Barron, what is Appendix D5?

3 A. D5 deals with overburden and geology within the
4 permit area.

5 Q. Okay. We're just going to blow up the first
6 piece here just for a second. So is this the part of
7 Exhibit -- or rather Appendix D5 that you referred to in
8 your comment response?

9 A. It is.

10 Q. Okay. So let's turn to page DEQ 5-018.
11 Mr. Barron, would it help if we gave you -- that's just a
12 lot of exhibits to go back and forth. I think we'll --
13 are you okay with us still using the screen?

14 A. It works for me, yes.

15 Q. Okay. So let's blow up the first paragraph on
16 that page.

17 MR. SUTPHIN: And, actually -- Carri, I
18 apologize. Let's pull up the first two paragraphs on that
19 page.

20 Q. (BY MR. SUTPHIN) Mr. Barron, is this what
21 you would refer to as the narrative portion of the
22 Appendix D5?

23 A. Yes, it is.

24 Q. And can you just summarize -- I mean, you can
25 certainly take a look here, and so can the council -- but

1 can you just summarize this language in the narrative?

2 A. Yeah. This language discusses the sampling
3 efforts in the baseline, and also provides for a
4 commitment to supply the MSHA ground control plan to DEQ.

5 Q. And at the beginning of this it mentions -- and
6 I'm trying to find my place exactly. Maybe the third
7 sentence down. These samples will not represent all
8 conditions encountered by the continuous miner. Do you
9 see that?

10 A. Yes.

11 Q. Do you believe that statement is true?

12 A. Yes.

13 Q. So how do you know what you're going to do about
14 subsidence or whether subsidence is going to occur if you
15 don't know the conditions, interburden thickness,
16 overburden, et cetera, that you're going to encounter?

17 A. So we will study the exact areas. When we begin
18 mining in a specific highwall mining area and specifically
19 a panel that is shooting off of a highwall we will study
20 and get samples for that area and it will be designed
21 appropriately for the operation of the mine.

22 Q. This narrative mentions the MSHA ground control
23 plan. Do you see that?

24 A. I do see that, yes.

25 Q. What is the MSHA ground control plan?

1 A. The MSHA ground control plan is the document
2 that MSHA uses to verify the safety of the miners who are
3 operating in and around a highwall.

4 Q. Why did you mention it in this part of the
5 narrative?

6 A. For the underground component of the ground
7 control plan, we have to calculate to the satisfaction of
8 MSHA a factor of safety for the strength, the ability of
9 these pillars, the walls we will see in the room that hold
10 up the roof. And so the calculations necessary to provide
11 the information for MSHA are exactly the same data that
12 DEQ is looking for for each one of these panels.

13 Q. And to be clear, have you done those additional
14 sampling procedures yet?

15 A. We have not.

16 Q. Why not?

17 A. They're not necessary at this time.

18 Q. When will they be necessary?

19 A. At the time that we are going to bond and
20 receive hopefully a permit to mine application, we will
21 have addressed the area, TR-1, for instance, that we are
22 going to mine, and we will pull additional samples. That
23 will become part of the ground control plan. And we
24 cannot mine without that ground control plan in place,
25 submitting it both for MSHA review and to DEQ at that

1 time.

2 Q. To be fair, Brook -- has Brook Mine done any
3 strength testing within its mine permit boundaries?

4 A. We have.

5 Q. Okay. And did you test the strength of the coal
6 at all?

7 A. We did.

8 Q. How many samples of coal strength have been
9 done?

10 A. Two, I believe.

11 Q. Okay. And do you recall what the coal strength
12 findings were?

13 A. We had a strength, if I remember correctly,
14 about 1400 PSI.

15 Q. And I should probably be more precise,
16 especially since you are an engineer. What kind of
17 strength testing was done on the coal?

18 A. It's called an un -- unconfined compressive
19 strength test.

20 Q. Where would the members of the council look in
21 the permit file to see the results of those tests?

22 A. Those are found in Appendix D5. And I believe
23 it's Addendum D5.6.

24 Q. Did you do the unconfined strength testing thing
25 you just mentioned personally?

1 A. We did not do that at Western Water, no.

2 Q. Who did it?

3 A. We sent them to a lab to be tested.

4 Q. Does the MSHA ground control plan require an
5 accurate characterization of the roof materials?

6 A. It does.

7 Q. Does it require an accurate -- accurate
8 characterization of the floor materials?

9 A. It does.

10 Q. Does it require an accurate characterization of
11 the coal strength and characteristics?

12 A. It does as well.

13 Q. How do you know all that?

14 A. The program that MSHA -- we use is called ARMPS,
15 and the input parameters for that program are listed.

16 Q. Does MSHA require a compressive strength test
17 for -- or any of these other parameters -- for every panel
18 that will be mined with the highwall miner?

19 A. They do, yes.

20 Q. And I think we established this, but just to be
21 clear, when I say "a highwall mining panel," do you
22 know -- what does that mean to you?

23 A. So to me and to MSHA highwall mining panel is
24 when a box cut is open and then you can mine on either the
25 left or the right of the box cut, those are the panel.

1 Now sometimes it gets confused, but a panel is just the
2 area between the barrier pillars. But in this case, it's
3 the full length of a panel to be mined, some 1500, 2,000
4 feet in length.

5 Q. I want to turn now to the subsidence control
6 plan. Okay?

7 A. Okay.

8 Q. First of all, can you just explain to the
9 council what a subsidence control plan is?

10 A. That is the plan in the permit that addresses
11 subsidence. It talks about the parameters for subsidence
12 and it talks about how the mine will deal with subsidence.

13 Q. And who prepared the subsidence control plan
14 that's part of the permit file?

15 A. It was a company by the name of Cardno MMA.

16 Q. Why was Cardno MMA selected to prepare the
17 subsidence and control plan?

18 A. So Cardno and MMA were mergering. MMA is
19 Marshall Miller & Associates. They've since retracted and
20 that's who they are now. Marshall Miller, the founder of
21 the company, has done extensive work in this field, so I
22 chose that company to do this rather than our company.

23 Q. Where in the --

24 MR. SUTPHIN: You can zoom out, please,
25 Carri.

1 Q. (BY MR. SUTPHIN) Where in the permit file would
2 the council turn to find the subsidence control plan?

3 A. That's found within the Brook Mine mine plan.

4 Q. You might have said it, but does MMA have
5 experience with highwall mining subsidence control plans?

6 A. They've done the vast majority of highwall
7 mining in the East.

8 Q. I want to look at the next page of Addendum
9 MP-6. This is DEQ 12-322. And I'm interested, in
10 particular, in the last paragraph, before the review of
11 previous mining activity. And I realize that you did not
12 draft this, but have you reviewed this information,
13 Mr. Barron?

14 A. I have, yes.

15 Q. And what -- well, first of all, it's talking
16 about support pillars will be designed to have a width
17 equal to or exceeding the maximum extraction thickness
18 anticipated in the highwall mining hole based on the
19 mine's geologic model. Do you know what that means?

20 A. As a matter of fact, yes, I do.

21 Q. Can you explain it, please?

22 A. I can. So if the council will remember the
23 figure that we had up previously, that's talking about the
24 height of the coal seam, and it's talking about the
25 variable being equal to that height, the width between

1 them.

2 Q. So this goes on to talk about Occupational
3 Safety and Health's -- NIOSH ARMPS-HWM. What does that
4 mean?

5 A. That's the program that's used to calculate the
6 factors of safety. It's the one that Bj discussed and was
7 trained on in his class. And it's also the program that
8 Cardno MMA now is familiar with.

9 Q. So just to simplify, how does the pillar
10 width -- how do you figure out, going from that general
11 schematic, to an actual plan to create a mine panel, say,
12 in TR-1?

13 A. So in TR-1 after you have taken a new sample or
14 sample in that area and sent the materials off for
15 testing, both the floor, the roof and the coal, those
16 parameters are entered into this program. It's an
17 industry standard. And based off the width and depth that
18 you're going to go into a coal seam, part of what judges
19 that too is the overburden thickness amount of -- well,
20 Jay Gilbertz' computer as it sat on top of the roof and
21 then the paper as it fell, that goes into this model so
22 that the paper doesn't fall. And it's designed with a
23 factor of safety and the standard is 1.3 to assure to the
24 best of their ability that we have a stable, nonsubsiding
25 mine plan for a specific area with specific parameters at

1 that area.

2 Q. What are -- what's the status of Brook's efforts
3 to get an approved MSHA ground control plan?

4 A. That document is being prepared.

5 Q. Has it been submitted?

6 A. It has not.

7 Q. Do you know when it will be?

8 A. I don't know exactly the time it will be
9 submitted right now.

10 Q. Have you had any contact with anyone at MSHA
11 regarding what's required for the ground control plan?

12 A. Yes, I have.

13 Q. Who's that?

14 A. A gentleman by the name of Ron Gehrke. He is
15 their expert in that field and served in that capacity for
16 several years.

17 Q. And just to be clear, what -- like who was
18 Mr. Gehrke? Who does he work for? Where is he
19 responsible for, if you know?

20 A. He is in Denver. He works for MSHA in District
21 9, I believe it is.

22 Q. Is that the district that -- that the Brook Mine
23 will be located in?

24 A. Yes. That's the district that we're covering.

25 Q. Did Mr. Gehrke provide any guidance or

1 information to help with the preparation of the ground
2 control plan?

3 A. Absolutely he did. He provided several
4 documents.

5 Q. I want to show you Exhibit Brook 10d. Do you
6 recognize that document, Mr. Barron?

7 A. That was one supplied by Mr. Gehrke.

8 Q. How would you describe this document, just
9 generally?

10 A. It's the -- it's the District 9. It's titled on
11 the top District 9 Highwall Ground Control Plan Check
12 Sheet. It's what needs to be provided to MSHA for a
13 highwall miner.

14 Q. Would you -- or I suppose could you direct the
15 council to any relevant portions of this document as they
16 pertain to subsidence?

17 A. About -- I don't know.

18 Q. We'll give you a pointer here real quick.

19 MR. GILBERTZ: There's one right in front
20 of him. One on the table.

21 MR. SUTPHIN: Oh, there is one on the
22 table.

23 THE WITNESS: I got the red dot, though.
24 That's cooler. Higher tech. My kids would be -- will be
25 excited.

1 MR. GILBERTZ: Mine works without
2 batteries.

3 THE WITNESS: Can't have everything.

4 Q. (BY MR. SUTPHIN) Go ahead, Mr. Barron.

5 A. So in this document, this area right here has a
6 list of things that need to be supplied. I don't know if
7 you can bring that up easy for at least my eyeballs.

8 So we need to supply the slope of ground to be
9 mined, maximum highwall height, pit width, description of
10 methods and equipment, and it goes on to some other
11 caveats with the highwall must be --

12 THE REPORTER: I'm sorry.

13 A. -- width of the equipment to be used.

14 THE REPORTER: Can you say that over.

15 THE WITNESS: There are a few caveats on
16 the bottom. Width of highwall benches must be two and a
17 half times the width of the equipment to be used. So it
18 already sets out some of the design parameters for the
19 highwall miner.

20 Q. (BY MR. SUTPHIN) Let's take a quick look at the
21 bottom of this page and just zoom in on this last box.

22 What is your understanding of this portion of
23 the checklist, Mr. Barron?

24 A. This mentions that factor of safety that I
25 previously mentioned, using the program ARMPS. We have an

1 overall factor of safety of 1.3.

2 Q. Okay. Let's move to next page for just a
3 moment.

4 MR. SUTPHIN: Can you zoom in on the top
5 one, please, Carri.

6 Q. (BY MR. SUTPHIN) This appears to be a
7 continuation of that comment that we just mentioned. Can
8 you just summarize what this piece of the checklist
9 requires?

10 A. Yes. That piece is providing MSHA a map of the
11 design and the components we used in the calculation of
12 that factor of safety.

13 MS. ANDERSON: I think at this point I'm
14 going to raise the objection that several council members
15 have raised before. This isn't in the permit application.

16 THE WITNESS: The commitment for this is in
17 the --

18 CHAIRMAN BAGLEY: Wait. Wait.

19 MR. SUTPHIN: Mr. Barron, hold on just a
20 minute.

21 Mr. Chairman, may I respond?

22 CHAIRMAN BAGLEY: Yes.

23 MR. SUTPHIN: This witness has already
24 established that this is a checklist for the MSHA ground
25 control plan that is very explicitly a part of the mine

1 permit file and a commitment that Brook has made within
2 that mine permit file. This goes directly to the
3 objections about subsidence and is not only relevant but
4 already included in the permit file.

5 CHAIRMAN BAGLEY: So this is in the permit.

6 MR. SUTPHIN: To be clear, Mr. Chairman,
7 this document is not in the file -- in the permit file.
8 What is in the permit file are very explicit commitments
9 that an MSHA ground control plan will be provided before
10 any mining takes place, and these are the requirements of
11 an MSHA ground control plan.

12 CHAIRMAN BAGLEY: Yeah. You can go ahead
13 and continue.

14 MR. SUTPHIN: Thank you, Mr. Chairman.

15 Q. (BY MR. SUTPHIN) Let's -- and, frankly, we're
16 not going to spend much more time on this, because I think
17 we've established the point that needed to be done.

18 But let's look at the top of page 3, Mr. Barron.
19 Were you -- did you hear the testimony or have you heard
20 the objections regarding the potential impacts that the
21 Brook Mine operation may cause on existing underground
22 mines?

23 A. I have, yes.

24 Q. Okay.

25 MR. SUTPHIN: Zoom in, please, on the very

1 top.

2 Q. (BY MR. SUTPHIN) Can you please summarize for
3 the council what this portion of the MSHA ground control
4 plan checklist requires.

5 A. It requires a 50-foot barrier needs to be
6 maintained between the end of the hole and existing
7 previous works.

8 Q. Is that something that you will do as part of
9 your MSHA ground control plan?

10 A. It's something we have to do.

11 Q. Mr. Barron, have you reviewed the report by
12 Dr. Jerry Marino that was submitted by the Powder River
13 Basin Resource Council?

14 A. I have.

15 Q. Did you also sit in on Mr. -- no, not Mr.

16 MS. ANDERSON: Doctor.

17 MR. SUTPHIN: Doctor. My apologies.

18 Q. (BY MR. SUTPHIN) Dr. Marino's deposition?

19 A. I did, yes.

20 Q. Do you believe that Dr. Marino's suggestions for
21 additional geotechnical study and analysis are
22 appropriate?

23 A. Yes.

24 Q. Why do you think that is that his opinions or
25 suggestions are appropriate?

1 A. They are appropriate. And as Bj has mentioned
2 and was pointed out earlier, Dr. Marino's work was noted
3 in the class that Bj attended.

4 Q. So if you agree with his suggestions and with
5 his opinion, or at least of the type of geotechnical study
6 that needs to be done, why haven't you done it yet?

7 A. We haven't done it yet, but it is a commitment
8 as part of the permit application in the ground control
9 plan that those will be done.

10 Q. You heard some testimony, I think it was from
11 Mr. Kristiansen, about the technology involved in the
12 highwall mining machine. Do you remember that?

13 A. I do.

14 Q. And I think you used the term directionally
15 intelligent, if I remember correctly. Was your
16 understanding of the technology used with the highwall
17 mining machine?

18 A. The highwall mining machine, and it's being
19 improved even today, has a lot of capabilities. Bj
20 mentioned that it has a gamma probe to sense whether it's
21 in the coal or not by the way the probe reads. There's
22 also cameras at the front. And then there is a surveying
23 component. So the miner itself knows exactly how much
24 coal it has extracted, and then those come into the
25 reports that get filed with the agency. It also knows

1 where it is on its azimuth, either with GPS or some other
2 mechanism.

3 Q. What does the Brook Mine permit say about
4 subsidence monitoring?

5 A. We commit to monitoring firstly for the
6 immediate six months after we have mined an area. But
7 that monitoring actually continues until final bond
8 release.

9 Q. And what does the permit application say about
10 subsidence with remediation?

11 A. If we find subsidence, we fix it.

12 MS. ANDERSON: At this point, before more
13 questions are asked about the subsidence control plan, I'd
14 just like to lodge a general objection that Mr. Barron
15 didn't actually prepare this document, and I would
16 appreciate a little bit more foundation laid before he
17 answers his questions about his personal knowledge about
18 the document itself.

19 CHAIRMAN BAGLEY: Any comment?

20 MR. SUTPHIN: No comment, Mr. Chairman.

21 CHAIRMAN BAGLEY: What I'd like to have
22 you do, then, is -- we have the report. It was written by
23 a subcontractor, who has, I think, been demonstrated -- or
24 Mr. Barron said is capable of doing this. But we can focus
25 on the things that are in the permit, which -- I mean, the

1 monitoring of subsidence, I believe, is something that
2 would have been in the document Mr. Barron wrote or was
3 involved with, and that's the specific details of Carno --
4 or Cardno.

5 MR. SUTPHIN: Yes. Absolutely. And I
6 appreciate that, Mr. Chairman. I was done talking about
7 the subsidence control plan, so I think we'll move on.

8 CHAIRMAN BAGLEY: Thank you.

9 Q. (BY MR. SUTPHIN) What is Brook Mine's
10 expectation about the coal removal ratios?

11 A. That's listed in the permit. It's 45 percent to
12 60 percent, I believe.

13 Q. Why doesn't Brook Mine anticipate any greater
14 coal extraction?

15 A. That would be inherently dangerous and probably
16 cause subsidence.

17 Q. When you're mining into a coal seam -- you
18 know what, let's go back to that diagram that was Exhibit
19 DEQ 12-121. Might be easier to have you explain this with
20 a diagram instead of just trying to talk about it.

21 So I realize this is a general schematic and you
22 don't know how tall the coal seam is, but roughly just --
23 what would you expect the height of a coal seam to be in
24 the Brook Mine area?

25 A. Around 12 feet thick.

1 Q. Okay. So if we assume for a second that we're
2 looking at a 12-foot-tall seam of coal, how much of that
3 12 feet is the highwall miner going to remove in one of
4 those drifts or entry spans?

5 A. Usually in the 12 feet, we would remove
6 something like 10 feet of coal.

7 Q. Why wouldn't you remove the entire 12 feet of
8 coal?

9 A. The top portion of the coal and the bottom
10 portion of coal are not equivalent to the chemical makeup
11 of the central portion of the coal, so it's advantageous
12 to remove the better coal.

13 Q. Before we leave this diagram again, do you
14 recall that Dr. Marino made some -- rendered some opinions
15 about Brook Mine's projected extraction ratios?

16 A. He did. He projected that we were extracting
17 75 percent.

18 Q. And what is your reaction to that opinion?

19 A. We are not extracting that much coal.

20 Q. And why not?

21 A. First, we clearly state in the permit
22 application that it will be between 45 and 60 percent.
23 The other mechanism, it was evident in Marino's deposition
24 that he was using this figure to establish how much our
25 extraction was by using the worst-case scenario on this

1 figure, and this figure is not intended for that purpose.

2 Q. All right. Mr. Barron, let's move to a
3 discussion about everyone's favorite topic, alluvial
4 valley floors. Okay?

5 CHAIRMAN BAGLEY: Mr. Sutphin, before we do
6 that, I'd like to ask you just a couple questions. About
7 how much longer do you expect direct to occur for
8 Mr. Barron?

9 MR. SUTPHIN: I anticipate one more hour of
10 direct examination, Dr. Bagley.

11 CHAIRMAN BAGLEY: All right. Let us take a
12 10-minute break and then we'll come back and conclude
13 direct to finish off today.

14 MR. SUTPHIN: Very good. Thank you.

15 CHAIRMAN BAGLEY: So 10-minute recess.

16 (Hearing proceedings recessed

17 5:53 p.m. to 6:04 p.m.)

18 CHAIRMAN BAGLEY: All right. We're back in
19 session. Please, continue.

20 Q. (BY MR. SUTPHIN) Okay. Mr. Barron, can you
21 please summarize your understanding of the objections
22 relating to alluvial valley floors.

23 A. In general, the objections deal with either
24 harming or disrupting groundwater flows to alluvial valley
25 floors.

1 Q. And do you -- what is your opinion about how the
2 Brook permit file addresses alluvial valley floors?

3 A. We have an entire binder dedicated to all of the
4 components of an alluvial valley floor. Appendix D11.

5 Q. You heard Mr. Kristiansen explain generally the
6 process for alluvial valley floor determinations, right?

7 A. I did, yes.

8 Q. Did you have anything that you would add to his
9 testimony or explanation?

10 A. No. I think he did a complete job.

11 Q. What limitations or restrictions are placed on a
12 mine regarding AVF, just generally?

13 A. So one of the determinations on alluvial valley
14 floor is its significance to farming. And in general, you
15 cannot harm or mine through an alluvial valley floor that
16 has a significance to farming.

17 Q. To your knowledge, are there any AVF's in and
18 around the Brook permit area that are significant to
19 farming?

20 A. None within the permit boundary.

21 Q. If the AVF is not significant, are there still
22 limitations about what a mine can do?

23 A. So if you mine through an alluvial valley floor
24 that is not significant to farming, it has some function.
25 Say, for instance, to convey flows. You can mine through

1 that alluvial valley floor, but you would have to
2 reconstruct it so that it could perform its function.

3 Q. Does the Brook Mine propose mining through any
4 known designated AVFs?

5 A. It does not.

6 Q. Okay. How do you know that these are the
7 limitations on a mine with respect to AVF?

8 A. Guideline 9 sets out those parameters.

9 Q. Have you also reviewed the rules and regs?

10 A. I have, yes.

11 Q. But you're not a lawyer, are you, Mr. Barron?

12 A. I am not a lawyer.

13 Q. So why would you look at the rules and the regs
14 and the guidelines?

15 A. Because it's my job.

16 Q. What do you mean by that?

17 A. In order for me to protect the public health and
18 safety, I have to review the laws, the rules, the
19 regulations to make a call whether or not I'm building a
20 document that's compliant. I couldn't do my job without
21 them.

22 Q. Were there rounds of comments and responses
23 regarding AVF?

24 A. Yes.

25 Q. Do you know how many comments pertain to AVF?

1 A. You know, in general I would say somewhere
2 around 50, I suppose, if I was to guess.

3 Q. To your knowledge, were all of those comments
4 resolved to the satisfaction of DEQ?

5 A. They were.

6 Q. What does the permit say about the expected
7 impacts on AVF?

8 A. Permit outlays that we will have minimal impact
9 to AVFs.

10 Q. And other than Appendix D11, where I think you
11 said the baseline information is found, where would the
12 council look to identify what the mine or what the permit
13 says about AVF?

14 A. In the -- in the case of mining in and around an
15 AVF, there are sections in the mine plan that outline
16 that. And also the reclamation plan has sections on
17 dealing with reclaiming in and near AVF.

18 Q. So we just pulled up Exhibit DEQ 12-090. Is
19 this the part of the mine plan you were just referring to
20 regarding AVF?

21 A. Yes.

22 Q. Okay. Do you know how many pages this AVF
23 portion goes on for?

24 A. Several.

25 Q. Okay. We're not going to read them all. Is

1 there anywhere else that the council might look to see
2 what Brook is proposing regarding AVF?

3 A. Outside of the mine plan and the reclamation
4 plan, Appendix D11, there would also be references in
5 Appendix D6 dealing with hydrology.

6 Q. You referenced the reclamation plan and what
7 it might say about AVF. We're going to pull up Exhibit
8 DEQ 13-073. Mr. Barron, is this part of the reclamation
9 plan?

10 A. Yes.

11 Q. And is this the part you were -- you were
12 referring to about AVF?

13 A. Yes.

14 Q. Again, we don't want to read this in its
15 entirety but generally speaking, what does the reclamation
16 plan say about reclaiming or restoring AVF?

17 A. So in the reclamation plan we commit to -- and
18 if we -- we have the reclamation plan set up for all
19 occurrences that might happen within the mine site, but in
20 this case it would speak to restoring the hydrologic
21 function or restoring flows to any AVF that we have
22 separate flows that materially damage an AVF.

23 Q. Do you believe that Brook Mine will be capable
24 of restoring any AVF that it might impact?

25 A. Yes.

1 Q. How can you -- I mean, why? Based on what?

2 A. I've worked with other mines, and we have
3 restored AVFs in the practice of our business.

4 Q. And Mr. Kristiansen mentioned an example of
5 restoring AVF functionality at the Rawhide Mine. Do you
6 remember hearing that?

7 A. I do, yes.

8 Q. Do you know who designed the project to restore
9 the AVF at the Rawhide Mine?

10 A. Western Water Consultants.

11 Q. And that's your company?

12 A. It is.

13 Q. Were you personally involved in that?

14 A. I was not.

15 Q. How do you know about it, then?

16 A. I spoke to my supervisor. He told me about the
17 project. We've also referenced that project in with
18 others, and I've been involved in that.

19 Q. Does Western Water Consulting have any other
20 experience restoring AVF functionality after it's been
21 affected by mining?

22 A. We have. We've done work for Antelope Mine as
23 well.

24 Q. What did that -- first of all, did you do that
25 work or design personally?

1 A. I did not.

2 Q. But are you familiar with it?

3 A. I am, yes.

4 Q. So just generally what happened and what was
5 done?

6 A. It was a reconstructive effort to restore the
7 hydrologic function of the AVF, which was primarily to
8 convey underflow. So it meant replacing stream-laid
9 deposits in a fashion that the AVF could continue to
10 function in the way it had in the environment.

11 Q. To your knowledge, was that restoration work
12 approved by DEQ, Land Quality Division?

13 A. It was, yes.

14 Q. All right. Let's move on to blasting. What is
15 your general understanding of the blasting-related
16 objections?

17 A. Most of the blasting-related objections have to
18 do with vibrations and potential damage to structures,
19 interruption of recreational activities and potential harm
20 to wells.

21 Q. You heard Mr. Emme testify just a little while
22 ago about blasting, right?

23 A. I did, yes.

24 Q. And did you have anything you'd like to add to
25 Mr. Emme's testimony?

1 A. No. I think Mr. Emme did a fine job.

2 Q. Can you just briefly describe some of the
3 commitments that Brook Mine has in its blasting plan to
4 protect structures in and around the Brook Mine?

5 A. As Mr. Emme pointed out, there is a commitment
6 in the mine plan for a pre-blast survey. Any resident
7 within a half mile of the permit boundary can request a
8 pre-blast survey, and that includes examination of the
9 structures and wells to ascertain their pre-mining
10 condition. And then if some damage should occur in the
11 future, we would have a case for potential causation and
12 we could repair those damages.

13 Q. Where would the council turn to find the
14 commitments and the information regarding blasting in your
15 permit file?

16 A. That would be in the mine plan volume.

17 Q. Do you know off the top of your head where in
18 the mine plan volume?

19 A. Not off the top of my head, but I could point it
20 out in relatively short order. That would be in Section
21 MP.14.

22 Q. And where is that found in the mine plan? And
23 what I mean is what DEQ exhibit number is it?

24 A. It is DEQ Exhibit 12.

25 Q. And what page?

1 A. The document page --

2 Q. No. I'm going to interrupt you, Mr. Barron.

3 Does that one not say a DEQ- number on it?

4 A. It does. I'm in the table of contents.

5 Q. Oh.

6 A. That won't help you. But I am almost there.

7 MP.14 begins on DEQ 12-073.

8 Q. And where does the blasting related -- where
9 does MP.14 end?

10 A. It ends on DEQ 12-082.

11 Q. What is Brook Mine committed to do to make sure
12 that residents of the area are aware of your anticipated
13 blasting activities?

14 A. We need to publicize our blasting activities.

15 Q. What does that mean?

16 A. Brook Mine needs to put in a circulation, a
17 public record, our blasting schedule.

18 Q. Mr. Barron, I don't know. Maybe you're nervous
19 or stiff or something. I don't know. A circulation of
20 what?

21 A. A newspaper. A newspaper circulation in the
22 area.

23 Q. Okay. Thank you. And, yeah, I mean, let's keep
24 it simple, please.

25 Other than putting notice in the newspaper, what

1 would Brook do to make sure residents in the area are
2 aware of proposed blasting activities?

3 A. The mine area will have signage around the mine
4 site to indicate that blasting activities are happening.
5 We also put road guards or roadblocks in the area of
6 blasting. There's an audible tone, a siren, that will be
7 heard.

8 Q. Will you be sending any direct mail to any of
9 the residents around the mine permit area?

10 A. Mr. Emme pointed out we will be sending a direct
11 mailer to everyone within a half mile.

12 Q. Let's talk about bonding for a moment. Okay,
13 Mr. Barron?

14 A. Very good.

15 Q. Again, you heard Mr. Emme testify about bonding,
16 right?

17 A. I did.

18 Q. Did you have any disagreements with what
19 Mr. Emme said?

20 A. I did not.

21 Q. Did you prepare the Brook Mine reclamation bond
22 estimate?

23 A. I did.

24 Q. And why did you do that?

25 A. It was an effort to convey to DEQ what our plan

1 of disturbances were for the first year.

2 Q. Before you heard Mr. Emme testify today, did you
3 know that in his opinion your proposed estimate was high?

4 A. I did not until today.

5 Q. How did that make you feel to hear that?

6 A. Made me feel like I did a good job.

7 Q. Are you proud of the work you did on the Brook
8 Mine permit application?

9 A. Absolutely.

10 Q. Why?

11 A. This is a large volume of work. It took
12 uncountable man-hours to complete. And the council has
13 heard DEQ testify, it's a good body of work. It describes
14 a lot, and there's a lot of detail in it.

15 Q. How many man-hours has Western Water Consulting
16 put into preparing the Brook Mine application file?

17 A. Thousands.

18 Q. How do you know that? Sort of shut that off.
19 How do you know?

20 A. Well, for me personally I've been working on
21 this project since May of 2013 and it has consumed the
22 bulk of my time -- at least 80 percent -- and we continue
23 to work today. So four -- four years of my time and
24 80 percent, 2,000 hours a year, it's --

25 Q. Is your permit application file perfect, in your

1 mind?

2 A. No.

3 Q. Why not?

4 A. I don't know that anyone could say that any
5 permit application is perfect. However, being a dynamic
6 document, we have opportunities along several times during
7 the application process to improve it and make it better,
8 both either by our initiation or from comment from DEQ or
9 the public.

10 Q. Having committed all that time and investing
11 yourself into the permit file, are you afraid that you're
12 so invested that maybe you'd want this permit approved at
13 all costs?

14 A. No. Absolutely not.

15 Q. Do you have any concerns with some of the permit
16 conditions that have been discussed at this hearing?

17 A. No. If conditions need to be placed on the
18 permits to make it a better document, I would welcome
19 them.

20 Q. Before the bonding, you heard some testimony
21 that Brook Mine has not posted a bond for the first year
22 of projected disturbance, right?

23 A. That's correct.

24 Q. Is Brook Mine prepared to post that bond?

25 A. They are prepared to post the bond, yes.

1 Q. Do you know how that bond -- like what mechanism
2 will be employed to make sure that the reclamation bond
3 requirement is satisfied?

4 A. It will be a financial instrument of sorts.

5 Q. Okay. Do you know what self-bonding is?

6 A. I do.

7 Q. And will Brook Mine be self-bonding for its
8 reclamation bond?

9 A. Not to my knowledge.

10 Q. Okay. Let's talk about underground coal fires
11 now. Okay?

12 Did you see any objections pertaining to
13 underground coal fires?

14 A. I did see objections.

15 Q. And what was the nature of those objections,
16 generally?

17 A. In essence, the Brook Mine was either not aware
18 of underground coal fires or didn't know how to deal with
19 that.

20 Q. And was your opinion of the Brook Mine -- or
21 rather how the Brook Mine permit addresses potential
22 underground coal fires?

23 A. We have a fire control plan within the mine
24 plan.

25 Q. Do you think that underground coal fires will be

1 a problem in this operation?

2 A. In the permit area there are no known coal
3 fires, but they certainly could be encountered, and the
4 fire control plan can address those issues.

5 Q. So where in the permit would the council need to
6 look to examine your fire control plan?

7 A. They will look -- it's an addendum to the mine
8 plan, Addendum MP.5.

9 Q. Okay. And just so you don't have to turn to it,
10 take a look at the screen, Mr. Barron. Is this Addendum
11 MP.5?

12 A. Yes.

13 Q. Okay. And what does the fire control plan say
14 about what will happen if you encounter a coal fire?

15 A. I don't exactly remember the specifics of what
16 it says. But fires, in general, as they're discovered, we
17 will extinguish those fires with the best technology we
18 have available to us to address those fires.

19 Q. Do you believe it's possible to extinguish an
20 underground coal fire if you were to encounter one in the
21 Brook Mine operation?

22 A. Yes.

23 Q. What's that based on?

24 A. One, mines commonly encounter underground coal
25 fires and deal with them as part of their operational

1 plan. Those have commonly been extinguished. Abandoned
2 Mine Lands also deals with underground coal fires and part
3 of the practice they extinguish those underground coal
4 fires. So the techniques used in either of these
5 instances would be employed by Brook Mine.

6 Q. Did Department of Environmental Quality, Land
7 Quality Division express any concerns or comments
8 regarding underground coal fires?

9 A. No, they did not.

10 Q. Would you say that this is a common issue?

11 A. Not super common in a coal mine, but, I mean,
12 it's an occurrence that coal mines expect. One of the
13 mechanisms for coal to catch fire is the presence of
14 moisture and oxygen. So coal naturally has some moisture
15 in it, and can be exposed to oxygen. So certainly the
16 pieces to start a fire are there.

17 Q. Let's turn really quickly to DEQ 12-316. This
18 is still in your fire control plan, right?

19 A. It is.

20 Q. So I'm looking at Section MP-5.4.2. Okay?

21 A. Yes.

22 Q. So what does this say about coal fires?

23 A. It specifically says a coal fire in the pit will
24 be extinguished by excavating the burning or smoldering
25 coal and then spreading, contacting or burying it as

1 necessary.

2 Q. This doesn't say -- or let me -- I better not
3 ask too many leading questions.

4 Does this say exactly where you expect coal
5 fires will be encountered?

6 A. No, it does not.

7 Q. Does it say exactly how the operations crew will
8 react to the coal fire?

9 A. It does not.

10 Q. Does it say what kind of equipment will be used
11 to deal with the coal fire?

12 A. It does not.

13 Q. Okay. So why not?

14 A. Just like Doug Emme described, we want to allow
15 for the best practices to deal with the coal fire. We
16 have a section that says we will deal with those, and it
17 gives us the broadest latitude to employ the best
18 technologies that we have to deal with those fires.

19 Q. Mr. Barron, what is, in your mind, a
20 performance-based regulation?

21 A. A performance-based regulation is one that is
22 written to achieve an outcome, but does not dictate how
23 you get to that outcome.

24 Q. Does that performance-based regulation approach
25 apply, in your mind, to the Brook Mine permit?

1 A. Absolutely, it does.

2 Q. So why?

3 A. DEQ regulations are performance-based
4 regulations. For instance, this table. You could say as
5 a regulator that a table shall be this wide, this deep and
6 supported by two legs. But a performance-based regulation
7 will say this table needs to be supported and an operator
8 could choose how to support this table best to carry out
9 the function of holding these documents. DEQ writes its
10 regulations that way so that the operator has the broadest
11 latitude to achieve something, but still needs to be
12 restricted to a specific outcome.

13 Q. Let's talk about groundwater briefly. Again,
14 you were here to listen to the testimony of Dr. Kuchanur,
15 right?

16 A. I was.

17 Q. Did you disagree with anything Dr. Kuchanur had
18 to say about ground --

19 A. No, I did not.

20 Q. Ooh. Ooh.

21 A. Sorry.

22 Q. Did you disagree with anything Dr. Kuchanur had
23 to say relating to groundwater?

24 A. I did not.

25 Q. Would you add anything to Dr. Kuchanur's

1 testimony?

2 A. No, I would not.

3 Q. Why not?

4 A. I think it's evident Mr. Kuchanur's --
5 Dr. Kuchanur's expertise in the field. He gave great
6 comments to the permit application that I believe improved
7 the application and addressed several issues. In the end,
8 I think this -- the state and the public can feel
9 confident in both the state's ability, professional
10 engineers that worked on the groundwater control plan,
11 that it's a -- the document is sound.

12 Q. What are the commitments that Brook Mine has
13 made in the permit file regarding possible water well
14 impairment?

15 A. Chief among those is the replacement of both
16 quality and quantity of water if any well should be
17 materially damaged.

18 Q. And you heard the testimony about distinction
19 between an adjudicated well and a permitted well, right?

20 A. I did, yes.

21 Q. And you heard the testimony about the condition
22 that -- that Brook Mine can't restrict its protections to
23 only adjudicated wells?

24 A. I did.

25 Q. And what is Brook Mine's reaction to that

1 condition?

2 A. Well, it's accepted.

3 Q. Why wasn't it that way in the first place?

4 A. It was that way in the first place. We decided
5 both the statutes, and as a commitment in the mine plan,
6 and then added the term "adjudicated well," which
7 introduced a great deal of confusion, which is apparent by
8 the public comment. Dr. Muthu pointed that out earlier in
9 his testimony. And I think by adding that condition in
10 the state decision document clarifies that. So rest
11 assured, it's going to be permitted wells that are
12 replaced.

13 Q. So, again, let's assume hypothetically that a
14 well -- well, first of all, is there a limit to how far
15 away from the permit area you can be before these well
16 replacement or restoration terms are triggered?

17 A. It's generally the half-mile buffer within the
18 permit application. However, if someone outside of that
19 buffer senses that the mine has done something to one of
20 their water wells, they certainly can raise the concern
21 and be evaluated on its base. If causation is found, we
22 can deal with it.

23 Q. And I don't want to put words in your mouth,
24 but -- well, let me just ask it again. What happens if
25 there is water well impairment caused by the Brook Mine?

1 What does Brook Mine have to do, in your opinion?

2 A. Brook Mine needs to replace both quality and
3 quantity.

4 Q. And is that -- sorry. Is that part of the
5 permit commitments?

6 A. It is.

7 Q. Who determines if you've replaced the quality
8 and quantity of an impaired well sufficiently?

9 A. DEQ has oversight.

10 Q. How long does this replacement have to last?

11 A. The replacement would need to satisfy the
12 landowner for the duration of the well's life. So if it
13 meant drilling a new well, a new well would be drilled.

14 Q. What if a new well can't be drilled?

15 A. Then a new supply of water would need to be
16 granted to the owner. I mean, the commitment is in the
17 permit to do replacement of quality and quantity. We
18 can't shirk that responsibility.

19 Q. What are Brook Mine's predictions regarding the
20 potential effect on the hydrologic balance in and around
21 the area of the proposed Brook Mine?

22 A. You will have a minimal effect on hydrologic
23 balance within the Brook Mine.

24 Q. Let's talk a little bit about TR-1 area. Okay?
25 How would you describe the geology of the TR-1

1 area?

2 A. TR-1 area is comprised of mine backfill from
3 mining operations that occurred to extract the Monarch
4 coal seam. Below that you have the overburden layer
5 Dr. Kuchanur talked about. And then Carney coal seam and
6 Masters coal seam below that.

7 Q. You heard some discussion about on -- on various
8 parts of the testimony about some alleged uncertainties
9 about what the hydrogeology in that area might be like.
10 Can you recall those?

11 A. I do, yes.

12 Q. Okay. Would you characterize this area, the
13 geology and hydrogeology, as unknown?

14 A. No, I wouldn't characterize it as unknown.

15 Q. Why not?

16 A. It's in the area of historic Big Horn -- well,
17 the active Big Horn Coal mine. They've been mining there
18 since prelaw. So it is a known area.

19 Q. You heard the testimony that there are no
20 groundwater monitoring wells in the vicinity of the
21 proposed TR-1 pit, right?

22 A. Right. I did, yes.

23 Q. Okay. Is that true? Are there no groundwater
24 monitoring wells in that area?

25 A. There are no groundwater monitoring wells in the

1 saturated backfill.

2 Q. Are there wells that can give us information
3 about the area that aren't in the saturated backfill?

4 A. Yes.

5 Q. And just generally where are those?

6 A. They're both north and south of that pit.

7 Q. And is that the information that we saw in the
8 cross-section that Dr. Kuchanur was using?

9 A. Yes the cross-section found in Appendix D5
10 showed both of those.

11 Q. Did Brook Mine attempt to acquire data from
12 groundwater monitoring in the area of the TR-1 pit?

13 A. We did, yes.

14 Q. And why -- so if you tried, why didn't you get
15 any?

16 A. Big Horn Coal called the Sheridan County Sheriff
17 and had us escorted from the site.

18 Q. Now you say "us." Who do you mean?

19 A. I had a water well driller, subcontractor,
20 working on the site. He was escorted from the site. Then
21 I went down with Mr. Niles Veal, and spoke with the
22 Sheridan County Sheriff and he asked us to leave and we
23 obeyed him.

24 Q. Did you tell DEQ that you were trying to get
25 water monitoring information from that area and were

1 blocked?

2 A. Yes.

3 Q. And what was the response that DEQ provided?

4 A. They allowed that the monitoring that had
5 happened to date was sufficient, and we continued without
6 adding any additional wells in that area.

7 Q. Briefly on the subject of air quality. Are you
8 aware of objections pertaining to the air quality?

9 A. Yes.

10 Q. And who is responsible for issuance of an air
11 quality permit?

12 A. Wyoming Department of Environmental Quality,
13 their Air Quality Division.

14 Q. And is that different from the Land Quality
15 Division?

16 A. It is.

17 Q. Has an Air Quality permit been granted?

18 A. It has.

19 Q. And is there a copy of it in this mine permit
20 file?

21 A. No, there is not.

22 Q. Why not?

23 A. It's referenced in the permit documents, but
24 it's not a requirement that it be in this permit document.

25 Q. How will Brook Mine handle agreements with, for

1 example, Sheridan County regarding any impact that the
2 Brook Mine may have on county roads?

3 A. If we are going to have an impact to a county
4 road, we will -- and we started discussions with the
5 county already to make them aware we will have some
6 impacts at some time. We will enter into a Memorandum of
7 Understanding with them and those documents will become
8 part of the adjudication file in the permit application.

9 Q. But is there any information in the permit file
10 now about agreements you have with the county about county
11 roads?

12 A. No, there is not.

13 Q. Why not?

14 A. There is no impending need to engage the county
15 because we are not planning at any time right now to move
16 any of the roads.

17 Q. But I guess maybe I'm -- I was speaking more
18 broadly. I don't mean about just moving county roads. Do
19 you have to have discussions with Sheridan County about
20 using county roads?

21 A. No.

22 MR. SUTPHIN: Okay. Mr. Barron, we're
23 moving a little faster than I anticipated, which is always
24 good news, but it also makes me nervous that I may have
25 missed something. Although I suppose in fairness, the

1 council will get an opportunity to ask questions of you.

2 Mr. Chairman, if you'll indulge me for just a
3 moment, I'll consult with my colleagues and make sure that
4 I haven't missed anything obvious.

5 CHAIRMAN BAGLEY: That would be fine.
6 We're certainly happy you've been moving quickly. That's
7 great.

8 MR. SUTPHIN: Thanks.

9 (Cell phone rings.)

10 MS. ANDERSON: For the record, that was my
11 client.

12 MS. MORRISON: Sorry.

13 MS. ANDERSON: That's fine.

14 Q. (BY MR. SUTPHIN) Okay. Mr. Barron, to your
15 understanding, has DEQ, Land Quality Division, deemed the
16 Brook Mine permit application technically adequate?

17 A. They have.

18 Q. And to your knowledge, has that determination
19 changed in any way in response to the objections that have
20 been raised by objectioners?

21 A. It has not.

22 Q. I think I already asked you this, but just to
23 make sure. Are you proud of the work that you and your
24 team did on the Brook Mine permit application?

25 A. I am, yes.

1 Q. Is there anything that you would change in the
2 permit application as it exists today?

3 A. At this point, no.

4 Q. Are you confident in the quality of the work
5 that your subconsultants performed in assisting on the
6 Brook Mine permit application?

7 A. I am.

8 MR. SUTPHIN: Mr. Chairman, I have no
9 further questions of this witness at this time.

10 CHAIRMAN BAGLEY: Thank you very much.

11 So we will recess until 8:30 tomorrow morning,
12 when we will start cross-examination. We are recessed.

13 (Hearing proceedings recessed

14 6:40 p.m., May 24, 2017.)

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C E R T I F I C A T E

I, KATHY J. KENDRICK, a Registered Professional
Reporter, do hereby certify that I reported by machine
shorthand the foregoing proceedings contained herein,
constituting a full, true and correct transcript.

Dated this 22nd day of June, 2017.


KATHY J. KENDRICK
Registered Professional Reporter



From: Jim Ruby
To: [Isaac Sutphin](#); [Jeffrey S. Pope \(JSPope@hollandhart.com\)](mailto:JSPope@hollandhart.com); [Lynne Boomgaarden](#); [Jay Gilbertz](#); [Shannon Anderson](#); [andrew kuhlmann](#); [James LaRock](#); [Thomas Sansonetti](#)
Subject: Brook Mine Transcript
Date: Monday, June 19, 2017 9:09:43 AM

Dear Counsel:

Volume I and II of the Final hearing have been completed by the Court Reporter.

Have a great week.

Jim

From: Wyoming Reporting Services, Inc.
To: "Jim Ruby"; csvec@hollandhart.com; sanderson@powderriverbasin.org; lboomgaarden@crowleyfleck.com; jwacker@crowleyfleck.com; cgregeresen@crowleyfleck.com; andrew.kuhlmann@wyo.gov; "Jessica Curless"
Subject: Brook Mine, LLC - E-Transcript File Delivery
Date: Monday, June 19, 2017 9:00:05 AM
Attachments: [Brook Mine, LLC.ptx](#)
[052317 EQC brook mine vol II.pdf](#)

Please find attached Vol. II of the Brook Mine Hearing taken May 23, 2017.

Thank you,

Melissa Borbely
Administrative Assistant
Wyoming Reporting Services, Inc.
307-635-4424

<http://info.legalsolutions.thomsonreuters.com/software/ebundle/viewer/default.aspx>

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1 BEFORE THE ENVIRONMENTAL QUALITY COUNCIL

2 STATE OF WYOMING

3 -----

4 IN RE BROOK MINE APPLICATION Docket No. 17-4802

5 -----

6

7 TRANSCRIPT OF HEARING PROCEEDINGS

8 VOLUME II

9

10 PURSUANT TO NOTICE duly given to all parties
11 in interest, this matter reconvened for hearing on the
12 23rd day of May, 2017, at the approximate hour of
13 9:02 a.m., at the Sheridan College, Thorne-Rider Campus
14 Center, Room TRCC 008, 3059 Coffeen Avenue, Sheridan,
15 Wyoming, before the Wyoming Environmental Quality Council,
16 with Chairman David Bagley, presiding, and Council Member
17 Meghan Lally, Council Member Megan Degenfelder, Council
18 Member Tim Flitner, Council Member Nick Agopian and
19 Council Member Deb Baumer in attendance.

20 Mr. Ryan Schelhaas, Wyoming Attorney General's
21 Office, Attorney for the Council; Mr. Jim Ruby, Executive
22 Director to the Council; Mr. Joe Girardin, Business Office
23 Coordinator, were also in attendance.

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1 P R O C E E D I N G S

2 (Hearing proceedings reconvened

3 9:02 a.m., May 23, 2017.)

4 CHAIRMAN BAGLEY: Good morning. It is
5 9 a.m. -- 9:02, May 23, 2017. I am Dr. David Bagley, the
6 hearing officer in Docket 17-4802 in regard to Brook Mine,
7 LLC.

8 Present today for the council are Tim Flitner,
9 Meghan Lally, Megan Degenfelder, Nick Agopian and
10 Deb Baumer. Councilman Fairservis has recused himself due
11 to a conflict.

12 The parties present today are -- you know what?
13 I'm going to let the folks introduce themselves. I'll name
14 who your party and you can let me know your names, since I
15 always miss somebody.

16 So on behalf of Brook Mine, LLC are?

17 MR. POPE: Jeff Pope, Isaac Sutphin and
18 Tom Sansonetti.

19 CHAIRMAN BAGLEY: Thank you.

20 On behalf of DEQ are?

21 MR. KUHLMANN: Andrew Kuhlmann and James
22 LaRock.

23 CHAIRMAN BAGLEY: Thank you.

24 On behalf of Powder River Basin Resource Council.

25 MS. ANDERSON: Hi. Shannon Anderson.

1 CHAIRMAN BAGLEY: On behalf Big Horn Coal.

2 MS. BOOMGAARDEN: Good morning. Lynn

3 Boomgaarden and Clay Gregersen.

4 CHAIRMAN BAGLEY: Thank you.

5 On behalf of the Fishers.

6 MR. GILBERTZ: Jay Gilbertz from Yonkee &

7 Toner.

8 CHAIRMAN BAGLEY: Thank you.

9 Also present for the council are Jim Ruby,
10 executive officer; and Joe Girardin, counsel business
11 coordinator; and Ryan Schelhaas from the Attorney General's
12 Office.

13 This hearing is being held at Sheridan College,
14 Room TRCC 008, in the Thorne-Rider Campus Center,
15 3059 Coffeen Avenue, Sheridan, Wyoming. There is a court
16 reporter present.

17 Before we continue with the witness from
18 yesterday, I would like to get the exhibits in this matter
19 introduced and any objections on the record, and then I'll
20 make a decision on those and then we can move forward.

21 So I would like to start with Brook Mine.
22 Mr. Pope, please identify the party and number of what
23 exhibits you object to and all your objections. The
24 grounds have been listed, and you can be very brief on that
25 so we can move forward.

1 MR. POPE: Thank you, Dr. Bagley.

2 In terms of the Department of Environmental
3 Quality's exhibits, we have no objection to any of those
4 exhibits. In terms of the Powder River Basin Resource
5 Council, to be efficient I'll try to group as I go along.
6 We've objected to Exhibit Number 1, which is their
7 objection letter, on the basis of hearsay. Understanding
8 that hearsay is a rarely used ground in administrative
9 hearings for excluding evidence, we think this one is
10 important because it speaks to the fundamental fairness of
11 this process.

12 We've learned through discovery that the people
13 who have prepared this objection letter are Shannon
14 Anderson and Jill Morrison, and as well as a gentleman by
15 the name of Stuart Levit. None of those people will
16 testify before the council. We will not have the
17 opportunity to cross-examine them and learn whether or not
18 the allegations in there are truthful, credible and
19 probative, which is the standard in administrative
20 proceedings for hearsay.

21 Likewise, discovery in this matter, we've had the
22 opportunity to depose Mr. Levit and discover that in many
23 instances he didn't look at the law. He didn't look at the
24 regulations and didn't read relevant portions of the permit
25 application. We should have the ability to explore the

1 veracity of those allegations, but he's not going to
2 testify. And, therefore, we don't think it's fair. We
3 think that the arbitrary and capricious standard would
4 suggest that our rights would be prejudiced if the
5 objection letter was allowed in.

6 For -- and I guess I should mention as well, it
7 begs the question why we're here. If we are simply going
8 to allow objections letters and not have anyone testify,
9 council doesn't need us here. The council could have
10 simply received the letters, could have received the permit
11 application and gone on its merry way to make a decision.
12 We're here so I can see the witnesses, see the truthfulness
13 or credibility of their statements and make a
14 determination. Allowing this letter in would not allow the
15 council to do that.

16 We also object to PRBRC Exhibits 2 through 10,
17 which are individual objection letters filed by various --
18 various folks here in the community. We object to them on
19 a similar basis, but there is an additional ground here
20 too. None of these individuals requested a contested case
21 before this council. And, therefore, they're not parties.
22 So we think based on how this council ruled several months
23 ago, they -- they have had the opportunity to make their
24 objections, but they should not be allowed under the
25 auspices of the PRBRC to shoehorn in their objections. And

1 again, many of these people are not going to testify, so we
2 don't have the opportunity to cross-examine them.

3 The analogy here I think for the council is that
4 if this were a criminal case and you were accused of a
5 crime and someone said we have a letter from victim who
6 said you did it, we're not going to allow you to talk to
7 that convict, call the police officer who investigated the
8 case, our system wouldn't deem that fair. It's because the
9 fundamental process right is our opportunity to look at
10 someone on the witness stand and ask them questions.

11 We also object to PRBRC Exhibits 12 through 14
12 and 17, which are expert reports. Similar basis. Those
13 experts are going to testify. That should be the basis on
14 which this council judges their testimony. So it should be
15 kept out.

16 We object to Exhibit -- PRBRC Exhibits 25 through
17 27 on relevance grounds. Those are slideshows and news
18 articles that have little, if anything, to do with this
19 case. They are concerning other topics, such as the iPark
20 or industrial manufacturing, which is not relevant to the
21 adequacy -- technical adequacy of Brook's permit
22 application.

23 We also object to Exhibits 38 through 45, all on
24 the same basis. These are documents about the Abandoned
25 Mine Lands Program in Wyoming. Again, not relevant to

1 Brook's permit application.

2 We object to Exhibit 47. Same reason. This is a
3 1980 USGS paper, has nothing to do with Brook's permit
4 application.

5 We object to PRBRC Exhibit 63. This is a letter
6 from Mr. Tony Wendtland to Ms. Joan Tellez concerning
7 statements made at a Sheridan County Commissioners hearing.
8 It has nothing to do with Brook's permit application and
9 the technical adequacy of that.

10 We object to Exhibit 64. This is a Frahm Office
11 of Surface Mining Bond Calculation Handbook. Has nothing
12 to do with this hearing. It has no relevance because the
13 bond calculations in Wyoming are governed by DEQ
14 regulations, not the Office of Surface Mining.

15 Similar objections to PRBRC Exhibits 68 and 69.
16 Those are Office of Surface Mining documents. Not relevant
17 to Brook's permit application.

18 We object to Exhibit 72. This is a presentation
19 on advanced carbon products. It's not relevant to the
20 technical adequacy of Brook's permit application. We also
21 object to Exhibits 86 through 88. Same reasons you've
22 heard before, these are Abandoned Mine Land documents.
23 They aren't relevant to the technical adequacy of Brook's
24 permit application.

25 Finally, we object to PRBRC Exhibit 90. This is

1 a letter from the Tongue River Water Users Association
2 objecting to Brook's permit. It is dated May 17, 2017. It
3 was an objection letter filed months after the objection
4 deadline passed. And it was created on the same day that
5 exhibits were due in this matter. We do not have the
6 opportunity to cross-examine anyone from the Tongue River
7 Water Users Association. We don't have -- did not have the
8 opportunity to do discovery and learn about the veracity of
9 these allegations. So for all of the reasons that I
10 discussed in the previous objection letters, we object on
11 that basis.

12 That is it for the PRBRC exhibits. In terms of
13 the Fishers' exhibits, this should go a little bit faster.
14 We object to Fisher Exhibit 8 through 11 on relevance
15 ground. These are news articles about blasting and
16 Abandoned Mine Land work in other areas in other mines.
17 They're not relevant to the technical adequacy of Brook's
18 permit application. We also think they are unduly
19 prejudicial. They invite this council to draw an inference
20 that bad stuff has happened somewhere else, therefore, it
21 will happen here. That is a logical fallacy and no
22 evidence supports that claim.

23 We object to Fisher Exhibits 13 and 14. Same
24 reason. They are judgments in two civil matters wholly
25 unrelated to this case. And they, again, invite the

1 council to draw a prejudicial inference that because bad
2 things happen somewhere else, bad things will happen here.

3 And, lastly, we -- for the Fishers' exhibits. We
4 object to Fisher Exhibit 26. This is the Fishers'
5 objection letter. Similar reason here. They should come
6 up to the stand, testify about that. There is no need to
7 include that in this case.

8 Big Horn Coal exhibits. We object to Exhibit
9 Number 3, which is their objection letter. Similar basis.
10 But, again, here we have another issue where someone who
11 will not testify at the hearing drafted portions of this
12 letter. Jason Todd, who was a disclosed expert in this
13 matter, we learned through depositions of Mr. Sweeney, he
14 prepared text that was lifted and put directly into the
15 objection letter. He's not going to be here to testify.
16 He was -- we were told that he was no longer going to be
17 used by Big Horn Coal, and, therefore, we don't have the
18 ability to explore the veracity of his allegations. And
19 Mr. Sweeney has testified under oath at his deposition that
20 he will not be providing any testimony to support
21 Mr. Todd's assertions. So, again, we do not have the
22 fundamental opportunity to talk about those issues.

23 We also object to Exhibit -- BHC Exhibit 6, which
24 is permit provisions for the Buckskin and Cordero Rojo
25 Mines on relevance grounds. It does not matter what those

1 particular mines did. I understand the inference they're
2 going to try and draw, but it is not a relevant inference
3 to the facts of this case.

4 Lastly, we object to BHC Exhibit 9. This is the
5 expert report of Mr. Gerlach. He is going to be here to
6 testify. That should be the statements. Otherwise, again,
7 it begs the question of why we're here. They can simply
8 submit those reports, no one testifies and council can go
9 on its way.

10 That concludes our exhibit objections. Thank
11 you, Mr. Hearing Officer.

12 CHAIRMAN BAGLEY: All right. Thank you.

13 Mr. Kuhlmann, any --

14 MR. KUHLMANN: Thank you, Mr. Chairman.

15 Mr. LaRock will address our positions.

16 CHAIRMAN BAGLEY: All right. Thank you.

17 MR. LAROCK: Mr. Hearing Officer, because
18 we view this hearing as opportunity for objectors to
19 provide DEQ with more information to help us, we don't plan
20 to object any of the exhibits identified by any of the
21 objectors or the witnesses' testimony. As long as that
22 information is at least baseline relevant to this process,
23 we don't plan to object.

24 CHAIRMAN BAGLEY: All right. Thank you.

25 Ms. Anderson.

1 MS. ANDERSON: Do you just want my
2 objections or do you want my response to objections?

3 MR. RUBY: Just objections.

4 CHAIRMAN BAGLEY: Just objections.

5 MS. ANDERSON: Okay.

6 CHAIRMAN BAGLEY: Yeah.

7 MS. ANDERSON: Thank you, Dr. Bagley.

8 At this point we would object to Brook 6, which
9 is a voluminous document, I don't even think provided to
10 you yet, as council members, not printed for this hearing,
11 nor -- you know, I think we've reviewed some of it during
12 discovery, but, you know, it's over 10,000 pages. So we
13 would object to that.

14 We do stipulate to anything that's part of the
15 official correspondence file for this hearing, which has
16 already provided an exhibit from DEQ, but beyond that, we
17 believe the parties, as we did, should go through and
18 identify the specific emails and documents that are
19 relevant to their cases.

20 We also object to the use of outdated law.
21 Critically there's an exhibit from Brook that's a 2010
22 version of the Environmental Quality Act. There is
23 obviously a 2017 version out there. And we do believe that
24 there's no need for an exhibit at all on the law itself,
25 similar to the regulations. We believe those regulations

1 are the regulations and you can pull them off of the
2 applicable websites and look at them, and they don't need
3 to be an exhibit for evidence at this hearing.

4 So those are the exhibit objections that we have
5 of Brook. And we have no objections to DEQ nor do we have
6 any objections to any of the other parties.

7 CHAIRMAN BAGLEY: All right. Thank you.

8 MR. RUBY: Mr. Chair, can you find out what
9 exhibit numbers those were?

10 CHAIRMAN BAGLEY: One of them was Brook 6.
11 What are the other two objections?

12 MS. ANDERSON: So the regulations,
13 Dr. Bagley, are Brook 5.

14 CHAIRMAN BAGLEY: Okay.

15 MS. ANDERSON: And it's sub (a) through
16 (i). And then the -- I'm trying to find the Environmental
17 Quality Act one. It might be --

18 MR. GILBERTZ: 3.

19 MS. ANDERSON: 3. Okay. Thank you.

20 MR. GILBERTZ: 4 is also law.

21 MS. ANDERSON: Thank you.

22 So Brook 3 and 4.

23 MR. POPE: Mr. Bagley, I think I can save
24 the council some time on this, not to get us bogged down.
25 We'll withdraw the law exhibits. We included those for the

1 council's convenience, but if it's going to cause an issue,
2 there's no need. We will withdraw those.

3 MR. GILBERTZ: So is that 3, 4 and 5,
4 Mr. Pope?

5 MR. POPE: Yes. We'll withdraw all the
6 statute -- the statute exhibit, as well as the regulation
7 exhibit. And those are broken down in (a) through (i).

8 CHAIRMAN BAGLEY: So we will withdraw --
9 Brook Exhibits 3, 4 and 5 have been withdrawn?

10 MR. POPE: Yes.

11 CHAIRMAN BAGLEY: Thank you.

12 All right. Mr. Gilbertz.

13 MR. GILBERTZ: Thank you. I can be pretty
14 brief. Understanding that this is administrative in
15 nature, and so a lot of the objections I'm used to dealing
16 with are sort of out the window.

17 In relation to DEQ, no objections to their
18 exhibits.

19 Based on the withdrawal in relation to Brook, I
20 would echo the objection to Brook 6, Sections A and B,
21 which I understand to be about 13,000 pages of
22 miscellaneous correspondence, emails, internal/external,
23 mainly for the purpose of saying that I cannot conceive
24 that all 13,000 pages are relevant to the issues we'll be
25 dealing with today.

1 In relation to Big Horn -- or to -- yeah, to Big
2 Horn Coal, no objections.

3 And to Powder River Resource Basin Council [sic],
4 no objections.

5 CHAIRMAN BAGLEY: Thank you.

6 Ms. Boomgaarden.

7 MS. BOOMGAARDEN: Thank you, Dr. Bagley.

8 Big Horn Coal has no objections to DEQ exhibits,
9 no objections to PRBRC exhibits, no objections to Fisher
10 exhibits, and with the withdrawal of Brook Exhibits 3, 4
11 and 5, would just like to put on the record a similar
12 objection with regard to Brook 6.

13 We are happy to stipulate to anything that is a
14 portion of the official DEQ record that is available to the
15 public. Without the ability to review all 13,000 pages of
16 that, if they would -- if Brook would like to certify or
17 somehow otherwise demonstrate for the commission, if
18 they're going to put those on, that these are part of the
19 DEQ report and would be publicly available, we'd be happy
20 to stipulate at that time, but would like to reserve the
21 right at -- as to those exhibits or that exhibit to raise
22 objections at hearing.

23 CHAIRMAN BAGLEY: All right. Okay. Thank
24 you, everybody.

25 And I have -- I've looked at the list of the

1 exhibits. Obviously the exhibits don't become available to
2 us to see until people present them, but I have looked at
3 the list, and I must admit some of the lists are very long.
4 And, frankly, I don't want to see all those exhibits during
5 this hearing, but I am going to receive all of them, with
6 your objections noted. And if the -- the -- with the
7 exception being that if Brook 6 is brought forward, I will
8 entertain specific objections at that time, because I don't
9 want to do 13,000 pages either, so...

10 But at this point I'll entertain the specific
11 objections for that exhibit at this time -- at that time.

12 And so, Jim, anything else I need to do on that?

13 (DEQ Exhibit Nos. 17-33 and
14 35-36; Brook Mine Exhibit Nos. 1,
15 2, 7-13; Big Horn Coal Exhibit
16 Nos. 1-19; PRBRC Exhibit
17 Nos. 1-90; Fisher Exhibit
18 Nos. 1-26 received in evidence.)

19 MR. RUBY: No. But if you want, if you
20 just want to give me a couple minutes so I can enable them
21 all, or you can just go ahead and proceed.

22 CHAIRMAN BAGLEY: We can go ahead, because
23 the witness we're on is going to be --

24 MR. RUBY: Yeah.

25 CHAIRMAN BAGLEY: All right. Thank you.

1 So, you know, just as a reminder to everybody, we
2 are only here for relatively short time. I mean, it's just
3 this week. So as I looked at that list last night of
4 exhibits, I started to wonder if we'd be here until
5 midnight every night going through these, so I'd like to
6 encourage everybody to keep moving right along. Council
7 members will -- are able to examine, think about the
8 relevance of things as we go. So let's kind of try to keep
9 moving this along.

10 So yesterday we were in the middle of testimony
11 by Mr. Kristiansen. And if we are ready to resume.

12 Mr. Kuhlmann, please.

13 MR. KUHLMANN: Thank you, Mr. Chairman.
14 Andrew Kuhlmann, Wyoming Attorney General's Office. We'll
15 be continuing our testimony of Mr. Bj Kristiansen.

16 BJARNE KRISTIANSEN,
17 called as a witness on behalf of the DEQ, having been
18 previously sworn, testified further as follows:

19 DIRECT EXAMINATION (CONTINUED)

20 Q. (BY MR. KUHLMANN) Mr. Kristiansen, yesterday I
21 believe we stopped while we were talking about the mine
22 plan, which is Exhibit DEQ 12. Do you have that in front
23 of you?

24 A. I do.

25 Q. Can you turn to what is -- can you tell us what

1 the mine plan says regarding how coal will be transported
2 in and from the Brook Mine?

3 A. Yes, I can. Coal will be transported in and
4 from the Brook Mine in large semi trailer trucks with
5 tandem trailers in behind the semi truck, over-the-road
6 vehicles that will be loaded in the pit and then
7 transported up -- up the ramp to the haul road system and
8 then leave the mine property.

9 Q. Are those trucks the same kind of trucks that
10 are used in, say, the -- the North Antelope Rochelle Mine
11 to haul coal around that mine?

12 A. No. These are significantly different vehicles.

13 Q. Does the mine plan discuss what types of roads
14 will be used at the Brook Mine?

15 A. It does. There are several classifications of
16 roads to be used in the Brook Mine.

17 Q. Can you explain what those classifications are?

18 A. Certainly. Primarily haul roads, which are the
19 large-scale roads utilized for the haulage and general
20 mine utilization by pickups and service vehicles. There
21 are access roads that we get from point A to point B in
22 and around the mine for smaller vehicles, pickups and
23 service vehicles. And there are two-track roads that will
24 be around the perimeter of the mine to access things like
25 monitor wells and other monitoring sites out in the

1 periphery of the mine.

2 Q. Does the mine plan indicate where the different
3 types of roads will be located?

4 A. There are indications of where the haul road
5 system and access road system will be.

6 Q. Do you -- the roads that Brook Mine will use, do
7 they have to be designed to meet DEQ performance
8 standards?

9 A. They do.

10 Q. Can you explain some of the process for review
11 and what's required for those designs?

12 A. Primarily we examine the nature of the road and
13 the use of the road that will be used for both short term
14 and long term. And then we require certain specifications
15 be put into place in the mine plan to cover those roads.
16 The primary roads that are to be designed by engineers are
17 the haul roads. They must undergo a series of evaluations
18 by a professional engineer, designed by a professional
19 engineer and certified by a professional engineer before
20 they can be used. Any haul road that does not go through
21 that process cannot be used by the operator.

22 Q. Does DEQ -- oh. Excuse me.

23 After the roads are designed and constructed,
24 does Brook Mine need to maintain those roads to make sure
25 they're in condition to comply with conformance standards?

1 A. They do.

2 Q. Is Brook responsible for reclaiming the roads it
3 uses as haul roads?

4 A. They will be.

5 Q. And when will that reclamation occur?

6 A. Reclamation will occur over different periods of
7 time depending on how the mine sequence is occurring. And
8 reclamation may not necessarily be due to mining
9 conditions, but could be due to other kinds of conditions
10 we find in and around the mine. Topographic conditions,
11 water conditions if there are rains, other kinds of
12 conditions that come and go over time may need to be
13 accounted for.

14 Q. Will the coal -- under the -- the Brook Mine
15 permit currently, will the coal be transported by rail?

16 A. It will not.

17 Q. Was there any previous version of the permit
18 application that included a rail transportation?

19 A. There was.

20 Q. Can you describe what that -- what that plan was
21 at the time?

22 A. I can. In the original version of the permit
23 application, the railroad loop was built into the mine
24 plan system to utilize the train tracks and the trains
25 available on the BNSF to haul the coal to whatever --

1 wherever the -- the customers were and whoever wanted the
2 coal could get to it via rain -- or via train and vehicle
3 haul.

4 One of the things we found in that particular
5 instance was that there were considerations that
6 essentially disqualified that train track for various and
7 sundry reasons. There were difficulties involved in that
8 railroad loop, it was very confined area and very
9 difficult to work in. And so we gave Brook Mine the
10 option to reassess that particular railroad loop, which
11 they did in subsequent mine plans.

12 Q. Do you recall around what round of comments that
13 was changed?

14 A. Second round of comments. Or I shouldn't say
15 that. The first round that came out of us, responses that
16 came back were the ones that addressed that
17 satisfactorily.

18 Q. Okay. Does the permit application include any
19 agreements for road use with any governmental agencies
20 or -- or governmental entities?

21 A. There are no agreements that we know of at this
22 time. But that's not something we enforce. And it's
23 something they will have to address. We cannot enforce
24 it. So that's as far as we go in the permit -- in the
25 permit application.

1 Q. So does a permit application -- is it required
2 that a permit application include agreements with, say,
3 the County or Department of Transportation?

4 A. It does for various and sundry groups they'll be
5 dealing with, particularly the county and state, both
6 county roads and highways.

7 Q. Is that required to be in this permit
8 application?

9 A. The narrative in the mine plan essentially
10 determines who those individuals are, what those
11 corporations are that are going to be utilized. And the
12 generalities are in the mine plan. The specifics of the
13 agreements they have are not necessarily part of the mine
14 plan.

15 Q. Moving to a slightly different topic. Does the
16 permit -- or permit application describe how the mine will
17 control air pollution?

18 A. It does.

19 Q. Can you explain a little bit more about what the
20 mine -- what the permit application says about that issue?

21 A. Primarily what they will do is they'll control
22 the dust and all the access areas and in the pits by
23 applying water, utilizing water trucks, to haul roads in
24 those areas. There will also be water utilized in the
25 crushing devices in some cases, depending upon the

1 dustiness of the coal in those particular areas, because
2 dustiness can change over distance in coal beds. And
3 we'll monitor those circumstances and keep that dust down
4 to a minimum. They'll reduce all hauling and loading in
5 the pit to the bottom of the pit in the ramp, and utilize
6 the surface above the pit only for transportation of coal
7 product to the access area that leaves the mine site.

8 Q. Does the DEQ Land Quality Division enforce air
9 pollution -- air pollution procedures that you just
10 discussed?

11 A. They do not.

12 Q. Who does?

13 A. That would be the Air Quality Division of
14 Wyoming DEQ.

15 Q. Does the Brook Mine need to obtain an air
16 quality permit from the Air Quality Division of DEQ?

17 A. They will need to obtain that permit.

18 Q. Do you know if they have?

19 A. Best of my knowledge, they have obtained that
20 permit.

21 Q. Does DEQ have any -- does DEQ Land Quality
22 Division have the ability to enforce the air quality
23 permit?

24 A. No, we cannot.

25 Q. Moving to another topic. Still within the mine

1 plan.

2 Does the Brook Mine permit area overlap any
3 other mine active planning permit areas?

4 A. Yes, it does. It overlaps two other mining
5 areas currently permitted by LQD.

6 Q. Can you explain what those are?

7 A. One of those, the Big Horn Coal mine, as we
8 noted in the past. There are overlapping permit
9 boundaries in the southeast part of the permit application
10 area. There's also the Taylor Quarry that has a permit to
11 mine scoria just north of the interstate. And that permit
12 also overlaps the Brook permit application boundary.

13 Q. Is it common for coal mines to have overlapping
14 permit areas?

15 A. It isn't uncommon. It's something that does
16 occur within the Powder River Basin, in 14 cases that I
17 know of exactly where there is overlapping mine permits.
18 They both are responsible for specific areas.

19 Q. Are how does DEQ regulate the mines in the lands
20 in the overlapping permit areas?

21 A. We regulate those lands just as if the mine were
22 a stand-alone unit, as if those overlapped lands did not
23 have another mine permit on them. So we ascertain that
24 full responsibility for reclamation liability is -- is due
25 to both parties involved. So we treat those as individual

1 parties so there's always reclamation performance bond in
2 place on the overlap area.

3 Q. Does the permit application address what you've
4 just discussed about bonding in the overlap area?

5 A. It does.

6 Q. Where does it discuss it?

7 A. It discusses that in the part of the mine plan
8 that discusses the bond occurrences, it discusses the
9 nature of the bonds that occur in those overlapping areas,
10 as well as the nature of the overlapping resources that
11 also exist in those as far as buildings and haul roads and
12 other things.

13 Q. Does any other part of the permit application
14 address the bonding and the overlapping area?

15 A. Reclamation also addresses some of those topics.

16 Q. Just for clarity of the record, did you mean to
17 say the reclamation plan?

18 A. Yes. Excuse me. The reclamation plan.

19 Q. And we will talk about that here in a little
20 bit.

21 Before we move to some of the addendums of the
22 mine plan, were there any items that you testified about
23 yesterday that you might want to clarify today?

24 A. Could you be more specific?

25 Q. Were there any items that you testified about

1 yesterday that you might want to clarify a little bit
2 today?

3 A. One of those items was probably the AVF
4 determination that I made. It was a circumstance that it
5 took us quite a while to do some of the science that
6 needed to be done in that particular area. And during
7 that process, Brook Mine had submitted their AVF
8 discussion in the permit application. We found that their
9 discussion in that part of the permit application was
10 technically adequate. And so at that point in time
11 discussion -- that narrative in that area was essentially
12 put to bed. I subsequently found that there was a small
13 AVF in the northwest corner of the permit area that
14 included that in some of my memorandums we looked at
15 yesterday.

16 Q. And which -- so you were just discussing the AVF
17 determinations near Slater Creek; is that correct?

18 A. Exactly.

19 Q. I think you testified yesterday that those AVF
20 areas would not be affected by mining operations.

21 A. They will not.

22 Q. Is that correct?

23 Can you explain why they won't be affected?

24 A. Two different aspects of that. One is they do
25 not directly affect the surface of the area. They

1 maintain a certain distance -- specific distance away from
2 the active portions of Slater Creek that appear to be
3 sufficient to ensure that the creek itself will not be
4 impacted by surface activity.

5 There's also another boundary in there that
6 normally we don't see. And that's the boundary of the
7 extension of the mining panels possibly beneath Slater
8 Creek. What they've done is they've terminated those
9 panel underground approximately 100 feet away from where
10 Slater Creek is inscribed into the landscape. So the
11 final panel exists 100 feet away from wherever Slater
12 Creek is, though it is at depth below that, what is
13 determined was we wanted to ensure that if subsidence
14 occurs which is not planned, that Slater Creek will not be
15 impacted by that.

16 Q. When you mentioned a hundred feet away from
17 Slater Creek, does that imply in total over Slater Creek,
18 or does that apply on either side of Slater Creek?

19 A. That would be the center of Slater Creek. Right
20 down the middle of the stream.

21 Q. Okay. Yesterday you also testified about the
22 oversight in DEQ of the Brook Mine permit application's
23 processing, correct?

24 A. Correct.

25 Q. I think you mentioned Mr. Alan Edwards was

1 involved in that oversight?

2 A. Yes, he was.

3 Q. Was there anyone else that was involved in
4 overseeing the decisions made on the Brook Mine permit
5 application?

6 A. We utilized a chain of communication, a chain of
7 command in the process. If I at any point in time
8 encounter questionable information or materials that I
9 didn't understand the statutes or the rules and
10 regulations on, I went to my direct supervisor,
11 Mr. Mark Rogaczewski, who is the District 3 supervisor.
12 And I would go to Mark and try to determine what rules and
13 regulations are statutory and compliances had to be met.

14 If both of us came to a stopping point where we
15 could not answer the question, we then contacted our
16 superiors in Cheyenne and asked them their opinions of the
17 legalities of some of these narratives or inside the mine
18 plan, reclamation plan, and the rest of it.

19 We also worked with the Attorney General's
20 Office to help us with those, particularly with the legal
21 aspects in the adjudication files. So we had that process
22 in place, system of communication, so we could make
23 determinations on the Brook Mining permit application.

24 Q. Thank you.

25 Were those the items that you wanted to correct

1 from yesterday?

2 A. They were.

3 Q. Go ahead and let's take a look at a couple of
4 addendums to the mine plan. Could you please turn to
5 DEQ 12-314.

6 A. I'm there.

7 Q. Okay. Can you tell us what this part of the
8 mine plan is?

9 A. This is the fire control and prevention plan for
10 the mine plan operation.

11 Q. Is there an addendum number for that?

12 A. There is an addendum number for this. It is
13 called Addendum MP-5-3.

14 Q. Can you tell us what the purpose of the fire
15 control plan is?

16 A. This plan establishes a system and puts
17 mitigation system in place in case the mining operation or
18 the other operations of the mine encounter fires, both
19 either the surface or subsurface.

20 Q. Does the fire control plan include procedures
21 for how the mine might respond to fires that occur in
22 coal?

23 A. It does in a narrative degree.

24 Q. Can you explain what you mean by that?

25 A. There are what we consider to be general

1 mitigation aspects that are put into place, narrative
2 communication aspects that essentially wait for a
3 circumstance to occur, and then different specifics can be
4 put into place. Each of these areas are site specific,
5 and so some of the mitigating factors have to be decided
6 at that point in time.

7 So what they've done is they've given us a
8 general discussion of the process that they're going to
9 use with the caveat, the understanding, that there would
10 be specific instances and specific bits and pieces of
11 information that would be put together to properly treat
12 the mine fire.

13 Q. Is there a regulatory entity that would enforce
14 the actual response to a particular fire?

15 A. Yes. That would be the Mine Safety and Health
16 Administration, MSHA. They are the ones that oversee the
17 ground control program for fire, other safety related
18 items in the Brook Mine.

19 Q. So if a fire occurred, what would MSHA's role be
20 in -- in regulating the permit?

21 A. Their enforcement capacity would be to ensure
22 that the fire was put out and did not have a chance of
23 coming back again in that particular area.

24 Q. Does the DEQ Land Quality Division enforce
25 making sure that mine fires are put out?

1 A. We do not enforce mine fire extinction.

2 Q. Does a fire control plan have to include
3 specifics mirroring the MSHA regulations?

4 A. No, it does not. Since we do not enforce the
5 fire protection plan, we only need those general
6 narratives that are in the mine plan.

7 Q. Can you describe what maybe the purpose of --
8 DEQ Land Quality Division's not going to enforce the
9 ground control plan. Why is it -- is it important to make
10 sure there's a narrative discussing the fire control plan
11 in the mine permit application?

12 A. The fire control plan could affect other aspects
13 of mining. So they could affect other aspects of the mine
14 plan and reclamation plan over time. So that's primarily
15 one of the reasons we need to know there are circumstances
16 that have been put into place to address some of these
17 issues on other mining aspects. Not just the fire itself,
18 but possible ignition of vegetative material up on top.
19 Possibly slumping of highwalls by undercutting by mine
20 fires. These are kind of things we need to know about in
21 order to address the other aspects of the mine plan.

22 Q. Does the fire control plan inside the Brook Mine
23 permit application, does that address those issues you
24 just mentioned?

25 A. It does address those issues.

1 Q. Is it, in your opinion, technically adequate?

2 A. It is technically adequate, yes.

3 Q. I'll have you turn now to DEQ -- or page DEQ
4 12-319.

5 A. I am there.

6 Q. Can you tell us what this part of the mine plan
7 is?

8 A. This is Addendum MP-6, which is subsidence
9 control plan.

10 Q. Can you tell us what the purpose of the
11 subsidence control plan is?

12 A. The subsidence control plan has several aspects
13 to it. One is to analyze potential of subsidence within
14 the mine area. Obviously, we're going underground with a
15 piece of equipment in this mine, and so subsidence control
16 is of key importance to the mine plan. Had to establish
17 the possibility of subsidence and then establish possibly
18 the nature of subsidence. How large of area might it
19 occur?

20 After working through computer models and
21 utilizing formulas developed by the Office of Surface
22 Mining, it was determined this would be nonsubsiding mine.
23 And so that is the way it's permitted, as nonsubsiding
24 mine.

25 Q. Who created the subsidence control plan in this

1 permit application?

2 A. That would be Cardno Company.

3 Q. Are you familiar with that company?

4 A. Vaguely familiar with that company. I know of
5 them a little bit. I know they're a very, very large
6 company, with many offices and a lot of employees that
7 work in underground mining.

8 Q. Who reviewed the subsidence control plan in DEQ?

9 A. I reviewed the subsidence control plan.

10 Q. Do you have past experience reviewing subsidence
11 control plans in applications?

12 A. I do not have past experience in reviewing these
13 in applications, no.

14 Q. Have you had any training on reviewing
15 subsidence control plans?

16 A. I have.

17 Q. Can you explain -- or tell us a little bit about
18 that training?

19 A. The training was twofold. First of all, it was
20 experiential training in the field. In a coal mine that I
21 worked at, there were a lot of underground mines in coal
22 beds we were mining. And a lot of these underground mines
23 were not very well mapped. This is in the Hanna area. I
24 lived in Hanna, Wyoming. And a lot of those old
25 underground mines were not mapped. There were so many of

1 these ma and pa mines, a lot of these mines just went off
2 into the hill somewhere. Those were almost impossible to
3 find out where they were at.

4 So I had the task put before me to find the way
5 to walk the dragline across these voids. And so I
6 initiated a drilling program, again, using my analysis of
7 strength of those materials and ascertained we could walk
8 the dragline across the voids. We walked across the voids
9 successfully.

10 As far as the analysis for the permit itself,
11 for the permit application, I had to attend some training,
12 get more familiar with how to determine subsidence.
13 Rather than the field version of drilling until we find
14 voids and work with those, I had to understand some of the
15 theory behind subsidence so I can at least judge the
16 document for its worth.

17 Q. When you're referring to the purpose of the
18 application, are you referring to the Brook Mine permit
19 application?

20 A. I am.

21 Q. Can you tell us a little bit more about that
22 training?

23 A. I attended OSM training on a subsidence class in
24 southern Illinois. It was in the spring of 2015. And we
25 analyzed all kinds of subsidence from different kinds of

1 underground mines, as well as highwall mining. And came
2 to find out what some of the parameters are that I needed
3 to examine to determine whether or not the mine plan, as
4 it addressed subsidence, was adequate.

5 Q. I'm not sure if it's been fully spelled out yet
6 in the record, but can you explain what OSM means?

7 A. That was the Office of Surface Mining.

8 Q. And that's a federal regulator?

9 A. It is.

10 Q. Can you describe how you reviewed the subsidence
11 control plan in this permit application?

12 A. There was a primary component in review of the
13 subsidence control plan was to break it up into couple
14 different options. The first one was a historical record
15 in that particular area. The mines in the Sheridan area
16 all subsided at one point in the past, sooner or later.
17 The type of mining they utilized here, room and pillar
18 method, was a recovery method where they utilized both
19 room and pillar techniques until they were ready to mine
20 back out of the mine. When they backed out of the mine,
21 they began removing all the pillars they had left in place
22 before for the support of the roof. In doing that, the
23 mine subsided. All the old underground mines then
24 subsided primarily due to the mining technique. It's
25 called retreat mining, where you back out of a mine like

1 that, robbing the pillars. They get the maximum coal
2 recovery they can do by doing that.

3 There were other types of mines that occurred in
4 other parts of the country. Longwall mining, which is
5 totally different than this, it does plan for subsidence.
6 It's actually an aspect of longwall mining that is planned
7 for and allowed for. I have actually seen in southern
8 Illinois panels that subsided not just houses, but towns.
9 And so they know how to deal with subsidence. And when I
10 took my class, that is where I went to.

11 The area that we're dealing with here, north of
12 the interstate in the Brook Mine permit area, has also had
13 old subsidence from those room and pillar mines. This is
14 a totally different mining technique than what we're
15 discussing with highwall mining.

16 Q. Can you describe what you looked at when you
17 were reviewing the subsidence control plan.

18 A. I looked at, like I said, the history of the
19 mining area and what the occurrences were of the
20 subsidence. And I also examined some of the rock
21 mechanics that were characterized by a laboratory analysis
22 of the roof, the coal, the floor materials, that is, the
23 materials above the coal, the coal itself, to act as a
24 strengthening support, and then the materials below the
25 coal. There were some limited lab analysis performed on

1 those materials to try to determine some of the basic
2 characters of pressures that they could withstand, as well
3 as the discussion as to the nature of those kinds of
4 forces and how they would react to highwall mining. Very
5 specifically.

6 Q. I'll have you pick up a different binder. And
7 it's the one that includes multiple DEQ exhibits. And
8 have you turn to tabs for DEQ Exhibits 17, 18, 19 and 20.
9 I'll give you a minute to just take a look at those.

10 Do you know what those documents are?

11 A. I do. These are portions of textbook that I
12 used in my subsidence class.

13 Q. Can you explain a little bit where those come
14 from?

15 A. These are created by the Office of Surface
16 Mining, and related to underground mining in this class.
17 And the chapters that exist here are those I utilized to
18 help assess the Brook Mining application. And so these
19 are the ones I pored over many, many times when I was
20 trying to determine the subsidence mechanics of this
21 particular area.

22 (Council Member Degenfelder
23 is now present.)

24 Q. (BY MR. KUHLMANN) Okay. When you evaluated the
25 subsidence control plan, did you try to run the model that

1 was used to create the control plan?

2 A. I did not.

3 Q. And why didn't you?

4 A. We received the data that was utilized for
5 modeling. And the model itself was described as a very
6 specific model that the Office of Surface Mining uses all
7 over the country to try to predict subsidence in areas
8 where we have coal as primarily the supporting structure
9 for the overburden material. And the materials then were
10 utilized by Cardno to determine the mechanics of the
11 actual subsidence itself, if it were to occur. These are
12 levels of expertise that are significantly higher than I
13 have. So the only thing that I was comfortable in doing
14 was analyzing the results to make sure that they looked
15 like something that would be feasible in this particular
16 case.

17 Q. Did Cardno provide any certification of their
18 model work?

19 A. I don't remember.

20 Q. Okay. Does DEQ need to run a subsidence model
21 in order to review a subsidence control plan?

22 A. No, we don't. I can make a couple of
23 assumptions when we get the information. One, the data is
24 accurate and it is as represented, because it comes from a
25 consultant, generally. An independent lab that is running

1 these analyzes that has really no association with the
2 mining company or a consultant. These particular
3 laboratories are known for their accuracy and their
4 fairness in dealing with others and their -- their
5 standing in the community as being -- dealing with others
6 in a -- in a tried and true way without actually
7 embellishing anything coming out of their laboratory.

8 Q. I think you mentioned earlier that highwall
9 mining at Brook Mine's not predicted to cause subsidence.

10 A. Correct.

11 Q. Can you tell us why?

12 A. There are several reasons. The model they ran
13 indicated that it would not subside, utilizing all the
14 variables that were known about the area at that time.
15 There's also a rule of thumb the Office of Surface Mining
16 has established over the years, that if you mine an area
17 and only recover 50 percent or less of coal, the mine will
18 not subside. This is a statement they've made over and
19 over again in many legal cases, and so it's a fairly
20 accurate rule of thumb in most of these areas where
21 subsidence is being under question.

22 Q. Do you know if the historic underground mines in
23 the area were considered in the subsidence program?

24 A. They were.

25 Q. Can you explain how those were considered?

1 A. They were considered primarily by, first of all,
2 mapping the areas the underground mines occurred in. The
3 maps that were provided by Brook in their permit
4 application were the most complete maps I've ever seen of
5 these underground mines. Primarily we have old surveyor's
6 maps and old mine maps from those underground mines from
7 the 19-teens, the 1920s, all way up to 1950s, but there
8 have never been one document or one map where they're all
9 put together. And Cardno and Brook and Western Water
10 worked over these and brought them all into one map. So
11 they were well aware of what mines existed in the area
12 they were at. They didn't have to go from map to map to
13 map to map and risk missing things.

14 Q. Under the permit application is highwall mining
15 going to occur near any historic underground mines?

16 A. Yes, it is.

17 Q. Can you explain how near that might be?

18 A. At present the panels are determined to exist up
19 to approximately 500 feet away from the old underground
20 mines. This is in case that some of the old underground
21 mines have not been mapped accurately. I will assume the
22 underground mines in some cases have not been mapped
23 accurately. And we want to leave a buffer in place just
24 in case they began to encounter some of those underground
25 mines prematurely. So the 500-foot buffer was put into

1 place for panel lengths.

2 Q. Even though subsidence is not predicted to occur
3 for the Brook Mine, is there anything in the mine plan
4 that describes how the applicant would address subsidence
5 if it does occur?

6 A. There is.

7 Q. Can you explain a little bit what the mine says
8 on that?

9 A. Again, there's a subsidence control plan that's
10 been placed into the mine plan itself to determine whether
11 or not subsidence will occur. If it occurs, what the
12 mitigation effects will be. There is a series of
13 possibilities that they will explore if subsidence shows
14 up. Different kinds of areas will have different kinds of
15 subsidence. And different areas are more critical to
16 subsidence than others.

17 Obviously, if it's beneath a stream or a wetland
18 or some other area like that, extremely severe. Other
19 areas out on the prairie, there might be a small -- let's
20 say a small crater, 3 feet deep and 10 feet wide, not
21 quite as critical as some of those other ones. Even there
22 they've got to subsidence control plan even for the
23 smallest ones, where they will institute a monitoring
24 program, observe the subsidence as -- as it goes through
25 mining process, start building reclamation plan for the

1 reclamation phase of the mine, in case it needs to be
2 reclaimed. Have all that in place about the time the
3 reclamation occurs in that particular area.

4 And so their control plan, essentially, is to
5 look for subsidence, control the subsidence and reclaim
6 the subsidence if and when that occurs.

7 Q. Will DEQ be involved in the reclamation
8 decisions made if subsidence occurs?

9 A. We will be implicitly involved with all of that.
10 One of the commitments they have made is that we will very
11 much dictate a lot of the procedures that take place
12 within that mitigation.

13 Q. Have you turn now to page DEQ 12-239. I
14 apologize. We're moving back to the mine plan.

15 A. Okay. Thank you.

16 Q. Exhibit 12. Apologize.

17 So pages --

18 A. Please give me the page again.

19 Q. That's DEQ 12-239. Apologize. I may have the
20 wrong page number.

21 A. Okay.

22 Q. Okay. I will not ask you about that.

23 A. Okay.

24 Q. It was not very --

25 A. Okay.

1 Q. Okay. We found it. It's page 12-23 --

2 MR. LAROCK: It's 329.

3 Q. (BY MR. KUHLMANN) 329.

4 A. 329. Okay.

5 MR. KUHLMANN: Thank you, Mr. LaRock.

6 A. And I am at page 12-329.

7 Q. (BY MR. KUHLMANN) Do you recognize this
8 document?

9 A. I do.

10 Q. Can you tell us what this document is?

11 A. This is a large-scale broad-scale map, general
12 location map of some of the trenches, some of the panels
13 they'll be utilizing in their highwall mining technique,
14 and some old underground coal mines that exist within the
15 permit boundary of the Brook Mine permit application.

16 Q. Does this map show mine panels related to pit --
17 or trench TR-1?

18 A. It does.

19 Q. Can you remind the council where that's located?

20 A. TR-1 is in the southeast corner of both the
21 Brook permit application area and the Big Horn mine permit
22 area.

23 Q. Are the mine panels described on this map the
24 current designs for the mine panels in the mine -- in the
25 other parts of the permit application?

1 A. These are not as current as some of the -- the
2 other information that was put forward previously. The
3 information that we looked at with the dated panels that
4 will take place over month and year are much more current
5 than these are. These are primarily visual aids to help
6 the reader understand the general occurrences of the pits,
7 the panels and the mine plan itself to help them
8 understand in a broad general way where it's at, what is
9 entailed. The ones we really observed for exact mining
10 details of those maps that we looked at earlier and each
11 panel by month and by year for the first five years.

12 Q. Was that the map that I think we referred to, in
13 short, as the Skittles map --

14 A. Yes, it was.

15 Q. -- or the rainbow map?

16 Can you describe how the mine panel shape has
17 changed -- or I guess how it's different between the map
18 that I'm showing you now and the map that you discussed
19 yesterday?

20 A. The primary difference is in the TR-1 pit area
21 down in the southeast corner. The entire system there was
22 moved 1700 feet to the south to move away from some of the
23 Big Horn Coal Mine buildings and other appurtenances
24 there. They are trying to avoid all those areas so they
25 don't have needless problems with Big Horn Coal services

1 and their buildings.

2 Q. When that mine panel was -- or that trench was
3 moved south, the place of the mine panel was moved south,
4 as you just said --

5 A. Correct.

6 Q. -- does that make it closer or further away from
7 the Tongue River?

8 A. It's further away from the Tongue River.

9 Q. All right. Thank you.

10 Go ahead and have you close up DEQ Exhibit 12.

11 We'll pull out DEQ Exhibit 13.

12 A. Give me a moment to -- Exhibit 13.

13 Q. Do you know what this document is?

14 A. Yes, I do.

15 Q. Can you tell us a little bit about it?

16 A. This is the reclamation plan for the Brook
17 permit application.

18 Q. What's the purpose of the reclamation plan?

19 A. The purpose of the reclamation plan is to give
20 us a tool to enforce reclamation of the mine area so that
21 any damage that is done by the mine, any modifications to
22 the overburden material, the coal itself, vegetation,
23 wildlife, can all be mitigated at one -- one time or
24 another, so that when the coal mine is done and the
25 reclamation is finished, the land use can recur to at

1 least equal or better than the original land use. So it's
2 close to approximate original --

3 THE REPORTER: I'm sorry. It's close to?

4 THE WITNESS: Original contour.

5 Q. (BY MR. KUHLMANN) Can you describe what you
6 mean by original contour?

7 A. Original contour is the basic shape of the
8 landscape. In this area you have a system of ridges and
9 valleys, and the reclaimed area has to include the system
10 of ridges and valleys. Not the very specific area where
11 they occur, but they must occur side by side just as
12 natural topography does now. That needs to be resculpted
13 in that manner.

14 Q. Is there a post-mine land use for the Brook
15 Mine?

16 A. There is.

17 Q. Is that described in the permit application?

18 A. It is.

19 Q. Can you tell us what that is?

20 A. Right now the post-mining land use is
21 principally for agricultural purposes, primarily grazing
22 land. And there's also some other aspects involved there.
23 For example, with the hunting walk-in area, that will be
24 fully reestablished again. The other uses -- recreational
25 uses, to a large degree in this particular area, will also

1 come back into play to a large degree than during the mine
2 life.

3 Q. All right. Does DEQ Land Quality Division have
4 control over the Game & Fish walk-in area program?

5 A. No. We do not.

6 Q. Do we know -- do you know yet that Game & Fish
7 will, with certainty, reestablish a walk-in area over the
8 Brook Mine permit area after mining is completed?

9 A. The indications that we have is what their
10 initial influence will be. For example, in retaining part
11 of the walk-in areas, they requested that we retain part
12 of that. So part of that is going to be retained. As far
13 as what DEQ -- or what Game & Fish does after the mine
14 plan and the mine is over, we don't know.

15 Q. I think you had mentioned that reclamation
16 includes contouring. Does it include replacement of
17 soils?

18 A. It does.

19 Q. Can you tell us a little bit more about that?

20 A. When the soils are removed, they are mapped.
21 Each topsoil stockpile has a quantity of topsoil known to
22 occur within that stockpile. We always keep inventories
23 of the topsoil and all the different stockpiles so we know
24 exactly how much topsoils exists to place back on top of
25 the cuts as they are reclaimed. Once the cuts have been

1 utilized through the mining purposes and the material is
2 pushed back into the pit, the overburden material, then
3 those different pieces of topsoil will be put back in
4 place on top of those mined-out areas in thicknesses that
5 equivalent -- that are equivalent to premining conditions.

6 Q. You mentioned topsoils stockpiles. Are there
7 any other types of materials that need to be stockpiled?

8 A. Yes. There will also be overburden stockpiles.
9 Since this is a single trench operation rather than a
10 conventional surface mine, there's not a lot of area to
11 put top -- or spoil material at this point in time. So
12 material will be removed from the trench and laid next to
13 the trench. It's ready to be pushed into the hole with
14 dozers later during the reclamation phase.

15 Q. Where -- on what type of soil are overburden
16 stockpiles placed?

17 A. Stockpiles are generally placed on topsoil,
18 topsoil stockpiles. Overburden stockpiles are placed on
19 lands that have had the topsoil removed and the growth
20 mediums removed first.

21 Q. So just to clarify there, topsoil piles are
22 placed on top --

23 A. On topsoil. Overburden piles are placed on
24 overburden, for all intents and purposes.

25 Q. Thank you.

1 Does the -- does reclamation include
2 revegetation?

3 A. It does.

4 Q. Can you tell us a little bit more about what is
5 required there?

6 A. Vegetation studies are performed prior to mining
7 to establish a baseline. During the mining phase, the
8 vegetation is continued to be analyzed and monitored to
9 allowed for climatological changes over time. The
10 vegetation you see today may not be the vegetation that's
11 there tomorrow. Very contingent upon the nature of the
12 materials that are being examined as well as the climate.

13 In this particular area that we live in, this
14 has been a good year so far. Fully expect to see good
15 growth in the vegetation. A number of years ago there was
16 terrible growth in the vegetation. We were receiving 7 to
17 8 inches of rainfall in a year, during that drought in
18 late 1990s and early 2000s. And so the vegetation at that
19 point in time was almost a completely different suite than
20 exists now.

21 So the vegetation, after long study over periods
22 of time to allow for the variance -- natural variance in
23 vegetation has been replaced in a manner that will fit
24 that particular scheme of it.

25 Q. When does -- when does the responsibility for --

1 when does Brook's responsibility over revegetation efforts
2 end?

3 A. It ends after a period of time where final
4 reclamation is observed for -- for lengths of years. And
5 dependent upon the nature of the material, how long it's
6 been since mining has occurred, the length of time it
7 takes for that kind of material to reclaim and for
8 vegetation to sprout and become fully ensconced in the
9 area. After at least five years of observation. Then we
10 can begin thinking about removing some of the -- the
11 amounts we have in the reclamation bond to reestablish
12 vegetation.

13 Q. Can it take longer than five years?

14 A. It can. In some areas, low rainfall and high
15 winds.

16 Q. And what happens to the reclamation bond if it
17 takes longer than five years?

18 A. Reclamation bond remains in place until it has
19 been declared by DEQ to be satisfactory.

20 Q. Okay. Is that as long as it takes to get that
21 declaration --

22 A. This is as long as it takes, yes. The Rosebud
23 Coal Mine in Hanna, Wyoming, one of the ones I worked at
24 many years, was in that phase for quite a long time, until
25 they finally came out of reclamation. It's the first mine

1 in Wyoming -- surface mine in Wyoming that underneath the
2 more or less modern rules and regulations that was
3 reclaimed standards and have the -- the permit was finally
4 allowed to elapse. So that mine is fully reclaimed and
5 stands as probably a model for a lot of the other mines.

6 Q. Does reclamation address structures or roads in
7 the permit area?

8 A. It does.

9 Q. What does reclamation of the structures require?

10 A. Reclamation of the roads requires moving of
11 materials that are nonsupportable to vegetation, to other
12 areas. A lot of scoria roads and the other roads of that
13 nature are generally -- will be picked up and placed in a
14 pit area somewhere where there's room to place the
15 material and make that part of the overburden material
16 again. And so they remove that from areas that need full
17 vegetation.

18 There are areas that are allowed to have roads
19 left in there. Sometimes the ranchers want to keep the
20 roads in that area, in which case the liability falls on
21 the ranchers, if they request that road to remain on the
22 ranch.

23 By and large, the roads in the reclamation area
24 are two-tracks. We try to keep as many roads out of the
25 reclamation area as possible. Obviously, we've got to

1 have some for access, things like monitoring wells,
2 weather stations and that sort of things. But they are,
3 by and large, two-track roads that are fairly easy to
4 reclaim by simply running over them with a disc and
5 placing some seed in there. So, yes, the roads that are
6 involved in this are generally of less impactful nature.

7 Q. What occurs to structures that might be in the
8 permit area during reclamation?

9 A. All structures that are -- are not spoken for,
10 are removed and reclaimed in a suitable manner, whether
11 they are resold for recovery of the materials to someone
12 else that may want to use the materials for -- steel, for
13 example -- or actually use the buildings again and rebuild
14 them. They can utilize them that way. Other bits and
15 pieces will be taken to a landfill. There are parts of
16 buildings, for example, or parts of facilities that are
17 not recoverable and the landfill will be utilized for
18 those.

19 The landfill can be in the mine permit itself.
20 There are solid waste disposal areas in most of the mines,
21 in some of the old worked-out pits where they can place a
22 lot of these materials. They don't have to haul them all
23 they way to, say, the Sheridan dump or something like
24 that.

25 Q. Is there a solid waste facility plan for the

1 Brook Mine?

2 A. There is not yet.

3 Q. If there was, is there regulation over that?

4 A. We do observe the -- the structures themselves.

5 One primary reason is to ensure the solid waste does not
6 ever encounter the groundwater system. So the solid waste
7 put -- is put in the old pit remains above the groundwater
8 table. We don't want that material in the groundwater
9 table. Though they are supposed to be benign materials,
10 we still want to ensure the groundwater table does not
11 intersect those in case there's something we missed.

12 Q. Would the Brook Mine permit need to be changed
13 in order for Brook Mine to construct a solid waste
14 facility in the future?

15 A. There is some minor discussion on those -- on
16 those aspects, but right now the plans utilize a
17 consultant, I should say, or a supplier of solid waste
18 disposal.

19 Q. So would that description have to be changed if
20 Brook Mine instead wanted to build a solid waste facility?

21 A. It would have to be modified so we knew the
22 location and the extent of the -- of the facility. And
23 also we do not actually oversee the administration of that
24 facility or the enforcement of that facility. We just
25 observe those as related to groundwater. The Solid and

1 Hazardous Waste Department of DEQ handles the actual
2 materials themselves and the condition of the materials in
3 the hole.

4 Q. Does restoration address hydrology?

5 A. Yes.

6 Q. Or reclamation. I apologize. Does reclamation
7 address --

8 A. Reclamation does address hydrology.

9 Q. Can you tell us little bit how that is
10 addressed?

11 A. Most cases the hydrology is addressed
12 straightforwardly, as it is in Appendix D6 in the mine
13 plan. What they're looking for is longevity and use in
14 the future, with the understanding that the general
15 hydrology of the system has now been influenced by a
16 trench, a 150-foot-wide, multiple hundred foot deep trench
17 that has intersected the groundwater systems. In the TR-1
18 pit area that is not as critical because that's an old
19 mined-out pit. So the upper two-thirds or three-quarters
20 of that pit has already been mined and put back in the
21 hole. So that groundwater system has already
22 reestablished itself in unconsolidated materials, which is
23 what will go back into that hole again is unconsolidated
24 materials. But changing hydrology in that particular area
25 has already happened.

1 Some of these other areas can move up into the
2 hills. Those dryer areas will influence the recharge in
3 some of those areas because it will then have fill
4 material in areas that used to have solid sandstone,
5 shales and coals. So what happened is those refill areas
6 will begin to recharge quicker than the normal areas would
7 recharge. And so this actually puts possibility out there
8 that seams, coal seams, and the other semi aquifers above
9 those might be able to recharge faster down dip from this
10 because they are now in this faster recharge.

11 So ultimately what will happen is the hydrology
12 of the area will reestablish itself and end up with a
13 long-term hydrology that fits our rules and regulations
14 and statutes.

15 Q. Was the groundwater hydrology modelled for this
16 permit application?

17 A. It was.

18 Q. Who reviewed that model?

19 A. Mr. [sic] Muthu Kuchanur reviewed that model,
20 from the Cheyenne office.

21 Q. On the same subject. You had talked a little
22 bit about yesterday about sampling of overburden; is that
23 correct?

24 A. Correct.

25 Q. You mentioned that Brook Mine had gone through a

1 pattern of sampling, that they were not able to -- I guess
2 they had -- they had gone through a pattern of sampling,
3 correct?

4 A. Correct. Initially, they did.

5 Q. Can you describe what that pattern was?

6 A. The initial pattern was a lot broader-scale
7 pattern. When you go into an area for primary
8 exploration, has never had any exploration holes drilled
9 in it, or you don't have access to exploration holes that
10 were drilled in it, you've got to drill a series of holes
11 with a pretty wide, all-encompassing area within the
12 permit application.

13 As you begin to put the information together and
14 see what kind of units are out there, you then have to
15 start in-filling some of those areas with further
16 information from the drill holes. Also, at that point in
17 time you have to start taking cores of the overburden to
18 try to characterize the chemical nature of the overburden
19 itself. So you know not just what material you're dealing
20 with, what the quality of the material's like at the same
21 time. So you can allow for the mine plan, reclamation
22 plan, and all the pieces that are needing to come together
23 for this entire permit application.

24 Q. Was the overburden sampling that DEQ -- or that
25 Brook Mine conducted sufficient to make the application

1 technically adequate?

2 A. It was.

3 Q. I think you mentioned yesterday the idea of
4 Brook Mine conducting some additional overburden sampling.
5 Is that correct?

6 A. Yes. Yes, I did.

7 Q. What would be the purpose of requiring Brook
8 Mining to conduct that additional overburden sampling?

9 A. Brook Mine, when they performed their overburden
10 sampling, did this 80-acre centers on drill holes. This
11 is twice the density required by many of the other coal
12 mines. They were very concerned with the nature of the
13 materials in the trench areas and just outside of trench
14 areas because there were -- there were multifold reasons
15 for this. Primarily because the highwall miner and the
16 highwall safety. So they did a lot more testing of those
17 materials for not just mechanics but quality as well.

18 They did the 80-acre spacing, which normally
19 required 160, which helped us generate a model -- a
20 stratigraphic model in that particular area, with the
21 ability to extrapolate from what we had, because it was
22 pretty dense in most of -- I'd say 85 percent of the area.
23 We can then build extrapolations to go into those areas we
24 wanted to have overburden control because of the reasons I
25 just specified, but were not absolutely necessary for

1 technical adequacy.

2 Q. So what would DEQ's Land Quality Division use
3 additional data in say that extra 15 percent of the mine
4 permit area for?

5 A. This would give us a little bit better level of
6 comfort, I should say, for lack of a better word, with the
7 information as is presented. So we feel it's fully
8 represented to the degree we would like to see it. The
9 statutes, rules and regulations have a degree that things
10 are brought to, and then we also have degrees of
11 completeness that we also like to keep in-house that help
12 us become more comfortable with these particular
13 properties in lieu of information in some cases.

14 Q. In your opinion, has the sampling that's
15 occurred met the requirements of the statutes and
16 regulations?

17 A. It has.

18 Q. Taking a look at page DEQ 13-075.

19 A. Okay.

20 Q. Can you tell us what the section marked as RP.12
21 refers to?

22 A. This is the reclamation and bonding of these
23 dual permitted areas we discussed earlier.

24 Q. And if you could mention a little bit about
25 bonding required in the dual permitted areas. Can you

1 explain what Brook Mine would be responsible for in dual
2 permit area?

3 A. Certainly. Brook Mine's responsible for all of
4 the activities that they have taken within those dual
5 permitted areas that relate to the mine plan and
6 reclamation. They're responsible for essentially every
7 drop of dirt that they move, every bit of topsoil that
8 they replace. So we have bond for every single thing that
9 they do. If, for example, they have were to leave the
10 area for whatever reason, we would have a full bond amount
11 for that overlap area. This protects not just the
12 citizens of the state of Wyoming, but the other company as
13 well. They would not be left with this bond liability.

14 Q. I think you mentioned earlier that the Big Horn
15 Coal Company has -- part of its permit overlaps with part
16 of the Brook Mine's permit.

17 A. Yes, it does.

18 Q. What would the responsibilities for bonding be
19 for the Big Horn Coal Mine based upon Brook Mine's permit
20 application?

21 A. Certainly. Big Horn's responsibility is for the
22 amount that they still have left of their final
23 reclamation phase of their mine. So they still have their
24 shop area and a little bit of a boneyard in front of the
25 shop. They still have their primary access road, which is

1 actually a haul road, that goes between that area that Big
2 Horn has and the county roads in two different directions.
3 They're responsible for that piece of the overlapping area
4 and that's it.

5 All the pastureland has already been fully
6 released. All of the areas that can be reclaimed for
7 those pastures and agricultural land has been fully
8 released. And only areas of those roads and those
9 buildings. That's it. So that's all they're responsible
10 for.

11 Q. If the Brook Mine disturbed areas in the Big
12 Horn Coal permit area that Big Horn Coal had previously
13 reclaimed, who would need to bond to reclaim that -- that
14 disturbance?

15 A. That surface disturbance would need to be bonded
16 by Brook Mine.

17 Q. Okay. When does reclamation of the mine begin?

18 A. Reclamation can begin, depending upon the
19 requirements of each mine. It's different for each mine.
20 There are different rationale for the reclamation
21 schedule. They're not the same for all mines, very
22 obviously. There are mines that reclamation can occur in
23 almost immediately, depending on the nature of the pits
24 being put in place. There are other areas that cannot be
25 reclaimed for long, long periods of times because they're

1 being used by the mining process.

2 Once the pits are mined through, they're very
3 contained in areas or other accessibility. Like I said,
4 there could be solid materials placed in those as a solid
5 waste dump. They can also be utilized as sumps. In a lot
6 of mines, the water doesn't occur uniformly throughout the
7 mine, unfortunately. It generally occurs in one or two
8 parts of the mine specifically, where you have a lot of
9 water that's gathered. And so that pit has been left open
10 in most of the coal mines in the eastern part of the basin
11 to gather water out of that particular area to use on the
12 rest of the mine.

13 So when they get into those areas further away
14 from the water facilities and don't have water they can
15 get to, they can haul to that particular area and utilize
16 it to knock down road dust, other kinds of dust, and for
17 other applications that are needed for that water. So
18 these different kinds of facilities may still be in place
19 for long periods of time. What they do is make the pit
20 stable so no subsidence can occur or slumping can occur,
21 no coal mine fires may start, stabilize everything in that
22 area, put structures into place to gather the water, for
23 example, that's a sump, and utilize that area for maybe
24 mine life in some cases, because some of the mines only
25 have those one or two areas that have water in them. The

1 rest of them are dry. So they have to use from that
2 original pit.

3 Q. Does the fact that water can infiltrate into an
4 open pit indicate there's a problem?

5 A. Not necessarily. Most mines in the Powder River
6 Basin do encounter water in the coal beds. By and large,
7 the coal beds are the primary aquifers in the basin.
8 Other aquifers that we see are generally little in nature
9 and smaller extent, and generally not suitable for
10 utilization as an aquifer with -- aquifer has to be fairly
11 reliable, provide a certain amount of water over a long
12 period of time. There are virtually none of those in the
13 Powder River Basin but the coal beds.

14 Q. If there's a pit that's left -- or stabilized to
15 be a sump for a period of time, does that pit still need
16 to be reclaimed --

17 A. Yes.

18 Q. -- through the mine?

19 A. It does. Absolutely.

20 Q. Is that pit bonded for reclamation?

21 A. It is fully bonded the entire life of the sump.

22 Q. If it's open for 10 years, it would be bonded
23 for 10 years?

24 A. Yes.

25 Q. Does the Brook Mine permit application describe

1 the geographic sequence of reclamation?

2 A. Yes, it does. It depicts the -- the mining to
3 occur from east to west and TR-1 pit area we discussed
4 earlier and all the way through to the western side of the
5 permit boundary over time. So it moves east to west.
6 Reclamation is slightly different. The first pit, TR-1
7 pit is going to be kept as a sump. Since that's in the --
8 down in the bathtub of the area there where we've got a
9 lot of available water, you can utilize that water in that
10 pit throughout mine life for all the different purposes
11 they need that for. If they were to fill that in and
12 reclaim it, it would be pinching off a major source of
13 water for them. They do not have water in that upper part
14 of that area because the reasons I explained, too close to
15 the outcrop, the aquifers do not contain any water, even
16 the coal is very, very dry in that area. So that
17 particular area needs that pit to stay open for mine life
18 so they can knock dust down and everything else.

19 The TR-2 pit to the rest of the pits, then, will
20 have concurrent reclamation taking place at some point in
21 time. So TR-2 will be initialized, remove the overburden,
22 remove the coal, do the highwall mining technique, pull
23 out of that pit, push the overburden in, reclaim it with
24 the topsoil. There's a series of events taking place to
25 try to remain as concurrent as possible.

1 There's a waiting period for the TR-2
2 reclamation, obviously, because you've got to mine it.
3 Once it's been fully mined and the miner has been moving
4 over to TR-3, for example, from TR-2, TR-2 can be fully
5 reclaimed. And so as typical in a lot of our mines,
6 we'll have one pit being reclaimed while the other one's
7 being mined.

8 Q. Has the groundwater inflows into, say, pit TR-1
9 and other pits been modeled for this permit?

10 A. Yes, it was.

11 Q. Where are the results of that -- the predicted
12 inflows located?

13 A. There are two locations. One is Appendix D6,
14 and the other one is a narrative description or narrative
15 discussion in the mine plan, possible hydrological
16 consequences.

17 Q. Are those also addressed in a groundwater model?

18 A. The numbers themselves are addressed in
19 groundwater modeling, yes. And the future -- both the
20 past, present and future occurrences of water are
21 addressed in that model.

22 Q. Do you know if -- if there might be another
23 witness from DEQ who will be addressing the groundwater
24 modeling?

25 A. Dr. Kuchanur would be that witness.

1 Q. I'll have you turn to but not open up page
2 DEQ 13-114.

3 A. I am there.

4 Q. Do you know what this document is?

5 A. This is a topsoil replacement sequence map.

6 Q. Okay. And can you generally describe what this
7 map includes?

8 A. It generally defines the topsoil piles and
9 replacement of topsoil over time, where the topsoil will
10 be replaced on top of the overburden as it's pushed back
11 into the pit, what time, approximate date, over which area
12 during that time.

13 Q. Does this map generally describe the geographic
14 sequence of reclamation you testified about just a minute
15 ago?

16 A. It does. It does.

17 Q. Does the reclamation plan allow reclamation to
18 occur sooner than this map indicates?

19 A. It can, yes.

20 Q. Okay. You've mentioned that Brook Mining will
21 provide a reclamation bond for its permit, correct?

22 A. Yes. Indeed.

23 Q. Has Brook Mining submitted a proposed bond
24 calculation to DEQ?

25 A. They have.

1 Q. Is it required for Brook Mine to provide a -- is
2 it a permit application requirement for Brook Mine to
3 submit a bond calculation to DEQ?

4 A. It is.

5 Q. Did you review the most recently proposed bond
6 calculation?

7 A. I did.

8 Q. Was there anyone else who reviewed it?

9 A. Mr. Doug Emme assisted me in review of that bond
10 calculation.

11 Q. What is Mr. Emme's experience with bonding?

12 A. He is an expert bonding analyst based on
13 background and experience. He does most of our
14 reclamation bonds throughout the entire District 3 area.
15 He works on all kinds of bonds, all the way from smaller
16 mines to larger mines. He's been doing it for decades.
17 So we fall back on his expertise when we're looking at
18 bonds, if we ever have doubts or concerns, worries about
19 these. And so he is a very good resource for us to go to.

20 Q. I guess kind of in -- kind of wrapping up our
21 testimony today, have you reviewed the objections filed
22 against the Brook Mine permit application?

23 A. I have.

24 Q. And looking back at the -- after reviewing those
25 objections and looking back at the permit application

1 portions that you reviewed and testified about today and
2 yesterday, in your opinion is -- are those portions of the
3 application still technically adequate?

4 A. Yes.

5 MR. KUHLMANN: Thank you, Mr. Kristiansen.
6 That was my last question.

7 CHAIRMAN BAGLEY: All right. Let us take
8 five-minute break and then we will begin cross-examination.

9 (Hearing proceedings recessed

10 10:25 a.m. to 10:36 a.m.)

11 CHAIRMAN BAGLEY: All right. Now begin
12 cross-examination. We'll start with Ms. Boomgaarden.

13 MS. BOOMGAARDEN: Thank you, Mr. Chairman.
14 Mr. Gregersen is going to cross-examine.

15 CHAIRMAN BAGLEY: All right. Thank you.

16 CROSS-EXAMINATION

17 Q. (BY MR. GREGERSEN) Hi, Mr. Kristiansen. My
18 name is Clayton Gregersen. I'm here on behalf of Big Horn
19 Coal Company. I just have a few questions based on your
20 testimony from yesterday and today.

21 A. Okay.

22 Q. The first issue I want to address is you stated
23 at one point that the TR-1 area there would be a pump down
24 in there that would supply water to the mine I believe for
25 the life of the mine?

1 A. It's possible. It's just defined as a sump
2 area, so I don't know the mechanics.

3 Q. You don't know the mechanics.

4 A. No.

5 Q. Is that information in the permit application?

6 A. It is not.

7 Q. It is not.

8 So the source of the water to be used for the --
9 for the -- well, in your words, I believe, for a large
10 portion of the mine actually isn't in the permit
11 application?

12 A. The source of the water is identified, but the
13 mechanics of moving the water is not, that I can remember.

14 Q. So it is in the permit application that the
15 water from TR-1 area will be used and pumped out of there
16 for other mine purposes?

17 A. It's part of the narrative.

18 Q. Okay. Thank you.

19 And do you know where exactly that is in --

20 A. I don't know exactly, no.

21 Q. Do you know what a -- what section of the permit
22 application it would be in?

23 A. Primarily be in mine plan and probably Appendix
24 D6, hydrology appendix.

25 Q. Okay.

1 A. A lot of the specifics are discussed.

2 MS. BOOMGAARDEN: Mr. Ruby, Mr. Girardin,
3 we do need to connect the computer to the --

4 MR. RUBY: Projector.

5 MS. BOOMGAARDEN: -- projector.

6 Sorry. There's a --

7 MR. GIRARDIN: We need the same adapter.

8 MR. RUBY: See if I can do this without
9 tearing everything apart.

10 MR. GIRARDIN: Function -- there it is.

11 Q. (BY MR. GREGERSEN) I'm not -- we don't need to
12 look at that yet. I just wanted to have that ready.

13 A. Oh, okay.

14 Q. (BY MR. GREGERSEN) My apologies if I misled
15 you.

16 All right. So the -- one of the first areas I
17 wanted to ask you about is the -- well, you indicated in
18 what you pointed out yesterday as the Brook Mine surface
19 damage bond for Big Horn Coal surface ownership.

20 A. Uh-huh.

21 MR. GREGERSEN: This is found in DEQ
22 Exhibit 1, pages DEQ 1-066 through 073, if anyone wants to
23 turn to it.

24 Q. (BY MR. GREGERSEN) Could you get that in front
25 of you.

1 A. Which -- DEQ --

2 Q. DEQ Exhibit 1.

3 COUNCIL MEMBER LALLY: What were those page
4 numbers again?

5 MS. BOOMGAARDEN: 066 to 073.

6 A. There we go. What pages were those again?

7 Q. (BY MR. GREGERSEN) 066 through 073.

8 A. I'm there.

9 Q. All right. Now, isn't it true that under
10 Wyoming Statute 35-11-416(a), that in instances where the
11 surface owner is not the owner of the mineral estate
12 proposed to be mined by the mining operations a permit
13 shall not be issued without the execution of a bond or
14 undertaking to the state, whichever is applicable, for the
15 use and benefit of the surface owner. Is that correct?

16 A. That is correct.

17 Q. And this -- the amount of the surface owner bond
18 has to be set by DEQ, by statute, correct?

19 A. Yes, it does.

20 Q. Now, what you're looking at, DEQ 1066, this is a
21 document that is actually prepared by Brook Mine or at the
22 behest of Brook Mine, correct?

23 A. Yes, it was.

24 Q. Actually, it says on there it was prepared by
25 WWC; is that right?

1 A. Yes, it is.

2 Q. Okay. Now, isn't it true that in prior
3 testimony before this council you've testified the surface
4 owner protection bond is something that DEQ doesn't have a
5 set procedure for and is something that you yourself have
6 never been a part of before?

7 A. Correct.

8 Q. And didn't you also testify that while you
9 weren't sure exactly how the surface protection bond
10 amount would be set, what you did know was that all
11 parties including the mining company, the surface owner
12 and DEQ would participate together and arrive at the
13 process to gather that bond amount?

14 A. Yes.

15 Q. And so under your testimony, you said that the
16 surface owner protection bond will, in fact, be set by the
17 DEQ, and the landowner will have the opportunity to see
18 this number and then it will be published for any comments
19 and questions, correct?

20 A. I'm not sure about the published part, but it
21 will be seen by all the parties prior to.

22 Q. And they'll be able to participate?

23 A. Yes.

24 Q. And be part -- so is it still your position
25 specifically with the Big -- the surface ownership bond

1 for Big Horn Coal that Big Horn Coal will be able to
2 participate in this before any number is set and before
3 any permit is issued as required by the statute?

4 A. It will be, yes.

5 Q. Okay. Thank you.

6 Mr. Kristiansen, I'd like to move to a separate
7 area of your testimony from yesterday. Yesterday you
8 talked and Mr. Kuhlmann introduced various exhibits,
9 excuse me, from the permit application and several
10 portions of that application. Do you remember that?

11 A. I do.

12 Q. Okay. So specifically one of the documents that
13 Mr. Kuhlmann had you review was a map of the Brook Mine
14 mine plan found in DEQ Exhibit 12, page 12. -- -134.
15 Could you please pull up that map?

16 A. Please say that again.

17 Q. Exhibit 12 of DEQ, page 12-134. I believe this
18 is the rainbow or the Skittles map that you referred to?

19 A. Do you have the DEQ number on the lower
20 right-hand corner I can flip to quicker?

21 Q. The number that we have for the exhibit is
22 12-134.

23 A. All right. Here we go. I'll open this much of
24 it to show this is indeed the map you're talking about,
25 correct?

1 Q. Yep. I think you actually have the portion that
2 I was going to draw your attention to.

3 A. Okay.

4 Q. Do you see on that bottom corner -- I'm not sure
5 this is technically considered part of the key, but it has
6 the Ramaco logo, and it says Exhibit MP-4. -- or MP-4.1.

7 A. Yes.

8 Q. All right. And so that I don't have to go
9 through and try to pull up that page from the I don't know
10 how many hundreds of pages document that is Exhibit 12,
11 what I've put up on the screen there for you is what's
12 labeled as Big Horn -- BHC Exhibit 10. And if you look at
13 the bottom corner, it also says MP-4.1. Do you see that?

14 A. I do.

15 Q. And so this is the same map, correct?

16 A. It appears to be the same map, yes.

17 Q. Okay. Thank you.

18 So as you discussed yesterday the various
19 rainbow-colored polygons on this map indicate areas of the
20 proposed mine by Brook Mine, correct?

21 A. Correct.

22 Q. Now, this map also shows the location of these
23 proposed mining areas by using the backdrop of township,
24 range, section lines. Do you see those?

25 A. I do.

1 Q. Okay. Now I want you to look up at the map and
2 I want to direct your attention to what you described
3 yesterday as the TR-1 area.

4 A. Okay.

5 Q. It's right there, I believe.

6 A. That's it.

7 Q. And that is in Section -- the -- excuse me, that
8 is only in Sections 15 to 22, correct?

9 A. Correct.

10 Q. So it's not found -- and, specifically, it's
11 only in the southeast corner of 15 and the northeast
12 corner of 22, correct?

13 A. Correct.

14 Q. Now, as you discussed yesterday, that center
15 oval-shaped portion is where the highwall trench is going
16 to be cut and where Brook Mine proposes to cut down
17 through the overburden and where it will begin the mining
18 panels that will extend to both north and south as
19 indicated by the colored strips, correct?

20 A. Correct.

21 Q. Now, as -- I believe you testified just earlier
22 today, this is the map that you believe is the more
23 accurate map of the mining operation, right?

24 A. Yes, it is.

25 Q. Okay. And so as you can see, these mining

1 panels, particularly the ones that run to the north, run
2 right up pretty close to the Tongue River, right?

3 A. Yes, they do.

4 Q. And they -- and they're actually right in kind
5 of that -- that almost armpit area that's in the
6 confluence of the Tongue River and Goose Creek, right?

7 A. Pretty close, yes.

8 Q. Now, you also testified I think both today and
9 yesterday that the TR-1 area is a little bit unique
10 because it falls in area that is previously mined
11 material, right?

12 A. Yes.

13 Q. That overburden material on top of the coal
14 that's proposed to be mined is previous mined backfill
15 that's been dumped back in there.

16 A. Yes, it is.

17 Q. And so this is different than a lot of the
18 native strata and a lot of the other overburden that's
19 going to be encountered in the Brook Mine proposed mining
20 operations for that reason; isn't that right?

21 A. Yes, it is.

22 Q. All right. So I'm going to leave this map up
23 there just as sort of a reference as we start going
24 through some of the other portions of some of the exhibits
25 that you introduced yesterday. And I'm going to go ahead

1 and apologize to the council and to you, Mr. Kristiansen,
2 in advance, because as I'm sure you're aware -- as aware
3 as anyone, a lot of these aspects of the mine plan, the
4 permit application, they have cross-references that make
5 you have to jump back and forth between documents. So
6 we're going to have to do a little bit of jumping here.

7 A. Okay.

8 Q. So yesterday you testified about DEQ Exhibit 34,
9 which consists of comments to the permit application of
10 Brook Mine and the responses of DEQ personnel, right?

11 A. Yes.

12 Q. Could you pull out Exhibit 34.

13 THE REPORTER: I think it's the one that's
14 right in front that your map's on.

15 THE WITNESS: This one here?

16 THE REPORTER: Yes.

17 THE WITNESS: It is. Put that over here.

18 A. And I'm there.

19 Q. (BY MR. GREGERSEN) All right. And so
20 Exhibit 34, as you testified yesterday, is a series of
21 comments and responses -- comments from DEQ personnel
22 where they identify some problematic areas or areas where
23 they would like more information from the permit
24 application, and then Brook Mine's response to those,
25 correct?

1 A. Correct.

2 Q. So I'd like to first draw your attention and the
3 council's attention to DEQ 34, page 048.

4 A. I'm there.

5 Q. All right. And on the middle of that page, do
6 you see a comment Muk 11 - Round 1?

7 A. I do.

8 Q. And so just for our clarification, who is that
9 comment from?

10 A. That's from Dr. Kuchanur.

11 Q. Dr. Kuchanur. All right.

12 And as you testified yesterday, as the permit
13 director, you kind of oversee all these comments, and in
14 many instances you actually participate in the comment
15 process, correct?

16 A. Yes.

17 Q. So looking at the substance of this comment, it
18 states that Appendix D6, Section D6.2.1 of the permit
19 application states that "The overburden is comprised of
20 sand lenses, clinker and alluvial that have the potential
21 of water bearing bodies." But then he goes on to say
22 these areas are discontinuous and will not hold large
23 quantities of water. Do you see that?

24 A. I do.

25 Q. The comment then requests additional

1 justification for this statement, and specifically
2 requests this justification come from the hydrogeologic
3 data specifically collected by Brook Mine that shows the
4 dry zones based on the drill holes, monitor wells and
5 other applicable data, right?

6 A. Uh-huh.

7 Q. All right. So then the response states that
8 "Section D6.2.1.1 has been updated..." to which the
9 comment responds by saying that it is not accepted an
10 additional -- and in addition to the reference to Addendum
11 D5, please provide a description of this. Do you see
12 this?

13 A. I see it.

14 Q. Now, let's go ahead and take a look at
15 Section D6.2.1.1. This is in DEQ Exhibit 6, page 23.

16 A. What page was that again?

17 Q. DEQ Exhibit 6, page 23.

18 A. 23. I am there.

19 Q. All right. So this section is entitled Local
20 Hydrogeology. And it states there's three potential
21 hydrogeologic units in the Brook Mine. They include
22 Carney seam, Masters seam and the underburden. And then
23 the very last word on page 23 onto page 24, says,
24 "The overburden is comprised of sand lenses, clinker and
25 alluvial," same in the comments. And then it says that

1 these waters -- these bodies won't hold sufficient amounts
2 of water, large quantities of water. And then it cites
3 Addendum D5-2 as containing electric logs with resistivity
4 data that demonstrates that the overburden is dry. Do you
5 see that?

6 A. I do see that.

7 Q. So the comment which requested additional
8 justification that the overburden doesn't hold large
9 bodies of water, the answer to that is effectively
10 referring them to Addendum D5-2, correct?

11 A. Yes.

12 Q. Now, isn't it true that -- actually, let's go
13 ahead and take a look, then, at D5-2. This is on page --
14 DEQ Exhibit 5, page 53.

15 A. DEQ Exhibit 5, page 53.

16 Q. Yes, sir.

17 A. I am at page 53.

18 Q. Okay. And as I understand it, Addendum D5-2
19 goes until page 164. Is that your understanding?

20 A. Yes, it does.

21 Q. And so these roughly 110 pages contain data
22 referenced by Brook Mine, and I'm assuming reviewed by DEQ
23 in response to this comment, and it has a series of
24 drilling logs that discuss the materials found at various
25 depths --

1 A. Yes.

2 Q. -- many of which drilled through the overburden,
3 correct?

4 A. Yes.

5 Q. Now, Mr. Kristiansen, isn't it true that there's
6 absolutely no drilling logs of any kind from Section 22?

7 A. To the best of my recollection, you're correct.

8 Q. And as we discussed earlier, the TR-1 area is
9 only in the northeast of 22 and the southeast of 15?

10 A. Correct.

11 Q. And so there's no drilling logs from Section 22.
12 And, in fact, there's no drilling log from the southeast
13 section of Section 15, is there?

14 A. No, there aren't.

15 Q. Now, if you turn to page DEQ 5, 162, the last
16 three pages of Addendum D5-2, you'll see what is the only
17 drilling log from Section 15; isn't that correct?

18 A. Correct.

19 Q. And this drilling log from Section 15 is from
20 the -- not the southeast, but the actually northwest
21 portion of Section 15, correct?

22 A. Correct.

23 Q. And this is actually 40 years old, isn't it?

24 A. Yes. It is.

25 Q. It's from 1978?

1 A. It's almost 40 years old.

2 Q. And it's actually not in any data from Brook
3 Mine. It's actually data from Big Horn Coal; isn't that
4 right?

5 A. Yes, it is.

6 Q. So then the material responding to the comments
7 and to establish to the DEQ, the statement -- for the
8 statement the overburden is dry, there is actually no
9 information from the TR-1 area. And the only information
10 from anywhere near the TR-1 area is from 40 years ago and
11 about a half mile to the northwest?

12 A. Correct.

13 Q. So as a result, the materials provided to the
14 DEQ in response to the comment requesting the
15 justification that the overburden is dry, it actually
16 doesn't contain any information from the TR-1 area,
17 correct?

18 A. Right.

19 Q. So according to these logs, there's no knowledge
20 as to whether the TR-1 area might have a significant
21 amount of groundwater in the overburden and might not be
22 dry?

23 A. Correct.

24 Q. And maybe I misunderstood your testimony earlier
25 today, but you describe the TR-1 area as a bathtub, right?

1 A. Correct.

2 Q. And were you only talking about the coal seams
3 or were you also discussing the overburden as --

4 A. In that area general area I was discussing the
5 overburden because of its nature.

6 Q. Overburden there actually has a significant
7 amount of water?

8 A. It probably does.

9 Q. But that's not what the permit application says.
10 The permit application says the overburden is dry, doesn't
11 it?

12 A. That part of the description actually applies to
13 the rest of the mine. Other than that particular area,
14 it's not clear.

15 Q. But this says Local Hydrology, and I guess I'm
16 missing where the distinction is again the TR-1 area and
17 the rest of it in the permit application. Can you show
18 that to me?

19 A. It doesn't exist.

20 Q. Thank you.

21 Now, can you go back to DEQ Exhibit 34, the
22 comments and responses, and this time go to page 47. Oh,
23 excuse me. DEQ 49. 47 is the number at the bottom of the
24 page, but --

25 A. Oh, okay. DEQ --

1 Q. -- exhibit number --

2 A. DEQ number, the exhibit number.

3 Q. I apologize.

4 A. Thank you. I'm there.

5 Q. Okay. So do you see Comments Muk 13 - Round 1?

6 A. Uh-huh.

7 Q. So this, again, notes Section D6.2.2.1 and
8 state -- recognizes that no monitoring wells were
9 completed in the overburden or the interburden as no water
10 was found in these areas during drilling operations. The
11 comment goes on to say this information is critical in
12 demonstrating the overlying units are dry. Therefore,
13 please provide a map with all the drilling holes and their
14 depths that were used to make this determination. Do you
15 see that?

16 A. Yes, I do.

17 Q. And the response is that D6.2.2.1 has been
18 updated as requested and the eventual response then is
19 this response is assumed to be adequate, correct?

20 A. Yes.

21 Q. So when we go to look at actual Section
22 D6.2.2.1, which is in DEQ Exhibit 6 page 24.

23 A. Which pages was it again?

24 Q. Exhibit 6, page 24.

25 A. 24. Thank you.

1 And I'm there.

2 Q. All right. So do you see the heading D6.2.2.1?

3 A. Yes, I do.

4 Q. And this is about the monitor well construction,
5 completion and development?

6 A. Yes, it is.

7 Q. Okay. So the very last sentence at the very
8 bottom of this page, second line up, says no monitoring
9 wells were completed in the overburden or interburden as
10 no water was found in these units during drilling
11 operations.

12 Then goes on over the next sentence to say,
13 Addendum D5-2 contains the drilling logs and resistivity
14 logs that demonstrate that the overburden and interburden
15 are dry. But as we just looked, Exhibit D -- or Addendum
16 D5-2 doesn't have any information from the TR-1 area?

17 A. No, it doesn't.

18 Q. And this -- this statement would indicate that
19 the overburden is completely dry, wouldn't it?

20 A. For all intents and purposes, yes.

21 Q. And that's contrary to what you stated here
22 today, that the overburden in the TR-1 area actually does
23 have significant amount of groundwater?

24 A. Yes.

25 Q. So, Mr. Kristiansen, the last thing I want to

1 direct your attention to is on the screen here. And this
2 is from -- see, I'm going to see if I can go full screen
3 and still change pages. Yes, I can. All right.

4 So as you can see, this is the DEQ's rules and
5 regulations from the Land Quality coal [sic]. And this is
6 from Chapter 2, which is specifically entitled Permit
7 Application Requirements For Surface Coal Mining
8 Operations, and there's a Section 4, Other Baseline
9 Requirements. Do you see that?

10 A. I see it.

11 Q. And so in Subpart A of this document it states
12 that a permit application requires description of the
13 lands to be affected within the permit area, and then
14 states that this description must include, and then it
15 goes through a series of (i), (ii), (iii) -- Romanette 1,
16 2, 3 -- naming off the information that needs to be
17 included as to the lands, correct?

18 A. Would that be the next page where they name all
19 those?

20 Q. So you can see where the mouse is. I'll use the
21 laser pointer.

22 A. Okay.

23 Q. After Section A it says this information must
24 include --

25 THE REPORTER: You're going to have to slow

1 down.

2 MR. GREGERSEN: I apologize.

3 Q. (BY MR. GREGERSEN) So subsection A says the
4 information as to the affected lands, and it must include,
5 and then it starts going through a list where the first is
6 (i), the second is (ii) --

7 A. There we go. Yes.

8 Q. And so each one of those subsections is actually
9 information that's required to be in the permit
10 application, correct?

11 A. Yes.

12 Q. So if we go down to (viii), which is highlighted
13 on the screen there --

14 A. Uh-huh.

15 Q. -- and this is information must be included as
16 to the land, then it says for the proposed permit area and
17 by extrapolation adjacent areas, characterization of the
18 geologic strata down to and including the deeper of either
19 the strata immediately below the lowest coal seam to be
20 mined or any aquifer below the lowest coal seam to be
21 mined, which may be adversely impacted by mining.

22 And it says this information shall include a
23 statement of the results of test borings or core samples
24 which have been collected and analyzed to show, and it
25 says the location of any groundwater.

1 But as we just discussed, those logs that are in
2 Addendum D5-2 don't include any information from the TR-1
3 area, and so they can't show any groundwater in that area,
4 can they?

5 A. At this point, no.

6 Q. Okay. And so with that and with your testimony
7 that there actually is groundwater in the TR-1 area, this
8 requirement hasn't been met, has it?

9 A. Not yet it has not, no.

10 Q. Okay. And so without meeting this requirement,
11 the permit application cannot be accurate and it cannot be
12 complete, can it?

13 A. Can be complete based on the information that we
14 examined in and around this area.

15 Q. But it cannot be accurate if it doesn't include
16 this required finding?

17 A. It's not accurate yet in that area.

18 MR. GREGERSEN: Okay. Thank you. I don't
19 have any further questions.

20 CHAIRMAN BAGLEY: Thank you.

21 Ms. Anderson.

22 MS. ANDERSON: Yeah. Can I get the little
23 adapter for the projector?

24 MR. GREGERSEN: Yeah.

25 MR. RUBY: Next time you need that thing,

1 Shannon, give me a holler.

2 MS. ANDERSON: Oh, okay.

3 MR. RUBY: I'll save you from tripping over
4 stuff.

5 CROSS-EXAMINATION

6 Q. (BY MS. ANDERSON) Okay. Good morning,
7 Mr. Kristiansen.

8 A. Good morning.

9 Q. I'd like to start off with a clarifying question
10 from your testimony yesterday --

11 A. Okay.

12 Q. -- that you provided.

13 I think I heard you say that "currently" the
14 company plans to do highwall mining. Have you had any
15 conversations with the company indicating that they might
16 not start out with a highwall mine?

17 A. Not at this time.

18 Q. Not at this time.

19 Okay. In your testimony yesterday you stated
20 that you started working for DEQ in May 2013, correct?

21 A. Yes.

22 Q. And that you started reviewing pre-permit
23 submittals from the company around that time, right?

24 A. I did.

25 Q. So this permit application review is one of the

1 first jobs you had at DEQ, right?

2 A. I did.

3 Q. You also stated yesterday that you'd reviewed
4 10 to 12 other coal mine permits since you started DEQ in
5 2013. Were those amendments and renewals or new permits?

6 A. Those were all amendments and renewals and major
7 revisions.

8 Q. Okay. 10 to 12 seems like a lot of work to fit
9 in while you were doing review for this permit. Did you
10 ever have any trouble balancing the workload?

11 A. No. I generally don't because the -- this --
12 the distance in space of time we generally have is enough
13 to be able to get all the work done in that particular
14 time period.

15 Q. Okay. You also stated yesterday that the
16 technical review for the permit application by DEQ took a
17 year and a half, right?

18 A. Uh-huh.

19 Q. So it didn't take twice that long, three years,
20 as stated in the company's prehearing memo?

21 A. That's the entire permit application process.
22 Probably wasn't clear yesterday when all but one item had
23 been resolved, essentially, in the year and a half.

24 Q. Okay.

25 A. And there was one left.

1 Q. You've talked a lot about the review process in
2 the last couple of days, but you haven't talked about the
3 statutory deadlines for that review process. Can you
4 explain those to me?

5 A. Well, the first statutory deadline, once we
6 declare the permit complete, is to analyze the technical
7 adequately. That's 150 days. We get that 150 days to
8 complete analysis and generate comments and observations
9 and questions for the document itself, which we then send
10 to the operator. And it is then their responsibility to
11 answer those comments and give us the information we're
12 asking for. They have no deadline in doing that.

13 Q. Okay. Did you ever feel any time pressure
14 related to your review or the review of your colleagues
15 related to the permit application giving those statutory
16 deadlines --

17 A. At times --

18 Q. -- DEQ has to meet?

19 THE REPORTER: I'm sorry?

20 THE WITNESS: At times I did.

21 Q. (BY MS. ANDERSON) Mr. Kristiansen, I have up on
22 the screen our Exhibit 55, which is email from you to some
23 of your colleagues. Do you remember writing this email?

24 A. I do.

25 Q. Would you agree that this email is from you to

1 your other colleagues at DEQ about the Round 4 comment
2 period?

3 A. Yes.

4 Q. Okay. And would you agree that in this email
5 you say the comment period is 30 days, correct?

6 A. Correct.

7 Q. Okay. And that included the Christmas holiday
8 period, correct?

9 A. It did, yes.

10 Q. Okay. Did the company have any deadlines on
11 their end to reply back to DEQ?

12 A. No, they did not.

13 Q. Okay. And so all the deadlines fell on DEQ, not
14 the company?

15 A. Yes, they do.

16 Q. Okay. Did you ever pressure other DEQ staff to
17 make decisions or -- I shouldn't just say DEQ staff, but
18 other staff to make decisions regarding the permit
19 application?

20 A. No, I did not.

21 Q. Okay. I have up on the screen with me
22 Exhibit 59 from our exhibits. Are you familiar with this
23 email?

24 A. I am.

25 Q. Okay. And would you agree that this email is

1 from you to Andrew Kuhlmann about the permit review
2 process?

3 A. I do.

4 Q. Okay. And would you agree that you're
5 expressing concern about not having a decision from the
6 Attorney General's Office and concerns about your ability
7 to meet deadlines related to your review process?

8 A. This was not actually a concern.

9 Q. Okay. You state that WWC was calling hourly.
10 Is this typical of a permit applicant?

11 A. This was actually an overexaggeration of the
12 time frame involved, more humorous than anything else.

13 Q. Okay. Did you ever feel under pressure from the
14 company and its political connections?

15 A. I never have.

16 Q. Did you know the company was at times in
17 communication with the governor and his staff?

18 A. I do understand that.

19 Q. Okay. Would you say you were upset when the
20 objections to the permit were filed?

21 A. I wouldn't use the word "upset."

22 Q. All right. What was your reaction?

23 A. I guess one of questioning as to exactly what
24 had been undertaken and what some of the consequences
25 might be.

1 Q. Okay. I have up on the screen now our
2 Exhibit 89. Do you remember this email conversation
3 between you and some of your colleagues at DEQ? This is
4 the part you wrote down at the bottom?

5 A. I do basically remember, yes.

6 Q. Okay. Do you still think the objections are, in
7 your words at the time in this email, designed to slow the
8 permitting process significantly to dishearten Ramaco and
9 LQD and foster a sense of hopelessness?

10 A. I no longer --

11 THE REPORTER: I'm sorry?

12 THE DEPONENT: I no longer believe that.

13 Q. (BY MS. ANDERSON) You no longer believe that.
14 Why did you believe that at the time?

15 A. I felt at that point in time I was a little
16 irritated and wrote some things that were not appropriate.

17 Q. Okay. So after having a chance to review the
18 objection letters in greater detail perhaps than you did
19 when you wrote this email --

20 A. Correct.

21 Q. -- did you think of any -- any of the objections
22 raised were worth considering?

23 A. Yes, I did.

24 Q. Okay. I guess when you wrote this email, why
25 were you concerned about commenters disheartening Ramaco?

1 A. I honestly don't know what I meant at that time.

2 Q. Okay. Were you worried about how the comment
3 process would affect the company and their ability to get
4 a permit?

5 A. No, I wasn't.

6 Q. I guess, in part, Mr. Kristiansen, I'm just
7 wondering how we can take your testimony seriously today
8 if at the time, at least, you viewed our comments and the
9 comments of our members and others citizens in the process
10 with such distaste.

11 A. Well, I have since changed my attitude on that.

12 Q. Okay. How do you plan to address the comments
13 and objections raised through the permitting process?

14 A. Which comments are you referring to?

15 Q. The objections.

16 A. The objections?

17 Q. How is DEQ considering them? How have you
18 considered them over the last few months? Will you plan
19 to consider them?

20 A. We're still in the process of evaluating that.

21 Q. So you can't tell me what parts of what
22 objections are going to be reviewed by the agency
23 incorporated somehow into your decision-making process?

24 A. Not right now I can't, no.

25 Q. When are those decisions made?

1 A. It will be made sometime in the future. We get
2 a better sense of the direction of what we're going to be
3 doing after this hearing.

4 Q. So is it within that 15-day period in the
5 statute between when the council issues their decision and
6 DEQ then has to issue or deny the permit?

7 A. We will work within that time period to satisfy
8 all the conditions we can.

9 Q. In that 15 days?

10 A. Yes.

11 Q. Will the people and entities that submitted
12 comments get a response from the agency at any time?

13 A. I don't know.

14 Q. You don't know. But at this time DEQ isn't
15 planning to respond to any of the commenters or people
16 that submitted objection letters?

17 A. I don't know.

18 Q. Okay. Switching gears a little bit. Did DEQ
19 conduct any of its own studies or reviews to help review
20 the permit application?

21 A. Would you please rephrase that again?

22 Q. Yeah. Did DEQ, the agency, conduct any of its
23 own studies or reviews to help review the permit
24 application or did you just use the data from the company?

25 A. Well, primarily the -- for the application

1 itself, we used the data that was presented.

2 Q. Okay. So DEQ didn't independently conduct
3 baseline samples or something like that?

4 A. No, we did not.

5 Q. Okay. So you relied on what was submitted to
6 you and you just reviewed that, correct?

7 A. We did.

8 Q. Okay. Let's talk for a little bit about your
9 experience. Your resume says you mainly review noncoal
10 mines, right?

11 A. At this point, yes.

12 Q. Okay. Was this the first coal mine permit that
13 you coordinated for DEQ?

14 A. Yes. This will be the first coal mine permit.

15 Q. Okay. Was this the first coal mine permit with
16 underground components that you coordinated for DEQ?

17 A. Yes.

18 Q. Would you agree that the District 3 office of
19 the Land Quality Division doesn't have a lot of experience
20 in permitting coal mine permits with underground mining
21 aspects?

22 A. I would say that's probably an accurate
23 position.

24 Q. In fact, this is the first highwall mining
25 permit that District 3 has permitted, right?

1 A. Yes.

2 Q. Okay. Mr. Kristiansen, have you had a chance to
3 review Fisher Exhibits 21 through 23? Yeah, they won't be
4 in front of you.

5 A. Okay.

6 Q. And this is Exhibit 21 on the screen. Do you
7 remember this email that you wrote to some of your
8 colleagues?

9 A. I do.

10 Q. Okay. Would you agree that this email shows
11 that you personally did not have experience in permitting
12 a highwall mine?

13 A. Yes.

14 Q. Okay. And you were relying on some of your
15 colleagues and other district offices to help guide you?

16 A. I did.

17 Q. And we have to ask, why did you see your role as
18 needing to help Ramaco "craft" their permit application?

19 A. Rephrase that again.

20 Q. You have in your email here that you were
21 helping the company craft their permit application. Why
22 did you see that as their role -- as your role at DEQ?

23 A. One of our roles is to assist the company with
24 information as to legality of the -- of the plans that
25 they have, statutes, rules and regulations. We also guide

1 them towards our guidelines to help them with their
2 program. And so we -- a lot of cases is a -- as a source
3 of information for the mining company to form the permit
4 application appropriately.

5 Q. Okay. And did the company come to you and ask
6 you at DEQ to provide some information to them about what
7 should be in a subsidence control plan?

8 A. They did not.

9 Q. So you were just reaching out to your colleagues
10 on your own or --

11 A. I was.

12 Q. Okay. So at no time did the company ask you at
13 DEQ about the subsidence control plan and what should be
14 in it?

15 A. No, they did not.

16 Q. Okay. Given that you and the Land Quality
17 Division District 3 office don't have any highwall mines
18 yet, have you developed any new policies or procedures for
19 inspection and enforcement of this kind of mine?

20 A. We have not.

21 Q. In your testimony yesterday you mentioned the
22 amount of coal that is to be left underground to help
23 prevent subsidence. Do you remember that part of your
24 testimony?

25 A. I do.

1 Q. How will you and your DEQ colleagues inspect the
2 mine to make sure that is the case?

3 A. In our monthly inspections we do a mine-wide
4 inspection of facilities in cases. Sediment control
5 ponds, there are lots of ancillary pieces of information
6 that are within the mine permit area. We also, in this
7 particular mine, will get into those areas where the
8 panels are being developed and look for surface subsidence
9 physically.

10 Q. Okay. So you'll kind of walk along the
11 surface --

12 A. Correct.

13 Q. -- and look for subsidence?

14 A. Correct.

15 Q. But how you will independently verify the
16 amounts of coal that are being left in the ground?

17 A. I can't verify that.

18 Q. Okay.

19 A. I have to rely on production reports.

20 Q. You'll rely on the production reports.

21 A. Yes.

22 Q. How do you -- do you compare that to the amount
23 of reserves, or how do you know that that amount is being
24 left in the ground?

25 A. We could compare that to reserves, if necessary.

1 We have to accept the information that we get as being
2 valid and forthright.

3 Q. Okay. So there's no way, that you know of, for
4 DEQ to -- to make sure what you said yesterday, this
5 important part of the permit is being complied with?

6 A. Correct.

7 Q. Okay. On the topic -- topic of inspection
8 enforcement, you testified yesterday that DEQ utilizes the
9 mine plan to enforce the permit, correct?

10 A. Correct.

11 Q. So would you agree that you would have
12 difficulty in enforcing the mine plan if it was too vague
13 or left something too important out?

14 A. Yes, it would.

15 Q. At various times the company has said the rules
16 in the statutes are the only thing to focus on and
17 improve -- in approving permit application. But wouldn't
18 you agree that the rules in the statute need
19 interpretation and application based on professional
20 experience and background?

21 A. Yes.

22 Q. Don't you feel you use your professional
23 judgment at times to require this or that in the permit
24 application?

25 A. I do at times, yes.

1 Q. And to do that, you have to rely on scientific
2 principles or standards or best industry practices?

3 A. The best I can, yes.

4 Q. Okay. Let's switch a little bit to subsidence.
5 Yesterday you testified that you considered some of the
6 Chapter 7 rules in the scope of your review of the permit
7 application. That's correct?

8 A. Yes.

9 Q. Okay. I have on the screen our Exhibit 24,
10 which is the DEQ response to our first set of
11 interrogatories in the discovery for this proceeding.
12 Were you a part of -- in preparing the answers that DEQ
13 provided to us?

14 A. Would you scroll back up again, please?

15 Q. Yeah. Sure.

16 A. Now go ahead and scroll.

17 Q. Okay.

18 A. Thank you for that.

19 Q. Sure. Sorry. Just give me a moment while I
20 find the right part here.

21 A. That's okay. That's enough. I did assist in
22 the drafting of this particular document.

23 Q. Okay. Great.

24 All right. Do you see Interrogatory Number 11
25 on the screen now?

1 A. I do.

2 Q. Okay. And would you agree that this is a
3 question that we raised about the notice provisions
4 related to this permit?

5 A. Correct.

6 Q. Okay. And would you read the response provided
7 by DEQ to this question.

8 A. "The public notice requirements in Chapter 7,
9 Section 3 is only applicable when an underground coal mine
10 will be permitted. The Brook Mine is a surface coal mine,
11 therefore the public notice requirements in Chapter 7,
12 Section 3 are not appropriate."

13 Q. Okay. Would you -- would you still agree with
14 that statement?

15 A. I do.

16 Q. Okay. So Chapter 7 of the rules and regulations
17 aren't applicable here?

18 A. I can't fully answer that, because I don't have
19 Chapter 7 in front of me.

20 Q. Chapter 7 relates to underground mine permits
21 and their requirements thereof. Would you agree with
22 that?

23 A. Yes. We only use --

24 MR. KUHLMANN: Objection.

25 MS. ANDERSON: Okay.

1 MR. KUHLMANN: He just said he doesn't have
2 it in front of him.

3 MS. ANDERSON: Okay. That's fine.

4 Q. (BY MS. ANDERSON) All right. Let's see. Did
5 DEQ review or use any rules applicable to auger mining and
6 its review of the permit application?

7 A. We did.

8 Q. Okay. Are you aware that the permit application
9 refers to this type of mining as auger mining?

10 A. I am.

11 Q. Okay. So would you agree that the requirements
12 related to auger or underground mining are applicable
13 here?

14 A. They are.

15 Q. Okay. On this subsidence control plan
16 specifically, could you tell me what you believe the
17 purpose of a subsidence control plan to be?

18 A. Primarily determining areas that may have
19 concerns about subsidence in the future, during mining
20 process, and attempting to build potential mitigation
21 based on that.

22 Q. Okay. And what do you base that opinion on?

23 A. Primarily based on some of the past practices of
24 taking place in the highwall mining areas of eastern part
25 of the United States, some of the information I was able

1 to look up and based on some of the applications that have
2 taken place in other parts of the state.

3 Q. Okay. Anything specific in Wyoming rules or
4 regulations about this?

5 A. I can't remember right off the bat, no.

6 Q. All right. What technical and scientific
7 standards must a subsidence control plan meet in your
8 opinion?

9 A. I'm not expert enough to actually answer that
10 question.

11 Q. But you were the only one from DEQ that reviewed
12 the subsidence control plan, correct?

13 A. Correct. Correct.

14 Q. Okay. Did you seek out help from any of your
15 colleagues who might have more expertise than you did?

16 A. I did not.

17 Q. Why not?

18 A. At that point in time I didn't have any
19 colleagues that were more expert in our particular
20 district.

21 Q. Okay. How about other districts?

22 A. They were available, and I did not use them.

23 Q. You didn't use them?

24 A. I did not use them.

25 Q. Okay. Did you reach out to the office of

1 surface mine and reclamation enforcement or any other
2 agency in helping you review the subsidence control plan,
3 given your lack of expertise?

4 A. I did ask them one question.

5 Q. Okay. Do you remember when that question was?

6 A. I wanted to know what the compressive strength
7 for coal in the western United States would be classified
8 as.

9 Q. Okay. All righty. So if you're not sure what
10 technical and scientific standards must be met in the
11 subsidence control plan, how did you deem the subsidence
12 control plan technically adequate?

13 A. Based on the narrative, it matched --

14 THE REPORTER: I'm sorry. It matched --

15 THE WITNESS: It matched the learning that
16 I gained in my subsidence control class that I took from
17 OSM. And so I was able to at least judge the narrative
18 itself as being straightforward and accurate as I could
19 estimate.

20 Q. (BY MS. ANDERSON) Okay. Mr. Kristiansen, are
21 you familiar with the term "planned subsidence"?

22 A. I am.

23 Q. Okay. In going back to those regulations in
24 Chapter 7, are you familiar with notice provisions
25 required for subsidence?

1 A. Vaguely. I only read it once.

2 Q. Did you or, to your knowledge, any of your
3 colleagues at DEQ consider whether those notice provisions
4 were applicable to the mine here?

5 A. I can't remember.

6 Q. Okay. Do you know whether planned subsidence is
7 part of the permit application?

8 A. It is not.

9 Q. Okay. Would you agree that the permit
10 application says that subsidence, planned or unplanned, is
11 unlikely to occur?

12 A. Yes, it is.

13 Q. Okay. Anywhere in the permit boundary?

14 A. Yes.

15 Q. Okay. Does the plan say that there will be a
16 chance of pillar collapse?

17 A. I don't remember.

18 Q. You don't remember.

19 All right. How about roof collapse?

20 A. Again, I don't remember it specifically
21 mentioned.

22 Q. Don't remember.

23 Okay. How about mine floor failure?

24 A. Again, I don't remember.

25 Q. Okay. I guess I don't know if I should even ask

1 this, but did you do any analysis to confirm any of those
2 findings?

3 A. I examined the information that presided both --
4 presented in both D5 to geology and overburden, as well as
5 the mine plan --

6 Q. Okay.

7 A. -- subsidence plan.

8 Q. You didn't do any specific analysis of pillar
9 collapse, roof collapse, mine floor failure?

10 A. I did not do an analysis.

11 Q. How can you have any confidence that subsidence
12 isn't likely within this permit?

13 A. Based on the components that I learned from the
14 OSM class, given the conditions of the highwall mine and
15 the nature of the webs and pillars, the information that I
16 gained stated that it would not be a subsiding mine.

17 Q. Okay. Mr. Kristiansen, I have on the screen now
18 our Exhibit 54. Do you recall this email that you wrote
19 to your colleague Matt Kunze?

20 A. I do.

21 Q. Okay. Would you agree that this email -- that
22 this exhibit is a copy of the email between you and a
23 colleague about the permit area?

24 A. Yes.

25 Q. Would you agree that you have some professional

1 experience in the mining area?

2 A. I do.

3 Q. And based on that experience, would you agree
4 there has been a history of subsidence problems in the
5 area?

6 A. There has.

7 Q. And with that history in mind, why were you not
8 more concerned about the prospect for subsidence at this
9 mine?

10 A. They're completely different kinds of mining
11 processes, and the mines that subside in that area are
12 planned subsidence mines.

13 Q. Okay. The historic mining was planned
14 subsidence?

15 A. Yes, it was.

16 Q. Okay. All right. I'm going to have you pull
17 out Exhibit 12, page 145. I'll display it up here too,
18 but -- it's the mine plan. It's a relatively big map.
19 Let's see if I can get it --

20 A. Ah.

21 MS. ANDERSON: I know these things must be
22 really hard on your little iPads, so trying to get it a
23 little more --

24 A. Okay.

25 Q. (BY MS. ANDERSON) Okay. This is a busy map.

1 Would you --

2 A. Yeah.

3 Q. Yeah. Would you agree that it generally depicts
4 areas of proposed trench in a highwall mining?

5 A. It does.

6 Q. Okay. And that it shows areas of historic
7 mining in the area?

8 A. It does.

9 Q. Okay. And in some cases proposed mining will be
10 quite close to those areas of historic mining?

11 A. Yes, it is.

12 Q. Okay. Let's take the old Carney Mine Number 44.

13 A. Okay.

14 Q. Do you see that on the map?

15 A. I do.

16 Q. Okay. Was that an underground mine?

17 A. It was.

18 Q. Do you know the status of that mine and whether
19 it's fully reclaimed?

20 A. Mine is -- has not been operated for decades.

21 And there has been no reclamation other than surface
22 reclamation performed by Big Horn Coal in some of those
23 areas. And the mine was pre SMCRA, so it was never
24 reclaimed.

25 Q. Okay. Are you familiar with any Abandoned Mine

1 Lands program work at that mine site?

2 A. I am not familiar with the AML work, no.

3 Q. Okay. Do you see Acme Number 3 mine on that
4 map?

5 A. I can't actually read that well enough.

6 Q. Yeah. I'm sorry.

7 A. I'm sorry. Maybe I need to get the map.

8 Q. Yeah, you might want to look at the bigger
9 version, but --

10 A. It's actually in -- I don't remember where that
11 map is exactly. Do you remember? Can't read this.

12 Q. Yeah, it's DEQ Exhibit 12, which is the mine
13 plan.

14 A. Right.

15 Q. It's page 145.

16 A. Okay. There we go. Thank you.

17 Q. Okay.

18 THE WITNESS: Joe, I did it to you again.

19 I'm sorry.

20 A. Okay. Which mine did you want --

21 Q. (BY MS. ANDERSON) Okay. Acme Number 3.

22 A. Acme Number 3. Do you have a general location?

23 I'm not familiar with that one. Nope, there it is.

24 Q. Yeah, near Acme.

25 COUNCIL MEMBER BAUMER: Can you help us?

1 I'm -- can you --

2 Q. (BY MS. ANDERSON) Yeah, maybe --

3 Mr. Kristiansen, if you could just maybe hold it up and
4 point to the council where that is?

5 THE WITNESS: It's this area right here.

6 COUNCIL MEMBER BAUMER: Thank you.

7 Q. (BY MS. ANDERSON) And was that an underground
8 mine?

9 A. It was.

10 Q. Okay. Do you know the status of that mine and
11 whether it's fully reclaimed?

12 A. Again, this was a mine pre-SMCRA, so it was
13 never reclaimed.

14 Q. Are you familiar with any Abandoned Mine Lands
15 Program work at that mine site?

16 A. Yes. Abandoned Mine Lands have done work in
17 that particular area, as well as the -- some of the Carney
18 areas.

19 Q. Do you see Acme Number 2 on that map? And if
20 you can point out to the council that would be helpful
21 too.

22 A. Here it is. I do see that. That's this one
23 right here.

24 Q. Okay. Great. Was that an underground mine?

25 A. It was.

1 Q. Okay. And would you agree that this map shows
2 that Acme Number 2 mine and the proposed highwall mining
3 by Brook will overlap --

4 A. Yes, they do.

5 Q. -- to some degree.

6 And the same Acme Number 1 mine, also on this
7 map.

8 A. Yes, they will. Number 1 -- thank you. I
9 appreciate that.

10 Q. You can be a professor.

11 A. Number 1 mine is here.

12 Q. Okay. So Acme Number 1, so there is an overlap
13 between what the proposed mining and the old mine Acme
14 Number 1?

15 A. Yes.

16 Q. Okay. And do you know the status of Acme Number
17 1 and Acme Number 2 mines and whether they're fully
18 reclaimed?

19 A. Much of the areas have been reclaimed
20 sufficiently by AML programs.

21 Q. Okay. Are they active in all sites at this
22 time?

23 A. I don't know.

24 Q. You don't know. Okay. Given the presence of
25 these historic mines, did you consult with your colleagues

1 in the AML division about the permit application?

2 A. I did not.

3 Q. You did not. Okay.

4 So I take it you didn't ask them about the
5 status of reclamation and AML work in the area?

6 A. I did not.

7 Q. Okay. Do you know if Brook or any of its
8 consultants were in contact with the AML division staff?

9 A. I don't know.

10 Q. You don't know. Okay.

11 I have to admit I'm having a hard time with
12 this, Mr. Kristiansen. Given this area was mined out
13 through any number of mining operations over a period of
14 time, why didn't you reach out to the AML staff about this
15 proposed permit?

16 A. The coals being mined are two different coal
17 beds, separated by 70 feet of interburden, and so at that
18 time we didn't believe that was sufficiently serious to
19 warrant --

20 THE REPORTER: I'm sorry. I can't hear
21 you.

22 A. Okay. These are underground mines. They mined
23 different coal beds than the highwall mine will mine. So
24 there is a separation between those coals that were mined
25 historically underground and the highwall mine. And so we

1 did not believe at that time that most of that information
2 was germane to this particular permit application.

3 Q. (BY MS. ANDERSON) Okay. Did you do analysis of
4 whether blasting at the Brook Mine could have an impact on
5 any of these AML sites, for instance?

6 A. I did not. I am not the blasting expert.
7 Mr. Doug Emme, my associate, is.

8 Q. Okay. Did you have -- do any analysis of
9 whether subsidence caused by any of that historic mining
10 could have a relationship at all to the proposed mine?

11 A. I did not.

12 Q. No. Okay. One last question on these AML
13 sites. How did DEQ, in the scope of its review of the
14 permit application, work in conditions of approval or
15 other language into the permit to address how to determine
16 liability from subsidence or impacts to structures or the
17 land from this mine versus other mines in the area?

18 A. Would you break that down, please.

19 Q. Yeah. It's a little bit longer question. But
20 what I'm getting at here, Mr. Kristiansen, is so you've
21 admitted there's an overlap --

22 A. Yes.

23 Q. -- at least in some areas --

24 A. Yes, there is.

25 Q. -- between historic mines and current mines --

1 and the proposed mine.

2 So if you saw subsidence when you were out on
3 one of your inspections you were talking about on the
4 surface, how would you know what mine caused that
5 subsidence?

6 A. There will be a pre-mining survey of the surface
7 above all panel areas, which is committed to in the mining
8 plan.

9 Q. Okay.

10 A. These pre-surveys will locate any existing
11 subsidence that exists at that point in time.

12 Q. Okay. So even if there's -- maybe the
13 subsidence was caused by Acme Number 1, for instance, but
14 if it's post permit for Brook, Brook would still be liable
15 for that cleanup. Is that what you're saying?

16 A. No, they would not. If it's not Brook's
17 subsidence, they will not be responsible.

18 Q. But how do you know it's Brook's subsidence?

19 A. We will have to do our best to ascertain that.

20 Q. How will you do that?

21 A. At this point in time I can't answer that.

22 Q. Okay. All right. Are you aware of special
23 regulations that address when surface mining will be close
24 to underground mines?

25 A. Yes, I do.

1 Q. Okay.

2 A. I can't quote them verbatim, but I'm aware of
3 them.

4 Q. Okay. That's fine. That's all I need. Would
5 you agree those regulations exist because there can be
6 impacts that result when surface mining is close to
7 underground mining?

8 A. Yes.

9 Q. Okay. You mentioned in your testimony that you
10 took a course from the Office of Surface Mining, or OSM,
11 on subsidence, correct?

12 A. Uh-huh.

13 Q. Okay. And remind me what -- when you took that
14 course.

15 A. That was in the spring of 2015.

16 Q. Okay. So was it a little ways into the permit
17 application?

18 A. It was.

19 Q. At that point had you started already reviewing
20 the subsidence control plan or --

21 A. That's one of the reasons I took the class.

22 Q. Okay. Would you agree that the course materials
23 and the references they use provide technical and
24 scientific standards for the assessment and prevention of
25 subsidence?

1 A. They do have some, yes.

2 Q. Does the subsidence control plan meet those
3 standards?

4 A. To the best of my ability, yes, they do.

5 Q. In what way?

6 A. Narrative standard that is -- that is utilized
7 in the permit application, generally meets a lot of
8 requirements that are general in some of the subsidence
9 estimation of -- of the highwall mines.

10 Q. Okay. I have up on the screen our Exhibit 84,
11 which is the complete version of the course materials
12 provided back from OSM to you. Would you agree with that?
13 Or have you had a chance to look at our Exhibit 84?

14 A. I can't -- no.

15 Q. Okay. That's fine. Do you -- I don't think
16 Chapter 1 was part of the DEQ exhibits for this hearing;
17 is that correct?

18 A. I don't remember.

19 Q. You don't remember.

20 Do you remember Chapter 1 from the course that
21 you took at --

22 A. I do.

23 Q. -- OSM?

24 You do?

25 A. I do.

1 Q. Okay. I'm turning to page 15 of that chapter.
2 And would you agree that this page depicts some highwall
3 mine operations that OSM talked about in its course
4 materials?

5 A. It does.

6 Q. Okay. Would you read the last sentence on that
7 page, please?

8 A. "Surface subsidence potential does exist in
9 spite of low mining recovery because of faster
10 deterioration of narrow ribs left in-place between auger
11 holes."

12 Q. Do you agree with that statement?

13 A. I do.

14 Q. And did you evaluate that statement in the
15 context of the Brook Mine?

16 A. I did.

17 Q. You did. How did you do that?

18 A. I evaluated the mine plan methodology is not
19 auger mining; therefore, it doesn't apply.

20 Q. Okay. But isn't this page about highwall mining
21 specifically?

22 A. It is about practice of highwall mining and the
23 example of auger mining is utilized there is not what's
24 going to occur at the highwall mine Brook is going to
25 have.

1 Q. Okay. But doesn't the mine plan talk about
2 auger mining?

3 A. It does in a general sense.

4 Q. In a general sense.

5 It says it's similar to highwall, correct?

6 A. They establish the same basic extraction point.

7 Q. Okay. All right. I'm going to turn to another
8 page in this exhibit. It's page 120 of the PDF. It's
9 start of Chapter 9 of the OSM course materials. Do you
10 remember this chapter from your course at OSM?

11 A. I do.

12 Q. You do?

13 A. I do. Yes.

14 Q. Okay. Did you review this chapter in the
15 context of Brook Mine application?

16 A. I believe I did.

17 Q. You believe you did. All right. Did you notice
18 that Dr. Jerry Marino's research is referenced in this
19 chapter of materials from OSM?

20 A. Yes, I did.

21 MS. ANDERSON: Okay. And just for the
22 record, it's pages 123 to 134. There's some tables and
23 charts references there.

24 Q. (BY MS. ANDERSON) So a moment ago you mentioned
25 that these materials from OSM are helpful to provide some

1 standards for the assessment and prevention of subsidence.

2 Would you agree that Dr. Marino's research referenced in

3 the materials provides those standards too?

4 A. These particular materials? Yes.

5 Q. Yes. Okay.

6 Have you reviewed Dr. Marino's report and CV

7 related to this hearing?

8 A. I read over it briefly, yes.

9 Q. Okay. So you mentioned earlier today that you

10 relied largely on the company because Cardno has more

11 experience than you in subsidence, correct?

12 A. Yes.

13 Q. But you also agree that Dr. Marino has more

14 experience than you --

15 A. I don't know.

16 Q. -- in subsidence?

17 You don't know?

18 But you looked at his report --

19 A. I have.

20 Q. -- and CV?

21 A. I have.

22 Q. And you know that his materials are mentioned

23 here in the OSM course?

24 A. Yes, they are.

25 Q. Okay. So you can't tell me whether you think he

1 has more experience than you in subsidence?

2 A. I assume he does.

3 Q. You assume he does. Okay.

4 Okay. Back to Chapter 9. There's a lot of math
5 in here. Are you familiar with all these formulas? And
6 you don't have to go over them one by one, but I'll pull a
7 few up here.

8 A. Okay. I am familiar with looking at these
9 formulas.

10 Q. Okay. Do you have any professional background
11 or experience in using the formulas in Chapter 9?

12 A. I do not.

13 Q. Okay. Did you check to see whether any of these
14 formulas were in the subsidence control plan?

15 A. I looked at the subsidence control plan, and I
16 don't remember specifically if this formula was there.

17 Q. Okay. Or any of the other formulas in
18 Chapter 9?

19 A. I don't remember specifically if they're there
20 or not.

21 Q. Okay. Did you independently run through any of
22 the formulas to double-check the company's work?

23 A. I did not.

24 Q. Okay. Yesterday you mentioned that DEQ would do
25 their own modeling runs for hydrology to check the

1 company's work. Why didn't you feel the need to do the
2 same for subsidence?

3 A. We don't have the expertise in that area that we
4 do in hydrology.

5 Q. Okay. So to be honest here, you don't have the
6 technical background to do review of this kind of work?

7 A. Based on the requirements of mine plan, I had
8 enough information to be -- to assess the narrative of the
9 mine plan.

10 Q. Okay. But you wouldn't say you have
11 expertise --

12 A. I would not --

13 Q. -- in this area?

14 A. -- say I'm an expert, no.

15 Q. Okay. Besides the OSM materials, what other
16 sources did you use to determine the standards for the
17 subsidence control plan and assess subsidence risk of the
18 permit?

19 A. Primarily those are the basic tools that I
20 utilized to -- to analyze the narrative.

21 Q. Okay. So just the OSM materials?

22 A. Yes.

23 Q. Okay. Let's go back to the subsidence control
24 plan. It was prepared by a company called Cardno, right?

25 A. Yes. Yes, it was.

1 Q. Okay. And we haven't heard much about them.

2 And they don't appear on the witness list. Who are they?

3 A. As far as I know, they're an engineering
4 consulting firm spread around the world that does work in
5 underground coal mining.

6 Q. Okay. They're a big company. Who at Cardno
7 prepared the subsidence control plan?

8 A. I don't know.

9 Q. You don't know.

10 Did you review any of their CVs or professional
11 or educational backgrounds?

12 A. I did not.

13 Q. Okay. So how can you know for sure that they
14 have more experience and expertise than you do?

15 A. Primarily based on the work that they do is
16 significantly different than most of the work I do.

17 Q. Okay. So it was a judgment call?

18 A. Yes.

19 Q. Okay. And we've -- I think we've established
20 this, but just to confirm, you haven't independently
21 verified any of the results from Cardno?

22 A. I have not.

23 Q. Okay. So you didn't conduct any compression
24 strength tests?

25 A. I did not.

1 Q. Okay. Did DEQ conduct any other geotechnical
2 studies related to subsidence risk?

3 A. We did not.

4 Q. Did you even speak directly with anyone at
5 Cardno about their findings?

6 A. I did not.

7 Q. Have you done any long-term pillar design
8 analysis before?

9 A. I have not.

10 Q. Have you done any long-term mine roof design
11 analysis before?

12 A. I have not.

13 Q. Have you done any long-term mine floor design
14 analysis before?

15 A. I have not.

16 Q. Having not done any of these analyses, how can
17 you have confidence that unplanned subsidence is unlikely
18 and thus approve the submitted subsidence control plan?

19 A. Based on the information I did have, the
20 narrative I did see, that was a logical conclusion.

21 Q. Okay. So we heard a bit yesterday about a
22 driver's license creating minimum standards. Would you
23 give someone a driver's license without any test if they
24 just told you they could drive?

25 MR. KUHLMANN: Objection. Speculative.

1 MS. ANDERSON: Okay. That's fine. It's
2 withdrawn.

3 Q. (BY MS. ANDERSON) Would you agree that
4 additional geotechnical studies are necessary before the
5 company can start mining?

6 A. No, I don't.

7 Q. You don't.

8 So they're not planning to do any additional
9 geotechnical studies that you know of?

10 A. They are planning on beginning a geotechnical
11 exploration program when they begin to develop the --

12 Q. When they begin the develop the --

13 A. Prior to the -- right.

14 Q. And will those studies be available for public
15 notice and comment?

16 A. As far as I know, yes.

17 Q. As far as you know, yes.

18 How do you know that?

19 A. This is the kind of baseline information that we
20 utilize for validation during annual reports. And this
21 information may be made known in annual report, which is a
22 public document.

23 Q. Okay. And so DEQ will ask questions during the
24 annual report review process related to those technical
25 studies?

1 A. Yes, it will.

2 Q. And will you approve them prior to mining, or
3 how will you --

4 A. We will evaluate them prior to mining.

5 Q. Okay. Are these studies identified or outlined
6 in the permit application?

7 A. No, they're not.

8 Q. They're not.

9 A. They are -- I got to take a step back.

10 Q. Yeah.

11 A. In a narrative they are committing to taking
12 samples prior to mining each panel.

13 Q. Okay. Has DEQ thought about whether there
14 should be conditions of approval related to these studies?

15 A. I'm not sure what context you're putting that
16 in.

17 Q. Commitments made by the company to do these
18 studies.

19 A. Those commitments are -- once again, it's in the
20 narrative of the mine plan.

21 Q. Okay. Going back to the finding that the
22 company made, and DEQ, yourself, found to be technically
23 adequate that subsidence is not likely to occur at the
24 mine site. This finding is for the entire permit area,
25 correct?

1 A. Correct.

2 Q. Okay. So would you agree that the data and
3 studies have to be complete enough in this permit
4 application to make and support this finding for the
5 entire permit area?

6 A. Yes.

7 Q. Okay. But yet you just said additional
8 geotechnical studies are needed before the company can
9 start mining, right?

10 A. Correct.

11 Q. Okay. Thanks.

12 Would you agree that the subsidence control plan
13 calls for monitoring for a period of six months? Do you
14 remember that --

15 A. I do not --

16 Q. -- in the subsidence control plan?

17 A. -- remember that at this time, no.

18 Q. Okay. Do you know if DEQ considered any other
19 period of time as part of its review?

20 A. We have not set a time at this point, no.

21 Q. Okay. Would you agree that subsidence can occur
22 more than six months after mining?

23 A. It can.

24 Q. Okay. Let's go back to the OSM course
25 materials. And this is from Chapter 2, and it's page 24

1 of the combined PDF that we have in our exhibits.

2 Could you look at the last bullet point there on
3 this exhibit here being displayed. Do you see the heading
4 Elapsed Time?

5 A. I see that.

6 Q. Okay. Would you agree that the first sentence
7 says subsidence does not occur instantaneously but over a
8 period of time?

9 A. Yes.

10 Q. Okay. Do you agree with that statement?

11 A. Yes.

12 Q. And based on your knowledge about subsidence in
13 the area surrounding the Brook Mine, isn't subsidence
14 occurring years, if not decades in some cases, after
15 mining?

16 A. It has.

17 Q. And are you familiar with the requirements in
18 Chapter 7 of the regulations that require reclamation
19 caused by subsidence within five years of mining?

20 A. I don't remember that.

21 Q. Okay. You don't remember that.

22 A. I do not.

23 Q. That's fine.

24 Just, I guess, tell me how DEQ found a six-
25 month subsidence monitoring period to be sufficient for

1 the Brook Mine.

2 A. Monitoring period, specific period, is one that
3 we have to help us with some of our mine inspections. So
4 that gives us the definite standard to start from, and
5 give us -- some of the inspectors an idea of what to look
6 for at that point in time.

7 Q. Okay.

8 A. That's the -- that's where it's being utilized
9 is in that type of context.

10 Q. Okay.

11 A. We may decide that five years is too short.

12 Q. All right. Okay. Let's shift gears a little
13 bit. You provided some testimony about this yesterday
14 and today, so -- but to confirm, are you familiar with the
15 concept of adjacent lands when it comes to the mining
16 permit?

17 A. I am.

18 Q. And would you agree that generally adjacent
19 lands are lands within one-half mile of the permit
20 boundary?

21 A. Yes.

22 Q. Would you agree that adjacent lands are
23 important to know who should get notified for a public
24 comment period?

25 A. Yes.

1 Q. And to assess impacts to water resources.

2 Including alluvial valley floors?

3 A. Correct.

4 Q. And to monitor and inspect for offsite impacts
5 from the mining operation? Are you familiar with offsite
6 impacts and that term?

7 A. I am. I am. That depends upon the nature of
8 the material and how it's defined in the rules and
9 regulations. Some materials do have to be examined, other
10 materials do not have to be, unless impacts are defined.

11 Q. Okay. And would you agree adjacent lands are
12 important to know for -- to assess impacts to wildlife?

13 A. Yes.

14 Q. Okay. Can you think of any other reasons why
15 these adjacent or how you put it yesterday, these very
16 close lands are important to know in the scope of DEQ's
17 review in permitting of a coal mine?

18 A. Can you rephrase that, please?

19 Q. Anything else that you want to tell us about
20 adjacent lands and --

21 A. Other than wildlife, you mean?

22 Q. Other than notification and water resources and
23 offsite impacts and wildlife.

24 A. If -- you're saying offsite impacts to wildlife.

25 Q. Or offsite impacts or wildlife.

1 A. Or wildlife.

2 Q. Yes.

3 A. Okay. Thank you.

4 Q. Sorry.

5 A. I didn't hear the "or."

6 Q. Yeah.

7 A. It depends upon the nature of the mine plan and
8 the nature of the mining condition as to what is going to
9 be affected, what is not going to be affected. If the
10 disturbance is fully within the permit boundary and shows
11 nothing leaving the property, then there are no reasons to
12 analyze adjacent lands for some applications -- for some
13 scientific applications --

14 Q. Okay.

15 A. -- since they will not be influenced or
16 impacted.

17 Q. Okay. Thank you.

18 So let's go back to the alluvial valley floors
19 for a moment. You've testified that you were the lead DEQ
20 staff member assessing alluvial valley floors, correct?

21 A. Correct.

22 Q. Okay. And, in fact, yesterday you testified
23 that it was just you that reviewed the materials in DEQ
24 Exhibit 11, right?

25 A. It was.

1 Q. Okay. You didn't think to consult with your
2 hydrogeologist colleagues at DEQ about that?

3 A. I actually misspoke.

4 Q. Okay.

5 A. There were unitizations of the AVF from
6 Mr. Matt Kunze in his analysis of some other parts of the
7 mining permit.

8 Q. Okay. But did Mr. Kunze go out in the area at
9 all and look at the alluvial valley floors?

10 A. He did. He was with me when we examined the
11 alluvial valley floor in Slater Creek.

12 Q. Okay. So we talked a moment ago about these
13 adjacent lands, and how generally for a permit those lands
14 within one-half mile are assessed for impacts to water
15 resources, correct?

16 A. Uh-huh.

17 Q. Okay. So isn't it true that DEQ in this case
18 did not assess alluvial valley floors in all adjacent
19 lands to the permit application?

20 A. We did not.

21 Q. And would you agree that DEQ didn't do this
22 assessment because Brook didn't have surface access to all
23 these adjacent lands?

24 A. I would not.

25 Q. You would not. Okay.

1 I'm going to pull up our Exhibit 37 that's on
2 the screen. Are you familiar with this email --

3 A. I am.

4 Q. -- that you wrote me?

5 A. I am, yes.

6 Q. Okay. And in this email are we -- are you
7 talking to me about AVF mapping related to the permit
8 application?

9 A. Yes.

10 Q. Okay. And that you need to maybe do a little
11 bit more at some point?

12 A. That I would need to -- if the Brook Mine is
13 going to affect the AVF -- any AVF in the area outside the
14 permit boundary, then at that time we'd be mapping the
15 AVF.

16 Q. Okay. But in making a technical adequacy
17 determination for this permit application, how could you
18 do that without knowing whether there are AVFs in any of
19 those areas?

20 A. Statutes and rules and regulations, if there's
21 no outside impact from the mine, all permit -- impacts
22 within the mine permit boundary do not directly impact
23 AVFs, the analysis does not need to be done.

24 Q. Okay. But do you know where those AVFs are?

25 A. I know where the historical AVFs are, yes.

1 Q. Okay. But how about on all the lands within
2 one-half mile of the permit boundary?

3 A. There are areas that could be AVF, but we have
4 not designated them as such.

5 Q. Have you reviewed them at all whether they could
6 be designated?

7 A. I have looked at them and made an evaluation
8 that many of them might fit within that category, and that
9 field examination was necessary to determine that.

10 Q. Okay. A moment ago you just said that you
11 didn't do some of this mapping I guess not because of the
12 lack of surface access.

13 A. Yes. We did make a determination subsequent to
14 this surface access was not going to be a problem.

15 Q. It was not going to be a problem.

16 A. Right. I was overestimating the impact of the
17 surface owners with this particular evaluation, and then
18 we subsequently made a decision that some of these surface
19 owners could be brought in simultaneously so would not be
20 as difficult to map as we thought it was going to be.

21 Q. Okay. Well, this email's back in February of
22 this year. Have you since then reached out to, say,
23 Mr. Buyok and asked him if you could come out to his land?

24 MR. KUHLMANN: Objection. I think you're
25 mischaracterizing the date.

1 MS. ANDERSON: Okay. It says Monday,
2 February 8, 2016.

3 MR. KUHLMANN: You said February of this
4 year.

5 MS. ANDERSON: I'm sorry. February -- I'm
6 sorry. February of last year.

7 MR. KUHLMANN: Yes.

8 MS. ANDERSON: I can't remember what year
9 it is, apparently.

10 Q. (BY MS. ANDERSON) So February of last year.
11 Since that time, have you reached out to any of these
12 landowners, say, Mr. Buyok, and ask them if you could come
13 out and do some AVF mapping on their land?

14 A. I did not. There's only one landowner I
15 contacted in the upper Slater Creek area.

16 Q. Okay. So you just said that surface access
17 wouldn't be a problem. So why didn't you reach out to any
18 of these landowners try to do some of that work before you
19 determined the permit application technically adequate?

20 A. When we determined that we were not having to
21 map the AVF at that point in time, I put it on the back
22 burner as something to do in the future because the
23 mine --

24 Q. Something to do in the future.

25 A. -- would not be there for five years.

1 Q. When in the future will that be done?

2 A. At any point in time that the AVF potentially be
3 impacted by Brook Mine.

4 Q. And what -- wouldn't you agree that Brook's own
5 analysis shows that some wells on the property of some of
6 these landowners will be impacted for mining activities?

7 A. We don't know that.

8 Q. You don't know that?

9 A. No.

10 Q. So you don't remember a part of the permit
11 application that has a list of wells that are expected to
12 be impacted for mining?

13 A. From what I understand, it's just a list of
14 wells in the area.

15 Q. Okay. But you don't remember another -- okay.
16 This isn't going anywhere.

17 So what scientific basis did you use to
18 determine that additional AVS -- alluvial valley floor
19 mapping was not necessary for the Brook Mine permit?

20 A. The information that we had based on the permit
21 application, the lack of discharge of any kind, the lack
22 of affected area outside the permit boundary led us to
23 assume that there would be no impacts to any adjacent
24 lands to that permit boundary.

25 Q. Okay. All right. Let's turn to facilities at

1 the mine plan. Would you generally agree that a coal
2 mining permit should include all facilities incidental to
3 conducting coal mining activities, including loadout
4 facilities?

5 A. If they were -- if they were in the mine plan,
6 you bet.

7 Q. Okay. Are you familiar with the requirements in
8 Chapter 2 of the regulations that speak to a railroad spur
9 or spurs being included in the permit boundary?

10 A. I have read them. I'm not familiar with them at
11 the point where I can quote them.

12 Q. I think you testified to this earlier, but does
13 this permit contain a loadout facility or railroad spur at
14 this time?

15 A. It does not.

16 Q. Okay. It did at one point, though?

17 A. It did in the initial permit application, yes.

18 Q. Okay. Have you ever seen a coal mining permit
19 without a loadout facility?

20 A. I have.

21 Q. You have? What was that permit?

22 A. One of the permits that -- that was examined
23 in -- I'm going to have to step back a minute. Long time
24 ago. I was working on a potential mine in southern part
25 of the state of Wyoming, Roosevelt mine. We were

1 estimating how we could build a mine adjacent to the
2 Rosebud, utilize Rosebud's facilities, and, therefore, not
3 have facilities on the mine that we were looking into.

4 Q. Okay. But there was still an adjacent mine
5 where they were going to use --

6 A. There was an adjacent mine that could use those
7 facilities on, yes.

8 Q. Okay. Correct.

9 All right. Didn't you think it was unusual that
10 the company doesn't have any facilities to get its coal to
11 market?

12 A. Based on the mining techniques, the rate of
13 mining that's going to occur, the tonnage rates that are
14 going to occur, they can handle that with a fleet of
15 trucks that they've shown in the mine plan.

16 Q. Where do the trucks go?

17 A. Trucks will leave the property, and we don't
18 know where it goes from there.

19 Q. Okay. So do you remember a conversation you and
20 I had in your office at one point in time when I asked you
21 about the loadout facility?

22 A. Uh-huh.

23 Q. Okay. And would you agree that you told me that
24 once coal leaves the permit, DEQ authority is over?

25 A. Yes.

1 Q. Okay. But doesn't DEQ require all facilities
2 and roads that are incidental to coal mining to be part of
3 the permit?

4 A. Correct.

5 Q. How about processing facilities and processing
6 areas? Are there any of those discussed in the permit as
7 of now?

8 A. Yes, there are.

9 Q. There are.

10 Do you know if the company has proposed a
11 processing facility to be used for coal at this mine site?

12 A. Yes, there is.

13 Q. Okay. Have you heard about the industrial park
14 and manufacturing facilities to process coal from the
15 mine?

16 A. I --

17 MR. SUTPHIN: Now, Mr. Chairman, I'm going
18 have to object to these lines of questions. We are here to
19 talk about the permit to mine coal that is in all these
20 volumes. What happens to the coal after it leaves the area
21 is of no importance to this hearing.

22 CHAIRMAN BAGLEY: I actually agree. We
23 need to focus on the mining aspect. What happens with the
24 coal elsewhere, I would imagine is going to be picked up in
25 other applications and things, so we need to focus on the

1 mining aspects.

2 MS. ANDERSON: Mr. Hearing Officer, can I
3 respond briefly?

4 CHAIRMAN BAGLEY: Sure.

5 MS. ANDERSON: Noting that you just
6 probably made your ruling. But as you'll see in our
7 prehearing memo, we discussed the requirements for what is
8 considered to be coal mining activities under the
9 Environmental Quality Act. And coal mining activities also
10 include areas that are incidental to the actual mining,
11 including processing areas.

12 CHAIRMAN BAGLEY: So -- yeah, so --

13 MS. ANDERSON: We believe the permit
14 application is deficient at this time because it does not
15 include processing areas that have been proposed by the
16 company and will be used as part of the mining operation.

17 CHAIRMAN BAGLEY: The question is are we
18 putting these facilities on this site, and I see no
19 evidence. I mean, I have also read the newspaper, and I've
20 heard these things, but I've not seen any evidence that
21 it's going into the mine site. And so they're going to
22 load the mine -- the coal out and send it somewhere and
23 process it, that is a concern, but not of our hearing
24 today.

25 MS. ANDERSON: Okay. Thank you.

1 Q. (BY MS. ANDERSON) All right. Let's turn to
2 recreation activities.

3 CHAIRMAN BAGLEY: Actually, Ms. Anderson --

4 MS. ANDERSON: Oh, sure. Sorry. Lunch.

5 CHAIRMAN BAGLEY: -- how much longer do you
6 think? It's 12:00.

7 MS. ANDERSON: I've probably got a little
8 while longer, yeah.

9 CHAIRMAN BAGLEY: If you don't mind, I
10 think we'd like to take a break. Let's take one hour and
11 10 minutes. We'll start at 1:15.

12 MS. ANDERSON: Okay. Thank you.

13 (Hearing proceedings recessed
14 12:04 p.m. to 1:16 p.m.)

15 CHAIRMAN BAGLEY: We are back in session.
16 Please continue, Ms. Anderson.

17 MS. ANDERSON: Thank you, Dr. Bagley.

18 Q. (BY MS. ANDERSON) Mr. Kristiansen, let's turn
19 to Recreation Activities. Could you explain to us what
20 the scope of your review was related to recreational
21 activities?

22 A. Yes. What we did was examine the recreational
23 activities that occur within that area. There are
24 multiplicity of recreation activities that take place,
25 from hunting to hiking to four-wheeling in some places,

1 fishing, a lot of different recreational activities that
2 do happen in that general area. So we did examine the
3 impacts on recreational activities on the -- based on mine
4 plan and what we expected during that mining period.

5 Q. So you considered impacts like fencing off lands
6 currently used for hunting and recreation?

7 A. We did.

8 Q. Okay. And would you agree that some areas of
9 the permit will have to be fenced off?

10 A. Yes. They will, yes.

11 Q. Okay. Did you consider whether recreation
12 activities on any adjacent lands would be impacted by
13 mining activities?

14 A. We've looked at it cursorily because they're
15 outside that permit boundary. We can't enforce anything
16 outside the boundary, so we looked at in general terms.

17 Q. In general terms. Okay.

18 I mean, what did your review find?

19 A. That the impact to recreational activity in the
20 area should be minimal. Other than hunt areas that you
21 would walk in, access is pretty sufficient right now.
22 Some of that would have to be attenuated by the mine
23 working up there, so we'd have to shrink that space down a
24 little bit up here.

25 Q. Okay. And this may be a question for Mr. Emme

1 later today too about blasting and whether you looked at
2 whether blasting in the area would have any impacts on
3 recreation activities.

4 A. Mr. Emme is the correct person to talk to about
5 that.

6 Q. Okay. Is DEQ considering any conditions of
7 approval related to recreation uses or activities for the
8 mine?

9 A. No. That is actually outside of our capacity.
10 A lot of these lands are the surface owner has worked with
11 Brook Mine in building what is considered to be
12 appropriate limitations in some of those areas. And
13 that's about all we can enforce is some of the stuff
14 within that permit boundary is all.

15 Q. Okay. All right. Let's switch to production
16 limits. Based on what you know about the company, would
17 you agree the company's plans for the area and for the
18 coal to be mined have changed since 2014 when the permit
19 application was submitted, to your knowledge?

20 A. I never, for a long period of time, we didn't
21 discuss destination of the coal. Primary concern was the
22 mining of the coal, and once it left the property. We had
23 no real in-depth discussion of what some of the
24 destinations might be for that coal. All we knew was that
25 they were not thinking the terminal coal or thinking of a

1 different use for that coal. But at that point in time we
2 didn't know.

3 Q. Okay.

4 A. They developed more things over time, but I
5 haven't been privy to any of that stuff.

6 Q. Okay. So you never asked the company about
7 their production goals or --

8 A. You mean as far as tonnage?

9 Q. Yeah.

10 A. The tonnage is indicated in the mine plan and
11 what tonnage will occur during which years.

12 Q. Okay. And based on what you know about their
13 use of the coal now, did you ever ask them about whether
14 they need to update that tonnage amount?

15 A. At this point in time they've left it stand, so
16 I have to assume they're still going to mine that amount.

17 Q. Okay. Would you agree that the company already
18 has an Air Quality permit?

19 A. Yes, they do. They've expressed that.

20 Q. And why does the mine permit application say
21 that the Air Quality permit will be submitted then?

22 A. There's a timing period on some of that stuff
23 was -- decisions were made at specific times prior to
24 their acquiring the permit, and they have subsequently
25 acquired the permit after that point in the narrative.

1 Q. Okay. Will DEQ require an update in the permit
2 narrative to reflect that Air Quality permit that has been
3 received?

4 A. All we require is they state they have an Air
5 Quality permit.

6 Q. I think they state it will be submitted. Is
7 that sufficient?

8 A. I'm not sure. I can't remember that part of it.
9 But it is sufficient to state that -- if they state it
10 will be submitted prior to the mining commencing that we
11 would consider that adequate.

12 Q. Okay. Have you reviewed that Air Quality
13 permit?

14 A. I have not.

15 Q. Okay. So you don't know if there's any
16 production limits or anything like that in the Air Quality
17 permit?

18 A. No, I don't.

19 Q. Okay. Did you ever consult with anybody in the
20 Air Quality Division about the Air Quality permit?

21 A. For the Brook Mine?

22 Q. Yeah.

23 A. I haven't really in specific details, other than
24 they were -- they said, yeah, we'll have to provide a
25 permit for the mine. And that's been quite a while ago,

1 so we haven't really talked about that because it hasn't
2 become -- Brook is taking care of that themselves.

3 Q. Okay. Would you agree that in certain years,
4 for the permit it's projected that the company will mine
5 more than 2 million tons per year?

6 A. No, I don't.

7 Q. You don't. So you don't see a number that's
8 more than 2 million for any year in the permit?

9 COUNCIL MEMBER FLITNER: How would he have
10 any knowledge about this kind of stuff? Let's get back to
11 the permit. I mean, he doesn't know what their plans are.
12 It's not his privy. He doesn't work for the coal company.
13 Let's get back into the permitting end.

14 MS. ANDERSON: Okay. Thank you. I can
15 find the map...

16 Q. (BY MS. ANDERSON) Are you -- Mr. Kristiansen,
17 are you aware of a chart in the permit application that
18 lays out the production estimated for the life of the
19 mine?

20 A. There is a table in the mine plan that depicts
21 the annual average production --

22 Q. Okay.

23 A. -- for the life of the mine. It is upon seeing
24 that in some of the comments, I looked at it again and it
25 is improperly labeled. It is total production per year by

1 life of the mine. So the year 6 through 10, say 10
2 million tons are 2 million tons per year.

3 Q. Okay. And how about some of those other years
4 in that chart, as you called it?

5 A. They seem fairly applicable to what they plan on
6 doing.

7 Q. Okay.

8 A. So that's probably about a 2-million-ton-a-year
9 operation when they're in full swing.

10 Q. Okay. Let's turn to traffic and roads. Is it
11 accurate to say that Brook has represented that the
12 traffic control plan will be an operational requirement?

13 A. The traffic control can be part of their mine
14 plan as far as haul roads, access roads and all the other
15 roads put into place, and they'll have mine defined limits
16 in some of those roadways. We don't enforce roads or
17 speed limits or any of the rest of that sort of stuff, so
18 there's not much more we can do about it except for a
19 general narrative.

20 Q. But isn't there required section of the permit
21 that considers impacts to existing uses including public
22 roads?

23 A. There is some narrative description. Very minor
24 at this point in time. It's outside the permit boundary.
25 Again, the roads to be discussed in the permit application

1 are the roads inside the boundary. And roads outside of
2 that, then, in passing, there was some issue about
3 traffic.

4 Q. Okay. Let's turn to Exhibit 12 of yours,
5 page 131. And it's displayed on the projector, but you
6 might want to pull out the whole map just for ease of you
7 being able to read it.

8 A. Okay. And I have it.

9 Q. Okay. Great. Do you see Slater Creek Road on
10 this map?

11 A. I do.

12 Q. Could you point it out in the projection, just
13 for the benefit of the council.

14 A. Find my little --

15 Q. Yeah, your little projector [sic].

16 A. My little pointer there. Did you take the
17 pointer back or -- ah.

18 MR. RUBY: He did.

19 A. Okay.

20 Q. (BY MS. ANDERSON) So Slater Creek Road.

21 A. Slater Creek Road.

22 Q. Yeah.

23 A. Is -- let's see if I can see it on this picture
24 here. And it actually goes right up through here, but
25 it's really hard to see with the color and reproduction

1 there.

2 Q. Okay. That's fine.

3 Would you agree that mining will take place
4 under this county road?

5 A. Yes, mining will take place beneath the county
6 road.

7 Q. Okay. Will any trench or surface mining occur
8 on or around this county road?

9 A. No trenches or surface mining will occur on the
10 county road area.

11 Q. Do you see Hidden Water Road on this map?

12 A. I do see Hidden Water Road.

13 Q. Okay.

14 A. And that is coming up through -- this one right
15 here is Hidden Water Road that comes up through Section
16 17.

17 Q. Okay. And would you agree that mining will take
18 place under this county road?

19 A. Yes, it will.

20 Q. Okay. Do you see the frontage road or Wyoming
21 State Highway 345 on the map?

22 A. I do. And that is going down through here like
23 this.

24 Q. Did you ask the company if they would use State
25 Highway 345 for any mining activities?

1 A. I did not specifically ask them. It's outside
2 the permit boundary.

3 Q. Okay. Do you have any reason to believe that
4 coal will be hauled on this road?

5 A. I don't know for a fact what the plans are for
6 that.

7 Q. Okay. I'm going to have to do something else.
8 Do you see Interrogatory Number 15 -- I'm sorry.
9 So this is back to DEQ's responses to our interrogatories.
10 Do you see Interrogatory Number 15 on this display?

11 A. I do.

12 Q. Could you read the response for me.

13 A. "Public Roads:" is that the one you're looking
14 at?

15 Q. Yes. That's the one?

16 A. "County roads will be used for haulage where the
17 trucks leave the minesite. This occurs in year 1, with
18 the TR-1 Pit coal hauled south to highway 338. During
19 years 8 to 11, coal will be hauled using the Slater Creek
20 Road and the South Ash Creek Roads, it's the highway 345.
21 County roads will be redesigned to allow for industrial
22 traffic, working with Sheridan County on long term
23 planning prior to use. Buffering is not required where
24 the surface owner has worked out a Surface Use Agreement
25 to use the roads for mine transportation. Haulroads will

1 be designed and certified ahead of mining by a revision
2 submittal to the permit."

3 Q. Okay. So is it still your testimony that DEQ
4 has no knowledge about the use of Highway 345?

5 A. We don't see any specific mention of 335 -- or
6 345 in the -- some of the formal materials we've looked
7 at, we're making an assumption there that it will be used.

8 Q. Okay. So this particular paragraph isn't in the
9 mine plan?

10 A. Not that I can remember, no.

11 Q. Not that you can remember.

12 So this is DEQ's interpretation of what can
13 happen?

14 A. Based on what I see here, it is.

15 Q. Okay. Okay. Going back to the map. This is
16 similar kind of question. Do you see the Decker Highway
17 on this map?

18 A. I do see the Decker Highway.

19 Q. Okay.

20 A. It is right here.

21 Q. Excellent. Did you ask the company if they
22 would use that highway for any mining activities or
23 transportation of coal?

24 A. I did not. We assumed they would utilize it,
25 but I never specifically asked them because the assumption

1 was already there.

2 Q. Okay. Has DEQ been in communication with the
3 Wyoming Department of Transportation about the use of
4 these public highways?

5 A. We --

6 THE REPORTER: I'm sorry?

7 THE WITNESS: We have not.

8 Q. (BY MS. ANDERSON) Has DEQ been in communication
9 with the county commissioners of Sheridan County about the
10 use of mining impact on county roads?

11 A. We have not.

12 Q. Are you aware of the use of county roads by
13 anybody but the surface landowner for those county roads?
14 So, for instance, Slater Creek, are you aware of other
15 landowners maybe outside the permit area that --

16 A. Yeah, there are --

17 Q. -- use those roads.

18 A. -- some landowners that live up Slater Creek.

19 And from what I understand, they will be
20 utilizing the road as long as they can, and if there are
21 any diversions that need to be made to re-run the road so
22 they can continue to mine in around that area will be
23 performed, from what I understand. There are a number of
24 residents that do live up there and utilize that road on a
25 daily basis.

1 Q. Okay. Has DEQ been in communication with any of
2 those landowners?

3 A. We have not.

4 Q. Do you know if the company has?

5 A. I don't know.

6 Q. Okay. All right. So I'm going to switch topics
7 a little bit here.

8 So you talked a little bit in your testimony
9 about I think you used the phrase chain of command for the
10 permit review.

11 A. Uh-huh.

12 Q. Who is your supervisor for the purposes of your
13 district office's review of the permit application?

14 A. Mr. Mark Rogaczewski was my immediate
15 supervisor.

16 Q. And who is his supervisor in Cheyenne?

17 A. His supervisor in Cheyenne, for this particular
18 project, was Mr. Alan Edwards.

19 Q. Okay. There is a change in Land Quality
20 Division administrator during the review period for permit
21 application, right?

22 A. Yes.

23 Q. And what was that change?

24 A. Mr. Kyle Wendtland is the administrator for Land
25 Quality, but he recused himself from the entire mine

1 review process or any decision making.

2 Q. Any decision making?

3 A. Yes.

4 Q. Okay. So you would say that he hasn't been
5 involved in reviewing any aspect of the Brook Mine permit?

6 A. Not that I know of.

7 Q. Not that you know of. Okay.

8 Could you tell us why Mr. Wendtland was recused
9 from the proceedings?

10 A. I'll do it the best of my ability. His brother
11 is an attorney that works for I think one of the Brook's
12 clients, and so he recused himself on day one.

13 Q. Okay. I have on the display here our
14 Exhibit 70, which is a chain of emails which you're
15 included in.

16 A. Uh-huh.

17 Q. Do you remember this conversation?

18 A. I don't, but scroll down further, please.

19 Q. Yeah. Sure.

20 A. Okay. Yes, I do.

21 Q. Yes, you do. Okay.

22 MR. KUHLMANN: Mr. Chairman, the Department
23 did not try to exclude any exhibits based on relevance.
24 But if -- I guess I would ask that the -- I would ask that
25 PRBRC's counsel keep this line of questioning focused on

1 actually the contents of the permit, because I don't know
2 that that's where this question is going.

3 MS. ANDERSON: And Mr. Hearing Officer,
4 there were objections raised about the conflict of
5 interest. And as you heard just right now from
6 Mr. Kristiansen, the Department and the company have said
7 that Mr. Wendtland was totally recused. The reason we have
8 exhibits related to this is we will show that he wasn't
9 totally recused and he was actually involved in a limited
10 way, but in some important ways, according to our
11 organization and some of the objectors. So that's where
12 this line of questioning is going.

13 MR. KUHLMANN: Mr. Chairman, I guess I
14 question the relevance of whether or not Mr. Wendtland was
15 involved in any respect with the sufficiency of the
16 application actual contents.

17 CHAIRMAN BAGLEY: I guess I'm wondering the
18 same thing. I mean, we have a mine plan and obviously
19 we've been going through it in a lot of detail, asking a
20 lot of questions about that. If -- I guess my question is
21 if you had -- you have an indication that something in the
22 mine plan was specifically changed because of communication
23 with Mr. Wendtland, otherwise I don't see that it's
24 relevant.

25 MS. ANDERSON: Okay.

1 Q. (BY MS. ANDERSON) I'll pull up Exhibit 60 from
2 our exhibits. And, Mr. Kristiansen, do you remember this
3 chain of emails between you and Mr. Wendtland? I'll
4 scroll down.

5 A. Scroll down, yeah. Thanks.

6 Q. Yeah.

7 A. Okay. I remember it, yep.

8 Q. Okay. Can you tell us what this is about?

9 A. Boy.

10 Q. Was it about what period of review DEQ would be
11 using for --

12 A. That's what I'm trying to remember, is what
13 period of review that was in. 11/17 --

14 Q. It was something about the permit application,
15 right?

16 A. Yes, it was.

17 Q. And so -- and then Kyle Wendtland replied back
18 to you, right?

19 A. Correct.

20 Q. And it says that -- and then you reply back to
21 him, right?

22 A. I believe so.

23 Q. Okay. So would you agree that Mr. Wendtland was
24 involved in this decision?

25 A. He occasionally heard some of the aspects of the

1 operation, but had nothing to do with the mine permit or
2 the application of our critique of the permit.

3 Q. Okay. Let me turn to Exhibit 65 -- 66 -- I'm
4 going to turn to Fisher Exhibit 18. And this may be a
5 question for Mark.

6 A. Yeah. I didn't see this.

7 Q. Okay. That's fine. I'll leave that for Mark.

8 MS. ANDERSON: Okay. That is all I have.
9 Thank you, Mr. Kristiansen.

10 THE WITNESS: Thank you.

11 CHAIRMAN BAGLEY: Thank you, Ms. Anderson.
12 Mr. Gilbertz.

13 MR. GILBERTZ: Thank you. I need to
14 connect to my technology here.

15 CROSS-EXAMINATION

16 Q. (BY MR. GILBERTZ) Good afternoon,
17 Mr. Kristiansen.

18 A. Good afternoon.

19 Q. My name is Jay Gilbertz. I represent the
20 Fishers in this matter. I'll try not to spend time
21 plowing the same ground visited about already -- or others
22 have already visited with you about.

23 A. Okay.

24 Q. I wanted to go over a couple of things quickly.
25 One, there are -- we know we've got a few landowners in

1 these proceedings here today before us about what's going
2 on out there, but the Tongue River Valley down by the
3 river is an area with a great number of landowners and
4 farmers and ranchers living down through that area,
5 correct?

6 A. Correct.

7 Q. And from the mine documents it appears that more
8 than 350 domestic or stock water wells are within the zone
9 of potential influence considered by the DEQ, correct?

10 A. Correct.

11 Q. Okay. And as you told us a couple of times,
12 both yesterday and today, the coal seam itself out in this
13 portion of the country is the aquifer, right?

14 A. The coal seams are aquifers, yes.

15 Q. And you said that there are -- there are not a
16 lot of options in the shallow ranges or anything else that
17 will produce sufficient quantity or quality of water for
18 domestic well, right?

19 A. Generally not.

20 Q. Good. Also try to start with a couple of things
21 I bet we can agree on. You would agree with me that it is
22 a basic tenet of Wyoming's Environmental Protection Act to
23 enable the state to prevent, reduce, eliminate pollution
24 and to both preserve and reclaim the land of Wyoming?

25 A. Uh-huh.

1 Q. You also agree with me that part of the policy
2 is to carefully plan the development, reclamation and
3 preservation of the land and the water resources of the
4 state?

5 A. Yes.

6 Q. Indeed, you would recognize that as the -- very
7 similar to the precise language of the policy set forth in
8 the statute?

9 A. Yes.

10 Q. Good. With that goal in policy, you would agree
11 with me that it's important to review and address both the
12 risks and potential problems with reclamation and
13 hydrology carefully and thoughtfully before mining?

14 A. Can you say that again.

15 Q. You bet. With this goal and this policy in
16 mind, you would agree with me that it is important to
17 review and address both the risks and the potential
18 problems associated with reclamation and hydrology in a
19 careful and thoughtful manner?

20 A. Yes.

21 Q. And the same question a little differently. You
22 would agree with me that it is important to review and
23 assess the risks and potential problems with reclamation
24 and hydrology in a thoughtful and scientific fashion?

25 A. Yes.

1 Q. And we want to approach that process on a
2 case-by-case and site-specific approach, correct?

3 A. Generally speaking, yes.

4 Q. Good. Would you agree with me that at times
5 input from the public can add value to this process and
6 bring to light or raise attention to issues that might not
7 previously have been addressed in the mine plan?

8 A. It can.

9 Q. And, indeed, that after objections were filed in
10 this case and the contested case proceedings got started,
11 if I understand the answers to interrogatories right, the
12 DEQ has acknowledged that the comments from objectors
13 about placing additional monitoring on the Tongue River
14 itself are valid?

15 A. Yes, they are.

16 Q. Okay. And so that was something that was
17 helpful from the public?

18 A. Yes, it was.

19 Q. Okay. Also, it was brought to light that the
20 way the mine plan was configured was that it was only to
21 protect adjudicated wells and not adjudicated and
22 registered wells?

23 A. That was the way it was stated, yes.

24 Q. And if I understand correctly, the DEQ has
25 agreed that it would be appropriate to amend the mine plan

1 to include both the registered and the adjudicated wells?

2 A. Both sets of wells, yes, permitted and
3 adjudicated.

4 Q. Can you tell us how that change to the mine plan
5 will be accomplished now?

6 A. This will come in as a modification of a
7 document, and we would assess the modification to
8 determine whether it's significant or insignificant --
9 minimally significant, to see whether there is something
10 we need to push forward or if we can utilize some
11 narrative resources at this point in time to develop some
12 programs later.

13 Q. Would these acknowledgments be made part of the
14 mine plan?

15 A. Depending upon the nature of those, it may or
16 may not.

17 Q. Okay. I would take it that you also wouldn't
18 have any problem with conditions being placed on the
19 permit should this council find that some of the evidence
20 in the case lends to the conclusion that a condition is
21 appropriate?

22 A. There's appropriate place for this conditions,
23 and this may occur.

24 Q. Okay. Now -- we're not reading each other. No
25 matter how hard I try, technology always ends up being my

1 bane. There we go. Looks like it's going to succeed at
2 this point.

3 So to further the discussion we're about to have
4 I just want to take a look at a bit of law for us for a
5 moment. It comes off orange up there. Let me just start
6 off with -- this is part of Wyoming 35-11-406(n). We have
7 a discussion -- this is familiar to you, right, sir?

8 A. Yes, sir.

9 Q. And we see here that an applicant for a surface
10 coal mining permit has a burden of establishing the
11 application that's in compliance with the act. It goes on
12 to say that no surface coal mining permit shall be
13 permitted unless the applicant affirmatively demonstrates
14 and the administrator finds in writing one of these is
15 number 2 -- (ii), the reclamation plan can be -- or the
16 reclamation plan can accomplish reclamation as required by
17 the act.

18 A. Correct.

19 Q. And that reclamation required by the act is --
20 act is restoration, correct?

21 A. It is reclamation.

22 Q. Okay. And (iii) says the proposed operation has
23 been designed to prevent material damage to the hydrologic
24 balance outside of the permit area, correct?

25 A. Correct.

1 Q. Okay. So we're talking about waters that exist
2 outside of the permit area. And so that we don't need to
3 revisit this again as we go through our concepts. Down
4 below in section (v), the proposed operation would, under
5 subsection (B), not materially damage the quantity or the
6 quality of the water in surface or underground water
7 systems that supply these alluvial valley floors. That's
8 part of the statute, correct?

9 A. Correct.

10 Q. Okay. So with that in mind, let's talk about
11 some hydrology points for a moment. When Brook mines in
12 the coal seams, if there is water in them, it will dewater
13 the coal seams, correct?

14 A. Correct.

15 Q. And the coal seams, at least in some places,
16 contain quite a bit of water?

17 A. In a few places they do, yes.

18 Q. Okay. And, again, as you stated to us
19 yesterday, the coal seam can be the aquifer in these parts
20 of Wyoming.

21 A. They can.

22 Q. Okay. Indeed, are you aware that the Fishers'
23 domestic water supply comes from the coal seam?

24 A. I didn't know that.

25 Q. Okay. Now, a coal seam is an aquifer that can

1 be connected to other things in a river and alluvial
2 valley system, correct?

3 A. Possible, yes.

4 Q. Well, let's talk a little bit about the
5 connected nature of that plan. I'm going to direct you to
6 what is part of the mine plan. It's the reclamation plan.
7 You're familiar with that, right?

8 A. Okay. Yep.

9 Q. I want to visit with you for a few moments about
10 what is in this reclamation plan. By the way, this is
11 drafted by Western Water Consultants, to your
12 understanding, correct?

13 A. Yes. Uh-huh.

14 Q. And we are looking for my iPad again.

15 A. There you go.

16 Q. When in doubt, plug it back in.

17 So in the discussion under RP.8.3, we have a
18 discussion of some of the water issues here. And this
19 portion in -- highlighted in blue says the aquifers are
20 generally recharged in the northwest and the water flows
21 down the geologic dip to the southeast. Do you see that?

22 A. I do.

23 Q. Great. Do you have any reason to disagree that
24 the aquifers in this area are generally recharged in the
25 northwest and water flows down the geologic dip to the

1 southeast?

2 A. I have no reason to disagree with that.

3 Q. Good. The next section says sources of recharge
4 to the Carney seam -- that would be the Carney coal seam,
5 right?

6 A. Correct.

7 Q. Include the Carney burn scoria that is adjacent
8 to the coal seam, open Carney mine pits to the north of
9 the permit area, regions where the Carney seam subcrops
10 into Slater Creek or Tongue River alluvial material. Do
11 you see that?

12 A. I see that.

13 Q. No reason to disagree with the notion that these
14 coal seams subcrop into the alluvial material?

15 A. There's no reason to doubt that.

16 Q. And therefore we have a connection of some sort
17 between the coal seams and the alluvial material, correct?

18 A. It can be, yes.

19 Q. In fact, we have that as an -- as the statement
20 of the applicant themselves.

21 A. Yes.

22 Q. Good. We go on now in blue again to talk about
23 the Masters seam. I won't read that to everyone because
24 we can -- hopefully it's large enough we can all read it
25 for ourselves. But in here we, again, come to the

1 conclusion that the Masters seam is in communication with
2 the river alluvium, correct?

3 A. Yes.

4 Q. Okay. So we now have a situation where we have
5 an interconnection between these coal seams and the river
6 alluvium. Let's take a second here and go to DEQ Exhibit
7 Number 15. And I'm going to try to blow this up. This is
8 the end of DEQ Exhibit 15. We can see the Brook Mine
9 permit acreage here, and we can see some identification of
10 AVF acreage over here on the right, correct?

11 A. Correct.

12 Q. To go back to what we just learned, we have the
13 water flowing down the geological dip from the north --
14 oops, lost it -- from the northwest, right?

15 A. Uh-huh.

16 Q. Down to the southeast. Something like that.

17 A. A little bit less precipitous than that. A
18 little bit more west northwest -- more northwestern, it
19 seems.

20 Q. Okay.

21 A. But, generally speaking, in that general
22 direction.

23 Q. Something more like this?

24 A. Sure.

25 Q. What you described for me? And that's going to

1 happen throughout the permit area. For example, that same
2 thing's happening over here, where water --

3 A. No, it won't.

4 Q. -- comes down to dip and out, right?

5 A. There's places where that doesn't apply.

6 Q. Okay. That's the general statement we have for
7 how the hydrology works underground in this area, correct?

8 A. That is right. It's a general statement.

9 Q. Good. And one of the things that you were
10 saying in your testimony earlier about AVFs is that you
11 looked at Brook's statement that there were no AVFs to
12 be -- to be looked at within the Slater Creek drainage,
13 correct? And you looked at that and determined that to be
14 in error.

15 A. I did.

16 Q. Okay. And, in fact, you identified that there
17 are AVFs in the Slater Creek area, correct?

18 A. I did.

19 Q. Let's go ahead and jump to DEQ 16, which is the
20 findings in that regard, I believe. Oops. I'm on the
21 wrong spot. I am. There we are. No need to run away
22 from my exhibit. We're still on 15.

23 And what we have here, which is page 10 of your
24 memo on Slater Creek, is an area that you have designated
25 as alluvial valley floor in Slater Creek, correct?

1 A. It is.

2 Q. And that is -- we see it stopped suddenly there
3 at the permit boundary. I presume that was because you're
4 only identifying the AVF within the permit boundary?

5 A. Correct.

6 Q. Okay. So in this instance you found the
7 designation -- or the claim that there was no AVF within
8 this permit boundary to be in error, because, in fact,
9 there was AVF inside the permit boundary.

10 A. Oh, okay. Yes.

11 Q. Okay. And you also found some I think
12 identified just below the permit boundary as well; is that
13 right?

14 A. There was some potential areas down in there
15 that needed to be examined.

16 Q. But that examination has not happened yet?

17 A. No, it has not yet happened.

18 Q. Okay. So let's talk a bit more about the
19 portions that are already designated as alluvial valley
20 floors. We're still in 15, and I'm at page 13. I'm going
21 to try to make our map a little usable here. There we go.
22 At least from my angle that looks orangish. Is it from
23 your angle?

24 A. It is.

25 Q. On the actual map that is colored in yellow,

1 correct?

2 A. I believe it is.

3 Q. Okay. And we have a label here that says AVF
4 acreage pointing to these shaded areas we're looking at?

5 A. Yes, it does.

6 Q. Good. And you have told us that it has been
7 designated as AVF, alluvial valley floor, as -- a while
8 back as part of the Big Horn Coal permit, correct?

9 A. Yes. This was concluded a good number of years
10 ago.

11 Q. Good. And what we know is that -- I'll try to
12 make my laser work here -- this area that I'm pointing to
13 in here, is the TR-1, correct?

14 A. Correct.

15 Q. And that is the very first place that Brook
16 intends to mine. Is that --

17 A. It is.

18 Q. And we can see that the edge of the permit
19 boundary parallels and follows precisely, pretty darn
20 close anyway, the designation of the alluvial valley
21 floor.

22 A. Yes, it does.

23 Q. Okay. And what we have, then, as you have
24 noticed, is that this portion that will be mined,
25 potentially, in here, that this is heavily saturated

1 material, bathtub like, I think, correct?

2 A. Say that again.

3 Q. I think you described this as being like a
4 bathtub. There's a lot of water in that material.

5 A. There's -- that's an old Big Horn Coal pit.

6 Q. There's a lot of water within the earth material
7 inside of this boundary, correct?

8 A. At this point in time, there is.

9 Q. Which is directly and next door adjacent to this
10 designated alluvial valley floor.

11 A. Yes.

12 Q. Okay. What data or scientific study do we have
13 that tells us that interrupting water inside of the mine
14 area is not going to have a detrimental effect on the
15 water in the alluvial valley floor?

16 A. I don't have the answer for that.

17 Dr. Muthu Kuchanur does.

18 Q. Okay.

19 A. So when he gives his testimony, you'll be able
20 to get the answer.

21 Q. Well, let's then stick with something you do
22 know about. Go to 16. So I'm going to blow up the map
23 that's in exhibit -- DEQ Exhibit 16, which is the Brook
24 Mine boundary now with the addition of what you have
25 labeled as the potential AVF acreage, correct?

1 A. Correct.

2 Q. And, in fact, it was you who identified this as
3 potential AVF acreage?

4 A. Correct.

5 Q. Good. And while we're here, if we were to do
6 the same thing that we did before, we've established
7 already that the coal seams, Carney and Masters,
8 communicate with the river alluvium of the Tongue River.

9 A. Possibly.

10 Q. Okay. Possibly.

11 And we have established that the geological dip
12 goes from northwest to southeast through the permit
13 acreage where the coal will be mined, coal which is an
14 aquifer, and into the alluvial valley floor below,
15 correct?

16 A. The dip actually, more generally eastward and
17 northeastward.

18 Q. Okay.

19 A. The strike is northwest to southeast.

20 Q. Okay. So that's the interesting part of this,
21 is that everywhere within the mine plan that I can find,
22 it is designated that the slope is from northwest to
23 southeast flowing through the Brook permit acreage toward
24 the alluvial valley floors. However, when it came to this
25 alluvial valley floor designation, you then concluded, the

1 only place I can find in the mine plan, that the regional
2 dip runs about 90 degrees of what everything else says,
3 and that it goes a different direction.

4 A. Correct. That was my finding.

5 Q. And by that finding, you, therefore, found that
6 it was unnecessary for the DEQ to determine whether the
7 coal seams in this area that may, as you say, communicate
8 with the alluvium of the Tongue River Valley need not be
9 performed.

10 A. At this point in time -- would you please
11 rephrase that question?

12 Q. Sure.

13 A. I got lost.

14 Q. The decision that the water didn't flow as -- as
15 Brook Mine it itself says the water flows in its
16 reclamation plan, it was necessary to exclude the alluvial
17 valley floor of the Tongue River from consideration.

18 A. No, this was the determination I based on a lot
19 of the regional geology. And in some of these areas, the
20 geology turns and looks different directions. And based
21 upon the way it was deposited in there. So some of these
22 areas do, in fact, dip towards the southeast and others
23 dip toward the northeast.

24 Q. Okay.

25 A. Depends on what part of the mine you're in, what

1 parts of the geology you're looking at.

2 Q. So it's complex under there.

3 A. It is.

4 Q. We can't say for sure what happens.

5 A. In most cases, within a limited distance, beyond
6 that point we can't.

7 Q. Okay. So there is a complexity in how the water
8 flows and we know that it may connect with the alluvial
9 valley floor of the Tongue River in what you've labeled
10 potential AVF acreage.

11 A. There's a potential.

12 Q. Okay. Good. And, therefore, we cannot say that
13 mining through the coal seam, which is an aquifer flowing
14 to that alluvial valley floor, will not materially damage
15 the quantity or the quality of the water in the alluvial
16 valley floor, can we?

17 A. We can't say that.

18 THE REPORTER: You can or can't?

19 THE WITNESS: We cannot say that.

20 Q. (BY MR. GILBERTZ) Okay. All right. And then
21 as to this portion that you marked as potential AVF.
22 Here's the area of the photograph of that area. Is it
23 familiar to you, sir?

24 A. It is basically familiar to me.

25 Q. Okay. There is very little doubt -- I

1 understand that you have to do particular studies to make
2 the conclusion, but there's very little doubt in your mind
3 this is AVF, is there?

4 A. The Tongue River area done here is probably AVF.

5 Q. Very good. And then just going back to memo. I
6 think you may have started to answer this question
7 earlier, but I want to get to it. The reasons that you
8 give for not furthering the study of the AVF in the Tongue
9 River Valley marked as potential. One, the conclusion of
10 the dip goes in a different direction, as we discussed.

11 The other one was -- if I can make this work --
12 it was going to be hard to get access. And you say
13 several of the landowners have indicated that data
14 collection on -- it reads several of the landowners have
15 indicated that data collection on their property for
16 purposes of evaluating the Brook Mine permit application
17 will be fought with every means at their disposal.

18 A. Correct.

19 Q. Suggesting that the ability to do the work would
20 be compromised by the landowners themselves.

21 A. At that point in time, yes.

22 Q. Thank you. So this is my question to you. Name
23 one.

24 A. A landowner?

25 Q. Yes, who told you that they would fight data

1 collection on their property with every means at their
2 disposal.

3 A. I'm not comfortable naming any landowners at
4 this time.

5 Q. So you cannot name one for us?

6 A. Will not.

7 Q. Okay. It wasn't Mrs. Fisher?

8 A. No, it was not.

9 Q. Okay. She wasn't asked, right?

10 A. No, she was not.

11 Q. And wasn't Mr. Bocek, right?

12 A. No. It was not.

13 Q. He wasn't asked? It wasn't Mr. Buyok. Excuse
14 me?

15 A. Thank you. No, it was not.

16 Q. And Mr. Bocek's not with us, but he wasn't
17 asked?

18 A. Correct.

19 Q. All right. Okay. So at least mapping of those
20 individuals who would have no resistance could have been
21 accomplished?

22 A. It could have been, possibly.

23 Q. Forgive me for a moment. I'm trying not to
24 repeat ground other lawyers have spoken with you about.

25 We mentioned the Fishers' water well earlier.

1 You said you did not know that it derives its water from
2 the coal seam.

3 A. I did not know that, no.

4 Q. Okay. And I have seen some reports in relation
5 to expected drawdowns, I believe came from the permit,
6 from certain wells. Are you familiar with that?

7 A. This area of the permit application was handled
8 by Dr. Muthu Kuchanur, and I'm not familiar with the
9 details.

10 Q. Good. I will ask him about that, then.

11 You were asked a few questions earlier today
12 about permits and whether you'd been involved in a
13 highwall mining permit, those sorts of things. Just to be
14 clear -- and your answer will be, but I need to do it for
15 the record -- have you previously been involved in a
16 highwall mining permit application near a major alluvial
17 river such as the Tongue River?

18 A. I have not.

19 Q. And another question. Have you been involved in
20 all these coal mining permits that you talked to us about,
21 have you ever been involved in coal mining permit in which
22 the -- either at least a draft of the probable
23 hydrological consequences or a draft of the cumulative
24 hydrological impacts was not done by the time DEQ declared
25 the permit technically accurate?

1 A. I can't remember any right now.

2 Q. So the best of your memory, this is the only
3 time that a permit has been declared technically adequate
4 without these hydrological studies having been done at
5 least in the draft form and available for review?

6 A. I can't remember any -- not having it, so no.

7 Q. Okay. We heard a lot over the last couple of
8 days, and I'm going to try to get us moving on to
9 hopefully somebody other than you, which may make you
10 happy. But we've talked an awful lot about these volumes
11 of materials and rounds of production. Can you identify
12 for me any materials which undertook to assess the
13 objectors' objections from a scientific perspective and
14 see whether there was merit to that?

15 A. At this point in time we gathered the objectors'
16 objections and classified them and put them together. We
17 have not had much of an opportunity to actually study
18 different objections for scientific merit or lack of it.

19 Q. You haven't had a chance to study them, even
20 though they're approximately five months old?

21 A. Not at this time, no.

22 Q. Okay. And so what we know, then, is in this
23 volume of materials, none of it is dedicated to DEQ trying
24 to understand whether the objectors have valid points.

25 A. No. Not that I can remember.

1 Q. And then I don't think we need to revisit it,
2 but you did draw some initial conclusions about that were
3 really just designed to harass folks.

4 A. Not in my opinion, no. I know some of those
5 landowners, I know they're sincere.

6 Q. Good. So at this point you don't hold that that
7 opinion that these are --

8 A. No, I don't.

9 Q. -- for purposes of harassment.

10 And I'll do something because our court reporter
11 is going to scalp me if I don't. It is impossible for her
12 to take down both of us talking at the same time.

13 A. Correct.

14 Q. So I'll try to go slow and finish the question
15 and not interrupt you, if you can do the same for me.

16 A. I can do that.

17 Q. Thank you.

18 Let's talk for a couple minutes about the
19 subsidence issues. I think you told the council that you
20 had relied on these other folks who had developed a
21 rapport about the subsidence as the basis for determining
22 this would be a no subsidence mine; is that right?

23 A. Yes.

24 Q. Who was that group again?

25 A. Say that again.

1 Q. What was the name of the group that did the
2 subsidence report?

3 A. Cardno.

4 Q. Cardno.

5 And that was a provider hired by the mine,
6 correct?

7 A. Would be from Brook Mine, yes.

8 Q. Okay. One of the things you mentioned was that,
9 well, they'd done a lot of sampling out there on 80-acre
10 spacings instead of 160s, correct?

11 A. Correct.

12 Q. 160-acre spacings for sampling is a process
13 that's typically used in the mines down by Gillette,
14 correct?

15 A. Correct.

16 Q. And the one thing you don't have to worry about
17 in the mines down by Gillette on these larger spacings is
18 the bearing capacity of the floor or the roof, right?

19 A. Correct.

20 Q. Because there isn't going to be a roof.

21 A. Correct.

22 Q. It's a true strip mine.

23 A. Yes.

24 Q. Okay. So it might be possible, when we are
25 concerned with the bearing capacity of the roof and the

1 floor, that tighter spacings could be required?

2 A. It may be, yes.

3 Q. Indeed, tighter spacings perhaps than 80?

4 A. Yes.

5 Q. Good. Now, you were talking a little bit about
6 this, so I wanted to see if we can just get some of our
7 basic terminology down. When the coal seam is sitting in
8 the ground, if it were my laptop sitting there, it's
9 supported underneath by all of the underburden under it,
10 correct?

11 A. Correct.

12 Q. And so its weight is distributed relatively
13 evenly across that surface, right?

14 A. Correct.

15 Q. When we take the coal out and we create these
16 voids, and when they do the longwall mine, they call the
17 part taking the coal out, they call that the drift, right?

18 A. There are several names for it. The gob in some
19 other areas. But depending upon the company, it's an area
20 of active mining.

21 Q. Okay. And that -- there are spots in this type
22 of mining where the coal remains and spots where the coal
23 is removed.

24 A. Correct.

25 Q. Can I call the part that's being removed the

1 drift, for purpose of our communication today?

2 A. Okay.

3 Q. Okay. Good. And so one of the things you said
4 is that, well, there's this rule of thumb that if you
5 don't take more than 50 percent of the mine, you're going
6 to -- or 50 percent of the coal, you're going to be okay.
7 Right?

8 A. Correct.

9 Q. Okay. And so what that is a function of,
10 however, is the strength of the roof, right?

11 A. Correct.

12 Q. So if we have a situation where there are
13 coal -- coal has been removed and supports have been left,
14 my little example here we have a situation where my
15 computer now represents the roof material. Can you follow
16 with me?

17 A. Yes, I am.

18 Q. Okay. And now the roof and all -- and
19 everything above it is supported on these little water
20 bottles, which may be the coal that's left behind. Are
21 you following my analogy?

22 A. Yes, I am.

23 Q. Right. So then if we come along and we put
24 overburden on that, then that adds to the pressure on
25 these bits of coal left holding onto everything, right?

1 A. Yes, it does.

2 Q. This works out well if this material in the roof
3 has been determined to be rigid enough to deal with that,
4 right?

5 A. Yes.

6 Q. You told us out on -- in this area that the core
7 samples told us that the overburden was comprised of sand,
8 was one material, right?

9 A. Sandstone is one material.

10 Q. Sandstone. I think you also said sand, right?

11 A. Sands and silts, yes.

12 Q. Sands and silts. And also shales, right?

13 A. Yes.

14 Q. Okay. So sands and silts would not be a
15 particularly rigid roof structure, correct?

16 A. Those are materials that are near the surface,
17 so that would not be.

18 Q. And so what we need to know, in designing our
19 mine is whether the materials that are above it can
20 support the weight of the overburden, correct?

21 A. Correct.

22 Q. And if they can't, then we have subsidence, even
23 if the coal pillars themselves do not break.

24 A. At some kinds of mines, yes.

25 Q. Okay. So roof rigidity or its ability to

1 withstand the overburden once the coal's removed from
2 underneath it, it's important.

3 A. It is.

4 Q. As is the stability of the floor.

5 A. It is.

6 Q. Because what could happen if the floor isn't
7 well supported is when that extra weight is added, when
8 the -- the column of coal that's left behind begins to
9 carry all the load, as these did, instead of my computer's
10 weight being spread out, it could push the floor down.

11 A. Sure.

12 Q. If that happens, then we also have subsidence.

13 A. Yes.

14 Q. So we would have agreement, then, that it is
15 important to understand whether subsidence will occur to
16 have a thorough understanding of the capacity of the roof
17 bearing material and the floor bearing material.

18 A. Yes.

19 Q. Okay. It is also important to understand the
20 capacity of the pillars made out of coal to withstand the
21 additional pressure that is put on them by now needing to
22 carry the weight from coal that has been removed?

23 A. Correct.

24 Q. And I think you told us for purposes of
25 determining what the bearing capacity of that coal was,

1 you just used a general resource?

2 A. There is a general number the Office of Surface
3 Mining recommends to do the analysis.

4 Q. If we, in this circumstances, wanted to do a
5 site-specific analysis to this site, as you have agreed
6 with me previously we should do, would it not be important
7 to have an understanding of what the coal out there
8 actually has as far as a bearing capacity?

9 A. It would be.

10 Q. You may not know, sir, but do you know -- give
11 us a ballpark how many landowners are in a half-mile
12 radius of the Brook Mine?

13 A. I don't have any idea. There are larger number
14 than we normally see.

15 Q. Okay. Now, more than a hundred, fair to say?

16 A. I don't know.

17 Q. I have an email up that came from the emails
18 produced in this, which appears to be, in its beginning,
19 from a lady named Deanna Hill to you, sir.

20 A. Correct.

21 Q. Do you see that? Who was Deanna Hill?

22 A. Deanna Hill was our adjudication expert in
23 Cheyenne during the early phases of the permit application
24 process.

25 Q. Okay. And do you remember Ms. Hill writing to

1 you that "this is one dang ugly permit"?

2 A. I do.

3 MR. GILBERTZ: Thank you, sir. I have no
4 further questions.

5 CHAIRMAN BAGLEY: Thank you, Mr. Gilbertz.
6 Mr. Sutphin, will you be --

7 MR. SUTPHIN: Yes, sir.

8 CHAIRMAN BAGLEY: Go ahead.

9 MR. SUTPHIN: Could we grab the --

10 MS. ANDERSON: Oh, yeah. Do you --

11 CROSS-EXAMINATION

12 Q. (BY MR. SUTPHIN) Good afternoon,
13 Mr. Kristiansen.

14 A. Good afternoon.

15 Q. First I want to thank you for your thorough
16 testimony. It's -- some people may not agree, but I've
17 really enjoyed listening to you explain this permit. So
18 thank you for that.

19 You heard in opening Mr. Gilbertz refer to the
20 unknowns in this permit. Do you remember him saying it's
21 like a black velvet bag?

22 A. I don't remember that.

23 Q. Well, I remember it. It was interesting.

24 Does an applicant ever know everything that it's
25 going to encounter in the process of mining for coal?

1 A. No, they don't.

2 Q. But isn't it true that the mine plan and the
3 reclamation plan and the narratives in the permit file are
4 designed to address those unknowns if they come up?

5 A. To the best of their ability, yes.

6 Q. Would you agree that the statutes and rules and
7 regs also establish performance standards so that any
8 issues not specifically identified in the mine and rec
9 plans can be handled?

10 A. Yes.

11 Q. I think you might have told us, but how long
12 have you lived in Sheridan County?

13 A. Thirty-five years.

14 Q. And I think you said you used to work out at Big
15 Horn Coal, right?

16 A. I did.

17 Q. Do you care about this area?

18 A. I do.

19 Q. I mean, do you -- do you take seriously your
20 mandate to protect the environment and the safety of the
21 people around this area?

22 A. Absolutely.

23 Q. Would you ever do anything to knowingly allow
24 the destruction of the resources in the Tongue River
25 Valley?

1 A. I would not.

2 Q. So do you feel like you did a good job in
3 evaluating Brook's permit application to make sure that
4 doesn't happen?

5 A. I do.

6 Q. How many permit -- well, you already told how
7 many permit applications you've been a part of. What's
8 the typical number of comments and objections that you see
9 in a coal permit or any permit you've been a part of?

10 A. The -- it's difficult to say. Each one's fairly
11 specific to the site, and so they vary. It can be as
12 little as 20 or 30 or as many as multiple hundreds, as in
13 this case.

14 Q. In your experience, have you seen permits that
15 have comments that have been offered in support of the
16 permit?

17 A. I have.

18 Q. Okay. Did you consider those supporting
19 comments in reviewing this permit?

20 A. We do.

21 Q. And what impact, if any, did that have on your
22 assessment of the technical adequacy?

23 A. It had no impact on the assessment.

24 Q. You told us about the permit process and what it
25 took to get us here. And I'm not going to rehash that.

1 But generally the completeness review and then the
2 technical adequacy review. But you haven't really talked
3 about all that much about what happens from this point on.
4 So if the EQC agrees with your conclusion that this permit
5 is technically adequate, you're going to recommend to the
6 director that this permit be granted, correct?

7 A. Yes.

8 Q. And there was a little bit of discussion about
9 this a moment ago, but the DEQ can still add conditions or
10 commitments to the state decision document, right?

11 A. Yes.

12 Q. So, for example, if it's concluded after this
13 hearing that there's still some uncertainty about the area
14 around TR-1 down on the Big Horn Coal property, you could
15 make a condition or commitment of the -- of the State
16 decision document that further study needs to be done,
17 correct?

18 A. I can.

19 Q. But in that case, you're still issuing a permit,
20 right?

21 A. Yes.

22 Q. You're just affixing conditions to it to make
23 sure that the concerns raised have been addressed.

24 A. Yes.

25 Q. Okay. Let's talk about subsidence. And I'm

1 going to try to let you know what -- where I'm going, so
2 that I don't -- I don't lose you. But if I get carried
3 away and you can't understand what subject I'm talking
4 about, let me know, okay?

5 A. I will.

6 Q. All right. So what are the general DEQ
7 standards regarding subsidence that must be met before a
8 coal permit can be issued?

9 A. The general standards, they vary depending on
10 the nature of the mine. By and large, the mines have the
11 permit -- underground mines permit have subsidence
12 positions built into the permit application. Many of the
13 mines that are utilized -- underground mines in
14 southwestern part of the state are larger-scale
15 underground mines that do subside. They're designed that
16 way. This one is not.

17 Q. So -- I mean, is there a performance standard
18 about how much subsidence is maybe okay with the Brook
19 Mine?

20 A. There is not.

21 Q. Okay. In fact, the -- the goal is thou shalt
22 not subside, right?

23 A. Exactly.

24 Q. Okay. What happens if there is subsidence out
25 at the Brook Mine?

1 A. Well, the mining operations have to cease
2 immediately. And we have to go in the field and make
3 evaluation with company representatives and everybody else
4 has interest in the area, determine the type of
5 subsidence, the nature of the subsidence, what may be
6 occurring under the ground if you see the subsidence
7 happen and try to put all the information together that we
8 have to try to figure out what's taking place at that
9 point.

10 Q. Okay. Let's take a quick look at Exhibit Brook
11 1, please. It's terribly small. We'll blow it up.
12 Maybe. Yeah, please.

13 We're going to give you a hard copy so you can
14 see that.

15 A. Thank you. I blame my glasses. These are new
16 glasses, but I have nothing to complain about because my
17 eyesight's actually better than it was.

18 Q. Well, your new glasses look pretty fly.

19 A. Oh, thank you.

20 Q. Okay. So you recognize this is an email from
21 you?

22 A. I do.

23 Q. And it's dated January 6, 2014, right?

24 A. It is.

25 Q. It looks like it's sent to someone named

1 paul.mccombs@cardno.com. Do you see that?

2 A. Yes, I see that.

3 Q. Do you remember sending this email?

4 A. I do.

5 Q. Do you remember why you sent this email?

6 A. I sent this email to forward information on to
7 Cardno for some requests that they had.

8 Q. And do you recall what Cardno was asking you
9 for?

10 A. Cardno wanted to know if there are any
11 underground mines in the state and where they were and
12 what some of the language might be in the permit
13 application.

14 Q. Okay. If you look at the second line of your
15 email, it says "You requested information on our DEQ
16 guidelines on subsidence control plans for permitting."
17 Do you see that?

18 A. Correct.

19 Q. Do you recall Mr. McCombs asking you for some
20 sort of guideline on subsidence control plans?

21 A. Correct.

22 Q. And what was your response?

23 A. We do not have specific guidelines to -- or
24 specific subsidence mitigation.

25 Q. But that doesn't change the fact that you have

1 an overall performance standard about thou shalt not
2 commit subsidence?

3 A. Exactly. No subsidence in this particular case
4 is allowed.

5 Q. So I want to dive into a couple of details about
6 the subsidence plan. And the reason I want to do this
7 is -- I mean, I don't know if you got the same feeling I
8 did, but on some of those questions about subsidence, I
9 was left with the impression that maybe you don't really
10 know what you're talking about. And I want to show,
11 through this process, based on what I've seen, I believe
12 you do.

13 So let's look at DEQ Exhibit 34. And if you
14 want, I know it's in the -- one of those binders in front
15 of you. I think it might -- oh, you have that already?

16 A. I think I actually have that one right here.

17 Q. And if it will help, DEQ Exhibit 34 includes the
18 Comment and Response Round 3.

19 A. Yes. It will be -- do you have a page for the
20 beginning of that?

21 Q. Well, I want you to look at DEQ Exhibit 34-102.
22 And we're going to pay particular attention to BJ Comment
23 52 for reference.

24 A. I have it.

25 Q. Okay. Are you Bj, Mr. Kristiansen?

1 A. I am.

2 Q. And was this Comment Number 52 your comment?

3 A. It was.

4 Q. All right. What was the nature of this comment
5 that you made?

6 A. These were some pieces of information I felt
7 were necessary to adequately create a mine plan in this
8 particular mine operation. And some of the requirements
9 that we would request in District 3 for the particular
10 operation.

11 Q. And, specifically, are you addressing questions
12 of subsidence here in Comment 52?

13 A. I am.

14 Q. Okay. You notice about halfway through the
15 first paragraph it says "A small sample of tests have been
16 run on roof and coal rock intervals and those tests have
17 been reported." Right?

18 A. Yes.

19 Q. Were those tests, in your mind, sufficient to
20 determine the strength of the roof, the coal and the floor
21 throughout the mine permit area?

22 A. It was not.

23 Q. Okay. So what did you ask Brook to do?

24 A. I asked Brook to place language in the mine plan
25 that would emphasize them taking samples of roof coal and

1 floor materials prior to mining each and every case.

2 Q. And what do you mean by each and every case?

3 A. Every single panel that was going to be
4 developed, consider a panel mining a certain direction of
5 a highwall miner, and then another panel might be going
6 the other direction, since they're down in the middle of
7 the coal. Each of those panels have to be defined by
8 roof, coal and floor samples and lab evaluation.

9 Q. Okay. So is it fair to say you were
10 specifically asking that for each of those panels, before
11 they can mine, they have to have strength tests on the
12 floor, the coal and the roof?

13 A. Yes.

14 Q. You go on to say "Our concern rests with the
15 competence of the overlying lithologies and their
16 possibility for subsidence." What do you mean by that?

17 A. We were concerned with the nature of the
18 materials in that area. And as I testified earlier, the
19 geology is fairly complex when you look at it on a
20 site-specific basis. And that means there's a lot of
21 different kinds of materials in the rock over that. So we
22 would need to do this to find what kind of rocks they are
23 and their relative strength before we can really sign off
24 on it.

25 Q. So do you recall when you made this comment?

1 A. That would have been early in the process. I
2 can't remember -- I can't remember the date. But it was
3 in the early 2015 time frame, I believe.

4 Q. So at least as early as 2015 you were smart
5 enough to identify we better get some specific floor coal
6 and -- and roof strength data before you can mine, right?

7 A. Yes. Yes.

8 Q. So what was Brook Mine's response?

9 A. They put a narrative in the mine plan that they
10 would perform those obligations prior to mining in area,
11 that they would gather that data, get the statistical
12 results put together and present those to us at that time.

13 Q. Was that satisfactory to you, Mr. Kristiansen?

14 A. It was.

15 Q. I think you said you looked at Dr. Marino's
16 report, right?

17 A. I did.

18 Q. Would you agree with me that the type of
19 site-specific information Dr. Marino is looking for is
20 exactly -- not exactly, but very similar to what you were
21 looking for?

22 A. It is.

23 Q. So when will this site-specific information be
24 provided?

25 A. Provided prior to mining in that particular

1 area.

2 Q. Okay. In the response to your Comment 52, Brook
3 refers to an MSHA ground control plan. Do you see that?
4 It's at the bottom of page Brook 34-102.

5 A. Okay. Yes, I see that.

6 Q. What is your understanding of what an MSHA
7 ground control plan is with respect to a highwall mining
8 operation?

9 A. The ground control program that MSHA would have
10 for a highwall mining operation would be significantly
11 similar to a conventional open-pit mine. And, in fact,
12 the most dangerous area of mining is at the highwall.
13 That, generally, is where most of the problems occur, as
14 it is in all other surface mines.

15 And so what MSHA does is they generate
16 requirements for the mine to have safety measures in place
17 during all aspects of mining, all the way from what's
18 called haul road speed limits to mine depths to bench --
19 safety benches placed in areas where there's softer
20 overburdens. MSHA essentially controls all the safety of
21 the mine particularly in those areas in the right of
22 mining phase.

23 Q. Do they also, if you know, have requirements
24 regarding safety factor for the coal pillars that are left
25 behind after mining?

1 A. They do.

2 Q. I'm going to get this wrong, but -- and I think
3 you alluded to some calculations that OSM or MSHA
4 requires. Do you know what those are called?

5 A. The calculations for the relative compressive
6 strength of materials?

7 Q. Well, essentially what I'm getting at is -- I'm
8 going to call it ARMPS. ARMPS?

9 A. Yes.

10 Q. Let's call that A-R-M --

11 A. P.

12 Q. -- P-S.

13 Do you know anything about that calculation or
14 that program?

15 A. That is the primary program that the OSM
16 utilizes to predict surface subsidence.

17 Q. And what's the result -- what number is
18 generated out of that ARMPS program?

19 A. Not to get into a very long discussion about the
20 science. They have been testing laboratory analyses to
21 infield practical applications of those numbers for
22 probably a hundred years. And what they found out over
23 all these years, OSM has with their resident mining
24 engineers, is that these can be predicted to a fairly good
25 extent, as long as utilized constant for the coal. Coal

1 is almost impossible to test. The nature of the coal
2 makes it that way. Coal has a lot of cleat and fracture
3 in it, so it breaks in a blocky occurrence. And when you
4 subject that to pressurization, this can fail in a lot of
5 different directions, depending upon the actual sample you
6 gather. So it can be totally off from what the
7 recommended amount is.

8 Q. That went way over my head.

9 A. I'm sorry.

10 Q. That's okay. I appreciate -- again, I
11 appreciate your thoroughness. Let me try to simplify it
12 for myself, and maybe you can help.

13 First I do want to point out, you are aware that
14 there was coal strength testing done on at least one
15 sample in this mine plan, right?

16 A. There was.

17 Q. Okay. So here's what I'm getting at with the
18 ARMPS. You have to input certain data points into the
19 program, right?

20 A. Correct.

21 Q. One of those data points is the strength of the
22 coal.

23 A. Yes.

24 Q. One of those data points is the strength of
25 the -- well, I guess the strength of the floor?

1 A. Yes.

2 Q. And one is going to be the strength of the roof,
3 right?

4 A. Yes.

5 Q. And isn't that why you have to have core samples
6 before you're going to mine through a particular panel?

7 A. Yes.

8 Q. Okay. So is it fair to say the only real
9 variable is the width of the coal that's left in place as
10 a support?

11 A. Yes.

12 Q. Okay. And then, as I understand it, when that
13 program is done, it spits out a safety factor number,
14 right?

15 A. Yes, it does.

16 Q. And there's a threshold that has to be met. Is
17 that your understanding?

18 A. Yes.

19 Q. Do you know what that threshold is?

20 A. Of competency, you mean, of the material? Or
21 I'm not sure what you're looking for.

22 Q. Do you know what the threshold number for the
23 safety factor is before MSHA will approve a subsidence --
24 a ground control plan?

25 A. Generally speaking, their number is a point

1 where you can receive 50 percent recovery of the coal and
2 utilize pillars in between those, that is nonsubsiding.
3 Once you cross that line taking 51 percent recovery, you
4 begin to see effects taking place.

5 Q. Let me ask the question this way. In -- in --
6 do you believe -- well, did you ask -- talk to anyone at
7 MSHA about what they require for their ground control
8 plan?

9 A. I did not.

10 Q. Okay. Do you understand that Brook will be
11 required to take samples for each panel as part of its
12 ground control plan?

13 A. It can be utilized in that way. There's
14 components there that MSHA regulates.

15 Q. So let's look really quickly at Exhibit Brook
16 12. The Powder River Basin Resource Council asked you a
17 question about where in the heck is the ground control
18 plan. Is that fair?

19 A. Yes.

20 Q. Do you remember them asking you this question in
21 this email?

22 A. I do.

23 Q. And what was your response?

24 A. The safety ground control plan is an enforcement
25 methodology that MSHA uses to perform their

1 responsibilities.

2 Q. So isn't it true that Brook can't begin mining
3 without an approved ground control plan?

4 A. Correct. They may not.

5 Q. Is that true even if DEQ grants this permit that
6 we're seeking today?

7 A. Absolutely.

8 Q. You talked about the training that you had --
9 the subsidence training you had with OSM. Was there
10 anything in particular about the training you think
11 council should know to give credence to your opinions in
12 this case?

13 A. The thing I did learn, I think above all things,
14 first of all, to identify the methodology of mining. It
15 has such a bearing on how the subsidence occurs in the
16 given areas of the mining over time. There are different
17 types of mining that are virtually no subsidence and other
18 kinds that plan on it. Longwall operation, for example,
19 plans on subsidence. It has to operate that way in order
20 to be economically feasible. And so highwall mining is
21 determined to be the least subsiding, the least impactful
22 type of mining that we have where you gather materials
23 underneath roof material.

24 Q. I don't necessarily want to take you through
25 other examples, just for the sake of time, but the example

1 that we just talked about in BJ Comment Number 52, did you
2 have other comments that you provided to Brook regarding
3 subsidence-related issues?

4 A. I had several more. I can't remember them right
5 off the bat.

6 Q. And whether you remember them or not, as you sit
7 here today, do you believe that all of your concerns were
8 addressed in subsequent responses from Brook?

9 A. I do.

10 Q. In fact, you -- you would never have agreed that
11 it was -- that the permit was technically adequate if they
12 hadn't properly satisfied your concerns. Fair?

13 A. Yes.

14 Q. Okay. So we won't bother going through all of
15 those. I do want to talk very quickly about monitoring,
16 subsidence monitoring and subsidence remediation. Okay?

17 A. Correct.

18 Q. You had many questions on cross-examination
19 about the commitment that Brook will monitor for
20 subsidence for a period of six months after mining. And I
21 think you said you didn't remember if that was the actual
22 number. Okay?

23 A. Right.

24 Q. What I'm more interested in is what happens if
25 subsidence does occur after six months?

1 A. They're still responsible for that subsidence.

2 Q. How long will Brook be responsible for repairing
3 the subsidence that they cause?

4 A. Throughout mine life and reclamation life.

5 Q. Is there a cutoff that we can say, "Brook,
6 you're done. You don't have to fix any more subsidence"?

7 A. Maybe that point in time when the mine is fully
8 reclaimed, has been released from its permit.

9 Q. And part of that, it's also true that release
10 from the permit means once the bond is completely -- the
11 reclamation bond is completely released, right?

12 A. Yes.

13 Q. Okay. We're moving right along here,
14 Mr. Kristiansen. Let's talk briefly about coal fires.

15 A. Okay.

16 Q. I get excited when I think about this subject
17 because of the amazing technology. Are you aware of any
18 known coal fires within the permit boundary as of today?

19 A. I do not.

20 Q. Okay. Does the possibility of underground coal
21 fires in the area change your opinion about the technical
22 adequacy of Brook's mine permit application?

23 A. No, it does not.

24 Q. There could be some underground coal fires out
25 there that we just don't know about, right?

1 A. It's possible.

2 Q. Okay. Have you seen coal fires that have been
3 encountered during active mining anywhere in the area
4 around where Brook's going to be?

5 A. I have.

6 Q. And are there steps that can be taken once you
7 discover those heretofore unknown coal fires so you can
8 keep mining?

9 A. Yes, there are.

10 Q. And have you seen that done?

11 A. I have.

12 Q. Do you have any reason to believe that that
13 couldn't be done in this case?

14 A. No reason to believe that, no.

15 Q. Would you agree with me that if you're going to
16 be a coal miner, you better be pretty flexible?

17 A. Yes.

18 Q. Got to adapt to changing situations, right?

19 A. Yes.

20 Q. But you're always under the -- the enforcement
21 and oversight of somebody like yourself at DEQ, right?

22 A. Correct.

23 Q. Are you satisfied with the Brook Mine
24 commitments as they relate to coal fires?

25 A. I am.

1 Q. Let's talk about groundwater. Okay?

2 A. Okay.

3 Q. You mentioned something you called the MODFLOW
4 model; is that correct?

5 A. Yes, it is.

6 Q. All right. Is DEQ aware of any other
7 groundwater modeling tools that operators have used other
8 than MODFLOW?

9 A. I can't answer that. That was all done by
10 Dr. Kuchanur.

11 Q. Yeah. Let me -- let me -- I'm asking the
12 question broadly. In this case, Brook used MODFLOW,
13 right?

14 A. Yes, they did.

15 Q. But are you aware of any other groundwater
16 modeling programs that have been used in the industry or
17 by other regulators?

18 A. There are other programs. I'm not familiar with
19 them at all.

20 Q. Okay. Does the word Line Sync mean anything to
21 you?

22 A. I've done those myself.

23 Q. What is Line Sync?

24 A. You establish a point of measurement, let's say,
25 for example, within coal trench, and you develop data

1 along that coal trench in the line. And there are
2 formulas to determine in different kind of conditions how
3 far out the mining will affect the coal-bed that you're
4 analyzing. And so what it will do is show you how far you
5 can go before you stop influencing that coal aquifer.

6 Q. So how does the MODFLOW model compare to Line
7 Sync?

8 A. MODFLOW is significantly more robust than Line
9 Sync is.

10 Q. I want to -- I wasn't going to ask these
11 questions because you did such a fantastic job yesterday,
12 but I think there's some confusion about cross-examination
13 now.

14 How would you characterize -- or rather would
15 you characterize the coal on the west end of the permit as
16 an aquifer?

17 A. No.

18 Q. Why not?

19 A. There's no water --

20 THE REPORTER: There's no water?

21 THE WITNESS: There's no water in it.

22 Q. (BY MR. SUTPHIN) So would you call the area of
23 the -- of the coal seams on the west end of the permit
24 area dry?

25 A. Yes.

1 Q. Okay. How would you characterize the overburden
2 in the west end of the mine permit area?

3 A. It too is dry.

4 Q. And, in fact -- I mean, I say west end, but
5 would you agree that it's the majority of the permit area
6 that would be considered dry?

7 A. I would classify 75 percent to 80 percent of the
8 area is dry.

9 Q. And this is based on sampling wells, in part,
10 right?

11 A. Yes.

12 Q. It's also based on your personal knowledge --
13 just your own personal knowledge of that area, right?

14 A. Yes. I've explored that area.

15 Q. So let's -- let's look at DEQ Exhibit 16. And
16 now we're going to transition into AVF.

17 A. Okay.

18 Q. If you want, Mr. Kristiansen, it might be easier
19 to look at the screen.

20 A. Yes.

21 Q. Let's just zoom in on the map.

22 Mr. Gilbertz was asking you questions about
23 this. Do you remember that?

24 A. I do.

25 Q. He was talking about the -- the drainage and

1 essentially how things are going to come down, and talk
2 about the interconnectedness of the coal seams with the
3 alluvial material. Do you remember all those questions?

4 A. I do.

5 Q. All right. So you've got this area identified
6 as potential AVF acreage, right?

7 A. Uh-huh.

8 Q. Okay. You just told me that 75 to 80 percent of
9 the mine permit area is dry, right?

10 A. Correct.

11 Q. So, in your opinion, is there a likelihood that
12 anything within the mine permit area is having an effect
13 on this potential AVF acreage?

14 MR. GILBERTZ: Objection. Calls for
15 speculation. He already said he doesn't know.

16 Q. (BY MR. SUTPHIN) You can go ahead and answer.

17 A. Please restate the question.

18 Q. Yeah, I'm -- what I'm getting at is -- I can't
19 restate it because I don't remember what it was.

20 A. Okay.

21 Q. But what I'm getting at is, if the area --
22 75 percent of the area, especially on the west side of the
23 permit, is dry, what -- what effect does that have on
24 recharging the AVF -- the potential AVF acreage?

25 A. It has no effect on AVF recharge.

1 Q. Let's look at this picture that we got to see
2 briefly.

3 MR. SUTPHIN: Except Carri has abandoned
4 me.

5 Can you pull up Fisher 1.001.

6 Q. (BY MR. SUTPHIN) Do you know the source of the
7 water that charges the potential AVF that we see in this
8 beautiful green photo?

9 A. That's the Tongue River.

10 Q. Okay. And how do you know that?

11 A. I've been in the area, so I recognize it.

12 Q. Okay. So is it more likely that that AVF is
13 charged by the Tongue River and not by the coal seams that
14 are in the dry portion of the mine permit boundary?

15 A. Yes.

16 MR. GILBERTZ: Objection. Beyond the scope
17 of this --

18 MR. SUTPHIN: All right.

19 MR. GILBERTZ: -- witness's expertise.

20 MR. SUTPHIN: Okay. So you can go ahead
21 and take that one down.

22 Q. (BY MR. SUTPHIN) Continuing on the subject of
23 AVF. Isn't it the applicant's job to provide the
24 information and the data so that the AVF determination can
25 be made by DEQ?

1 A. Yes.

2 Q. Okay. So just to be clear, Brook Mine doesn't
3 get to decide if something is AVF or not, right?

4 A. No, they do not.

5 Q. But they do provide you, DEQ, with the
6 information you need to make a determination?

7 A. Yes.

8 Q. Okay. Yesterday you talked about -- when you
9 were talking about AVF with Mr. Kuhlmann, you talked about
10 moving the Belle Fourche River. Do you remember that?

11 A. I do.

12 Q. You talked about returning it to original -- to
13 its original course and reestablishing the functionality
14 of the AVF. Remember that?

15 A. Correct.

16 Q. Do you know who designed that project to
17 reestablish the functionality of the AVF?

18 A. I do not.

19 Q. Do you know who designed restoring the river to
20 its original channel?

21 A. I do not.

22 Q. What about -- you mentioned the Rawhide Mine and
23 restoring the AVF functionality in that area. Do you know
24 who designed the project to restore AVF at the Rawhide
25 Mine?

1 A. I don't.

2 Q. Okay. Are you familiar with an example of
3 someone who actually mined through the Tongue River in the
4 area of the proposed Brook Mine?

5 A. I don't have direct experience with that.

6 Q. Do you -- have you heard any information about
7 Big Horn Coal mining through the Tongue River
8 historically?

9 MS. ANDERSON: Objection. Asked and
10 answered.

11 Q. (BY MR. SUTPHIN) Yeah. I was just giving you a
12 little more detail, so I'll ask it again.

13 A. Okay.

14 Q. Do you have any information or have you ever
15 heard of the Big Horn Coal Company mining through the
16 Big -- the Tongue River historically?

17 A. I did not work at Big Horn at that time. I
18 heard they did that, yes.

19 Q. We'll just leave it at that, then, if you don't
20 have any more details about it.

21 You mentioned the AVF determination you made up
22 on Slater Creek. Okay? Remember that?

23 A. Yes, I do.

24 Q. Okay. And I think you said something about how
25 it was in an area where there was an old pond --

1 A. Correct.

2 Q. -- historically?

3 A. Correct.

4 Q. Okay. I think you said something to the effect
5 that Brook Mine isn't proposing to mine through that newly
6 identified AVF. Fair?

7 A. Correct.

8 Q. Okay. What about any other AVF in the mine
9 permit area? Are you aware of designated AVF that Brook
10 Mine is proposing to mine through?

11 A. Not within the permit area, no.

12 Q. And I think you said that if they come across
13 some heretofore unknown AVF, that you're going to stop
14 them and evaluate it, right?

15 A. Correct.

16 Q. Okay. Let's talk about this continuous miner.
17 Okay, Mr. Kristiansen?

18 You used the word "directionally intelligent."
19 Do you remember that?

20 A. I did.

21 Q. Is that important to you in evaluating the Brook
22 Mine permit?

23 A. Absolutely.

24 Q. Why?

25 A. Because you can tell at any point in time where

1 the head of that continuous miner is at.

2 Q. And I think you talked about how it's important
3 to be able to shoot straight holes so that you don't cross
4 and cause subsidence. Is that a fair summary?

5 A. Correct.

6 Q. Okay. You mentioned gamma probe. What in the
7 world is a gamma probe?

8 A. It is a tool that counts the natural
9 radioactivity in the materials to try to determine what
10 they are. Coal has almost no radioactivity at all in it,
11 and so it shows up as almost a blank spot. And so as long
12 as it's reading low analyses, you're in the coal in that
13 particular area. When you start getting higher, you're
14 getting out of the coal.

15 Q. Okay. And why is that important -- or is that
16 important in your consideration of the Brook Mine permit?

17 A. That's critical, because then you don't wander
18 up into the roof or down into the floor.

19 Q. And just so I understand, and maybe for the sake
20 of the council, is that gamma probe the same sort of
21 technology that helps when you're doing core samples and
22 core logs so you can identify where the coal seam is?

23 A. Yes, it is.

24 Q. And I think there's even something called a
25 gamma log. Does that sound --

1 A. Gamma log, yes.

2 Q. Okay. Are you aware of a feature on the
3 continuous remote highwall miner that enables -- that
4 basically is a camera that allows the operator to see what
5 the miner head is doing underground?

6 A. They do exist. I didn't know whether they were
7 utilizing one of those or not.

8 Q. We won't go any further with that.
9 You have testified about production rates of
10 approximately 50 percent of the coal. Remember that?

11 A. I do.

12 Q. What is that based on?

13 A. That is based on the -- the production rates
14 that are shown in the mine plan and the recovery rates
15 that are exemplified in the mine plan.

16 Q. Would you agree that the current mine permit
17 file is sufficiently detailed to allow DEQ to make
18 adequate determination of technical compliance?

19 A. It is.

20 Q. Before we leave that subject. Do you have any
21 understanding about what MSHA will require in terms of an
22 engineered design for each mine panel?

23 A. I do not know.

24 Q. Okay. You talked about how after the permit was
25 deemed complete -- let me -- I'm going to get this wrong.

1 But what do you call that first step that DEQ performs
2 once they get the permit application?

3 A. Complete.

4 Q. Okay. Is there a public notice that goes out
5 after that?

6 A. There is. The first public notice on the permit
7 application goes out after that.

8 Q. So at the time of the completeness
9 determination, is the permit file open for public review?

10 A. It is.

11 Q. I'm going to look at Exhibit DEQ 12, Number 134.
12 This is the Skittles map.

13 A. Okay. We should have left it out.

14 Q. You know what? You don't even need to open it,
15 Carri's going to pull it up and just zoom into the
16 Skittles part.

17 What is your understanding about the maximum
18 capacity for reach of the highwall miner into the coal
19 seam?

20 A. Particular mining -- miners they're using has
21 capacity of approximately 2,000 feet of lateral movement.

22 Q. Okay. So is it your understanding that the
23 Skittles on this map are showing the maximum extent or
24 2,000 feet from the center of the pit?

25 A. They're either controlled by the permit boundary

1 or other constraints or 2,000 feet.

2 Q. So do you -- do you know, once the mining
3 actually begins, is every tunnel going to go out 2,000
4 feet?

5 A. No.

6 Q. Why not?

7 A. There are constraints in some cases. Like I
8 said, they may be close to permit boundary, which they
9 can't cross, whether on the surface or underground. And
10 there are other areas where there may be geologic
11 processes taking place, such as a fault zone. Where they
12 can mine to the fault zone but not pass because the coal
13 is no longer there. And there are other constraints that
14 may show up during mining that prevent an exact 2,000
15 feet.

16 Q. All right. Let's look quickly at Powder River
17 Basin Exhibit Number 24. Do you remember answering some
18 questions about these interrogatory answers?

19 A. I do.

20 Q. And I think you said that you helped draft these
21 answers, right?

22 A. I did. Along with our team.

23 Q. Okay. Did you feel intimidated by Powder River
24 Basin Resource Council when they submitted these questions
25 to you?

1 A. No.

2 Q. Why not?

3 A. We understood that they were being -- presenting
4 concerns of local landowners. They had legitimate
5 concerns, and they were trying to address those so we were
6 at least familiar with those.

7 Q. Let's look at Powder River Basin Resource
8 Council Exhibit Number 89.

9 If you want, Mr. Kristiansen, I'll hand you a
10 hard copy.

11 A. I appreciate that.

12 Q. It's kind of small up there.

13 This is the email where you made some comments
14 about maybe some of the landowner objectors' motives. Do
15 you remember your testimony about that?

16 A. Yes, I do.

17 Q. And if I understand it correctly, you've -- you
18 have said you don't feel that way any more, right?

19 A. No, I don't.

20 Q. Okay. Very end of the first page of Exhibit 89,
21 you say, "The way that I approach this is that LQD
22 followed 35-11-406 and other, pertinent rules and
23 regulations..." Do you see that?

24 A. I do.

25 Q. Do you still feel that that's true?

1 A. I do.

2 Q. And then you go on to say, "...to determine that
3 the permit application satisfied" -- turn the page -- oh,
4 I turned the page too soon -- "satisfied all aspects of
5 the law."

6 Mr. Kristiansen, do you still agree with that
7 statement?

8 A. I do.

9 Q. What about the next statement, "This took three
10 years, six rounds of input from examiners, the involvement
11 of a minimum of 20 experts in ten agencies, and an action
12 from the EQC to get us to this point." Do you still agree
13 with that statement?

14 A. I do.

15 Q. How long did you say you've been the permit
16 coordinator on the Brook Mine file?

17 A. Four years.

18 Q. Was there a permit coordinator on the file
19 before you?

20 A. There was and we're not quite sure. I believe
21 it was a gentleman that's now retired from DEQ.

22 Q. But, I mean, I just -- based on what you said
23 yesterday, I just wanted to make sure. As far as you
24 know, this wasn't just an uncoordinated permit on DEQ's
25 side of things before your involvement, was there?

1 A. No. There was no permit application at that
2 time.

3 Q. Well, my esteemed co-counsel has asked me to
4 follow up on one thing on Exhibit 89. If you look at the
5 second paragraph on page 2.

6 A. Okay.

7 Q. Second sentence, "Our role has always been as an
8 enforcement agency, tasked with stewardship of the land
9 being mined and ensuring prompt mitigation from the
10 impacts of the extraction of the resource." Did I read
11 that right?

12 A. Yes, you did.

13 Q. Do you still stand by that statement,
14 Mr. Kristiansen?

15 A. Absolutely.

16 Q. And that's kind of where we started, right?
17 You're not going to do anything to knowingly shirk that
18 responsibility, are you?

19 A. No.

20 Q. In fact, you're going to be checking up on Brook
21 Mine at least every month, right?

22 A. At least every month, yes.

23 Q. I'm almost done, Mr. Kristiansen.

24 How would you -- well, no. Let me ask it this
25 way. This is a tough question. How many man-hours has

1 DEQ committed to the Brook Mine permit file to date? And
2 I don't need a precise number.

3 A. That is a difficult number to judge. I know my
4 man-hours because I keep track of them. And I've done
5 over 2400 hours on this project.

6 Q. Hold on. Let me make sure I heard that right.
7 How many hours have you personally spent on this file?

8 A. 2400 hours.

9 Q. Do you have any idea how long any of your
10 colleagues at DEQ have spent on this file?

11 A. Some of them with as little as possibly 20,
12 25 hours. And others in the 100 to 110 hours range.

13 Q. How would you describe the level of expertise of
14 the DEQ staff and personnel involved in reviewing the
15 Brook Mine permit?

16 A. Based on the individuals I worked with and the
17 actions we performed, the expertise level is as high as --

18 THE REPORTER: As high as?

19 THE WITNESS: It's as high as anything in
20 the industry.

21 Q. (BY MR. SUTPHIN) How would you characterize the
22 quality of DEQ's work on this permit file?

23 A. I think it's excellent.

24 MR. SUTPHIN: I don't have any other
25 questions for you. Thank you, Mr. Kristiansen.

1 CHAIRMAN BAGLEY: Thank you, Mr. Sutphin.

2 We will take a 10-minute break, and then we'll
3 have any questions from council, and you'll have an
4 opportunity for redirect.

5 MR. KUHLMANN: Thank you, Mr. Chairman.

6 (Hearing proceedings recessed

7 2:59 p.m. to 3:14 p.m.)

8 CHAIRMAN BAGLEY: Let's begin. I just want
9 to mention if there's an objection, please wait until I
10 have the chance to say something about it. I'm actually
11 not asleep up here, but I'm slow. So let me get a chance
12 to do that. That way everyone's objections have a chance
13 to be heard.

14 All right. Any questions from council? We'll
15 start -- no, I don't want to start with you. You want
16 everyone else's questions.

17 COUNCIL MEMBER FLITNER: I can start. Mine
18 are easy.

19 CHAIRMAN BAGLEY: All right. Go ahead,
20 Tim.

21 COUNCIL MEMBER FLITNER: Pretty quick.

22 EXAMINATION

23 Q. (BY COUNCIL MEMBER FLITNER) You mentioned early
24 on, I think, if I heard it right, I think maybe you said
25 it changed. Did I hear that one of those panels the

1 boundary was 100 feet from the Tongue River? Is that
2 still the case?

3 A. It was a hundred feet from Slater Creek.

4 Q. Slater Creek.

5 A. Yes.

6 Q. Which is -- I mean, it's a -- it runs water
7 year-round still?

8 A. It runs water in the upper reaches and then goes
9 dry in the summer months, lower down where they're inside
10 the mine permit area. So it's ephemeral in that
11 particular area until it gets over by the interstate,
12 where it picks back up again. So it's dry for most of its
13 course except for that one corner.

14 Q. So -- and what's the distance between the end of
15 the panel and the Tongue River on those other ones?

16 A. Oh, the Tongue River? Thousands of feet.

17 Q. Because it looks closer than that.

18 A. Oh, excuse me. I misspoke. In that area of
19 TR-1, they are -- best of my knowledge, they are
20 approximately, oh, 300 feet in most places. They have
21 been pulled back from that particular area, so a little
22 bit shorter than when they started.

23 Q. So -- and how deep are those panels?

24 A. In that particular area, I think about 170,
25 200 feet deep. Don't quote me on that. I'm trying to

1 remember.

2 Q. So probably those voids are going to fill with
3 water.

4 A. Eventually, yeah, they sure will.

5 Q. And once they do, then the table comes back to a
6 normal standard, wherever it was. And since the water
7 table is -- is -- I think was stated it was probably
8 filled with the Tongue River anyway --

9 A. Sure.

10 Q. -- it doesn't have that much to do with the
11 coal, so that would bring the water table to a -- to a
12 normal level. If you had a well anywhere in that area,
13 once that's -- once those voids are backfilled with water,
14 then it's kind of going to be a normal water table again,
15 isn't it?

16 A. Yes, it is. Dr. Kuchanur will cover that in
17 detail.

18 Q. Okay. So we'll get into that.

19 A. Good chance.

20 Q. The other thing is, I'm a little uncomfortable
21 with, you know, when we start talking about zero
22 subsidence. I don't think you're ever going to get me
23 convinced there won't be subsidence. Unless you figure
24 out a way to defy gravity, I think that's a fact of life.
25 I think you're going to see it, might be measured in

1 inches, but it's -- you mix water and soil and voids,
2 there's to be going subsidence. So mostly what we're
3 going to come down to in the end is how do you mitigate
4 it?

5 A. Correct.

6 Q. And -- and are the -- is the mitigation then in
7 that process far less invasive than other coal mining
8 procedures? Because the hand we're dealt here is this is
9 a coal mine and has been designated coal mine since 1950s,
10 if I'm not mistaken.

11 A. Correct.

12 Q. And the easement's in place and the ruling
13 that's behind us already, et cetera, et cetera --

14 A. Right.

15 Q. -- I would think that -- to your knowledge, is
16 there a less invasive way to mine coal than this one?

17 A. No. This would be the least invasive way to
18 mine coal.

19 Q. So, I mean, there's a few things I think need
20 tweaked here, but if I'm the landowner here, I'm kind of
21 liking this method compared to tearing the top off this
22 ground, if I'm Padlock or another landowner. I mean, I
23 might want to change a few things, but there isn't a
24 better way, right, that we know of today?

25 A. As far as I know of right now, there is not.

1 Q. So worst-case scenario here is there is some
2 subsidence --

3 A. Correct.

4 Q. -- which can be dealt with?

5 A. Correct.

6 Q. Even in TR-1, you have ways to deal with that,
7 right? Which we'll go into a little bit later, probably?

8 A. We should. There's a way of designing the pit
9 that takes care of that.

10 COUNCIL MEMBER FLITNER: Okay. That's all
11 I've got.

12 CHAIRMAN BAGLEY: Thank you.

13 Meghan.

14 COUNCIL MEMBER DEGENFELDER: Just a couple
15 of quick questions.

16 EXAMINATION

17 Q. (BY COUNCIL MEMBER DEGENFELDER) Kind of on that
18 note, in reference to the MSHA ground control plan and so
19 it was referenced, in a question that was asked of you,
20 about strength testing at least one panel.

21 A. Correct.

22 Q. And then I think maybe confusion is that enough
23 or do you feel that as subsequently moving to those next
24 panels and continuing testing before mining, is that
25 enough, do you feel?

1 A. I do at this time. The one sample was enough to
2 indicate to me some real general terms as to the strength
3 of those materials. I wasn't looking at the coal, per se,
4 because OSM has essentially defined lab tests don't work
5 very good for coal. Because there's so many constituents
6 in that stuff. It will break at a look and sometimes it
7 will hold up all day.

8 And so what we're doing is looking at roof and
9 floor materials. And I saw enough in that to feel more
10 comfortable with the nature of those materials. Now,
11 they're going to have to go each panel at least one core
12 prior to developing the panel so that we have that comfort
13 factor on the roof and the floor.

14 Q. Okay. Thank you. And then in your expertise or
15 your knowledge, the Fisher property -- I'm still having
16 some confusion whether or not that water is derived coal
17 seam or Tongue River. Do you have --

18 A. If I were to estimate, the chances of that I'd
19 say probably 98 percent Tongue River, 2 percent the other.
20 And that's off the wall. It's just --

21 Q. Right. I understand.

22 A. -- an estimate.

23 COUNCIL MEMBER DEGENFELDER: That's all I
24 have at this time.

25 CHAIRMAN BAGLEY: Thank you.

1 Go down to the end. Deb.

2 COUNCIL MEMBER BAUMER: Thank you,
3 Mr. Chairman.

4 EXAMINATION

5 Q. (BY COUNCIL MEMBER BAUMER) I have a question
6 about just following up on Tim and Megan there with the
7 subsidence and the 50 percent extraction --

8 A. Sure.

9 Q. -- how that actually gets monitored. How do
10 they know when 50 percent is gone?

11 A. You can do a --

12 Q. How does DEQ know that?

13 A. We can do a purely arithmetic way of looking at
14 it. So if the drifts are 12 feet wide and the ribs are
15 12 feet wide, that's 50 percent. Now, they're a unit.
16 You have a drift area and you have a rib, and those
17 two units comprise what would be considered to be a mining
18 unit. And obviously offset again, do another 12-foot
19 drift with another 12-foot rib.

20 So what we do is look at the volume of coal in
21 that particular area. Say there was 10 million tons of
22 coal in this area. You mine 5 million tons. This --
23 these are numbers that are reproducible. We can actually
24 look at these numbers and gain these from other sources so
25 we know they're pretty close to spot on.

1 Q. So the information will come from Brook that you
2 then will analyze to see if rather than that 50 percent?

3 A. Their miner records its position at all times.

4 Q. Oh, yeah.

5 A. And so -- and it records width and depth because
6 it does change as it goes through that coal-bed. Because
7 the coals thin out too in places. So it will follow
8 those. It keeps track of all that stuff.

9 Q. And where does your you called it rule of thumb
10 on this 50 percent thing come from?

11 A. That is an Office of Surface Mining graph that
12 was built to utilize kind of a quick way of looking at
13 potential subsidence in areas, depending upon mining
14 technique. And the graph is in one of those pieces of
15 that textbook that they had gotten from OSM. And it's
16 just a plain old straight graph, and anything less than
17 50 percent, there's no subsidence, and when you get to a
18 hundred percent there's total subsidence. So there's a
19 curve that runs down through there that defines the
20 amounts of subsidence, given the recovery rate.

21 Q. There's been talk about conditions of approval.
22 Is there a document that you can point me to that has some
23 conditions of approval already or is that something that
24 happens -- I'm not sure when any conditions of the
25 approval take place --

1 A. There are other --

2 Q. -- or if that's in there someplace --

3 A. There are --

4 Q. -- because I don't have --

5 A. Yep. There's other mine permits that have
6 conditions on them.

7 Q. Uh-huh.

8 A. Whether they were original or came during one of
9 the 6 terminals. But there are quite a few of those in
10 our office that we have that can be examined, our Cheyenne
11 office.

12 Q. I mean on this permit?

13 A. On this particular permit?

14 Q. Yeah.

15 A. No, we haven't defined any of those yet.

16 Q. Okay. Then I won't worry about it.

17 COUNCIL MEMBER BAUMER: That's all I have,
18 Mr. Chairman.

19 CHAIRMAN BAGLEY: All right. Thank you.

20 Nick?

21 COUNCIL MEMBER AGOPIAN: No, I don't -- I
22 don't know that I have any questions at this point.

23 CHAIRMAN BAGLEY: That's good, because
24 Megan would like to ask another question.

25 COUNCIL MEMBER AGOPIAN: There ya go.

1 COUNCIL MEMBER DEGENFELDER: I'll just
2 steal it from ya.

3 EXAMINATION

4 Q. (BY COUNCIL MEMBER DEGENFELDER) Sorry. I just
5 realized I had one other question.

6 In relation to TR-1, can I just have
7 clarification on whether or not in reference to the
8 drilling logs and whether or not dry or not dry, that
9 discussion that we had, whether or not you feel that the
10 permit is technically accurate.

11 A. I do in that particular area, and the only
12 reason is because it's all backfill. And we have dealt
13 with backfill in the past. If we utilize constants that
14 we've seen in other areas that had backfill and utilized
15 for that area, then it all works fairly effectively. If
16 it was native rock, then I would have some concern. All
17 pretty much backfill material from the old Big Horn Mine.

18 COUNCIL MEMBER DEGENFELDER: Okay. Thank
19 you.

20 CHAIRMAN BAGLEY: All right. Meghan Lally.

21 COUNCIL MEMBER LALLY: Okay.

22 EXAMINATION

23 Q. (BY COUNCIL MEMBER LALLY) I have a couple of
24 questions. One is how do we determine if subsidence on
25 the upper lines that are above -- they're above the

1 proposed mine --

2 A. Correct.

3 Q. -- isn't caused by the new mine as opposed to --
4 because you were saying that Brook would only be
5 responsible for subsidence into its own mine shafts.

6 A. Correct.

7 Q. But if there's blasting underneath an old
8 mine --

9 A. Okay.

10 Q. -- would that -- and it causes subsidence in
11 that upper mine -- I guess that's my question. How -- how
12 is Brook not causing that particular subsidence?

13 A. Okay. Mr. Emme will cover the blasting aspect
14 of that to explain how it works in this particular
15 instance. In these places where you only have a single
16 box cut and that's the only place we blast, and so all of
17 those panels that go out are not blasting. Simply grind
18 their way down through there. So those aren't
19 consistently blasting.

20 Q. Not just blasting, but disturbance by big
21 machine underneath.

22 A. Sure. And that's almost impossible to tell in
23 some cases as to what subsided. I think the assumption we
24 might make is that perhaps it was instituted possibly by
25 some of Brook's operations. We'll have to look at it very

1 closely. And if we can't determine, then we'll have to
2 fall back to some principles that we established during
3 some of our examinations of those. We may have to work
4 out processes as we're going to see how it works.

5 Q. And how will that subsidence be mitigated if --
6 I mean, would Brook pay for it? Would the State have to
7 pay for it? Because obviously those mines are old -- old
8 mines.

9 A. Right. It depends on the nature of the
10 subsidence. In some cases it's an observation technique
11 that's taking place when you may have -- maybe there's a
12 pit that fill in that's 3 feet deep and 5 feet wide.
13 Something fairly minor like that, observation is the key
14 to a lot of those. And in some cases when subsidence --
15 if it happens where it's gross and overt, we'll have to
16 generate some fairly stringent control programs to get
17 mitigation on that.

18 Q. Okay.

19 A. Our primary concern is what is it doing to the
20 environment during the moment it's occurring so that
21 vegetation, wildlife and everything is protected. And in
22 some cases, mitigation may be worse than leaving
23 subsidence alone. I don't know. I've seen those where
24 they happen where you get some subsidence. It ceases.
25 You have a hole develop. You get some trees growing up

1 out of that because there's more water in there. So there
2 can be benefits as well. So we have to be careful what we
3 do in our program.

4 Q. Okay. And then my second question, kind of
5 going back to Big Horn's questions about Section 50 -- 15
6 and 22. Why do you -- you may not know. Why weren't
7 those checked in the same way? Was there lack of
8 permission? Was there the assumption that it was backfill
9 so they already knew it was there? Do you --

10 A. There were some landowner constraints in that
11 particular area at the time. And there were some
12 difficulty in determining access at that time. And so we
13 allowed them to not have to sample that area simply
14 because they could not get to it at that moment. And so
15 realizing that they were -- one of the conditions we're
16 probably going to be working on is where they have to put
17 those new samples prior to mining. That's probably going
18 to be one of the areas they'll have to sample.

19 COUNCIL MEMBER LALLY: Thank you.

20 CHAIRMAN BAGLEY: Well, thank you very
21 much.

22 Oh, another question. Okay. Go ahead.

23 COUNCIL MEMBER BAUMER: Sorry.

24 EXAMINATION

25 Q. (BY COUNCIL MEMBER BAUMER) I did have one other

1 thing, and it was a follow-up to Big Horn Coal's questions
2 on cross-examination. And I wrote down that you said that
3 this permit was not technically accurate or adequate in
4 the testing of the dry -- dry statements made where the --

5 THE REPORTER: I'm sorry. I can't hear.

6 Q. (BY COUNCIL MEMBER BAUMER) Oh, the dry -- the
7 statements made about the dry areas in the permit.

8 A. I don't remember saying that. It is adequate in
9 those areas, primarily because the lack of any information
10 sometimes is information itself. And those areas we
11 didn't get samples. We couldn't get results because they
12 were too darn dry. So if I -- if I in any way imparted
13 that it was not adequate, that is not correct.

14 Q. Okay.

15 A. I may have --

16 THE REPORTER: I'm sorry. That last --

17 THE WITNESS: I may have misspoken.

18 COUNCIL MEMBER BAUMER: I'm through.

19 CHAIRMAN BAGLEY: Okay. I want to thank
20 you, Mr. Kristiansen. You've been at this a while. I
21 still have some questions, though. Hopefully they won't be
22 too strenuous.

23 EXAMINATION

24 Q. (BY CHAIRMAN BAGLEY) I'm sitting here listening
25 and I can't remember -- maybe I should know, but I can't

1 remember how many coal beds are in there in this area?

2 A. There are a lot of coal beds in this area. I
3 can think of seven right off the bat that are minable.

4 Q. Okay. And I guess I mean just in the Brook Mine
5 permit area.

6 A. In the Brook Mine permit area?

7 Q. Yeah.

8 A. There are three primary coal beds in the Brook
9 Mine permit area.

10 Q. Okay. And could you just mention those again?

11 A. The topmost bed is call the Monarch coal.

12 Q. Monarch.

13 A. And it was the primary target of Big Horn Coal
14 Company when they were mining that area. It's a nice,
15 thick coal bed. It's fairly uniform in that area. It's
16 got high BTUs. It's a pretty nice target.

17 Q. Okay.

18 A. So the pits were set where the coal was the
19 thickest.

20 Q. So Big Horn Coal mined in the Monarch.

21 A. Generally they did. There were a couple other
22 pits that mined other small local seams.

23 Q. Okay.

24 A. That was the primary target.

25 Q. And then some of those historic mines that we

1 saw, like the Acme Mines and things, what -- do you know
2 what bed they were?

3 A. They were in the Monarch coal, by and large.

4 Q. Okay.

5 A. Primarily because it was the best coal in this
6 area. The Carney coal, which is below that, is the target
7 for Brook Mine.

8 Q. Okay.

9 A. It's thinner. It has a few more splits in it
10 because the intelligent head they got on that system, they
11 can mine and not worry too much about thickening and
12 thinning and those things.

13 Q. Okay.

14 A. And then the Masters bed below that, it's their
15 bottom target.

16 Q. So how deep was the Monarch bed?

17 A. In -- in places it's almost at the surface.

18 Q. Okay.

19 A. The burn in that area, red scoria that we have,
20 is all Monarch burn, by and large.

21 Q. Okay.

22 A. And so once you get in behind the burned area,
23 get back into the coals, as a lot of the mines have done
24 over in the eastern part of the basin.

25 Q. So it's up near the surface. How did deep is

1 the Carney bed?

2 A. Oh, it varies from outcrop, all the way to
3 multiple hundreds of feet.

4 Q. And in the Brook Mine plan, about -- is it -- we
5 have that variation of the depth throughout their mining?
6 Are they are picking up mining into the consistent depth
7 throughout that?

8 A. No. It does vary primarily because the beds
9 thicken and thin and move very gradually over distances.
10 As those depositional areas were moving back and forth
11 when the river was going down through there. So they're
12 not consistent in that manner, and so they're a little bit
13 tricky to mine those. Surface mine has a harder time with
14 it because they are tricky. You might run out of them
15 suddenly and if you move 20 million yards of dirt and you
16 got out of the coal mine, it's not good. So this is --

17 Q. So -- I'm sorry.

18 So let me ask question a little bit different.
19 What's the -- sort of distance -- vertical distance
20 between the Monarch and Carney beds?

21 A. Between 70 and a hundred feet.

22 Q. Okay. So 70 to a hundred feet, and it will
23 move -- where they are in relation to the surface depends
24 on how the -- the geology and what's happening on the
25 surface, but the beds stay pretty uniformly 70 to hundred

1 feet apart?

2 A. Fairly uniformly. They do vary a little bit
3 over distance. But any time you use one discrete area,
4 you're pretty consistent.

5 Q. Okay. Okay. Now, the type of mining that's
6 been done -- and people have talked about subsidence a
7 lot. Obviously an important question. I want to make
8 sure I understand this. So the -- the machine goes in and
9 it's going to take a 12-foot-wide, 11-feet-high, and it's
10 going to go down up to 2,000 feet into the -- into the
11 mine --

12 A. Correct.

13 Q. -- or into the bed.

14 A. Yep.

15 Q. And then we're going to take a 12-foot break; is
16 that correct?

17 A. Yes.

18 Q. And then we're going to take another -- bring
19 it. So a 12 foot of coal -- and you described it just
20 recently here as a rib. So that -- will that be a
21 continuous rib all the way to that same 12 feet --

22 A. Yes, it will.

23 Q. -- or they be punching holes through there?

24 A. No, it will be going all the way to the bottom
25 of the face where they stop in their drifts when they put

1 the -- the continuous miner down through there. So it
2 will be these series of ribs that run down through there
3 from the surface all the way to the end of the mine. And
4 that's why it's primarily nonsubsiding is because the
5 support that exists.

6 Q. So it's not a pillar --

7 A. No.

8 Q. -- but almost like a wall?

9 A. It is, for all intents and purposes.

10 Q. Okay. Seven pages of question. No, not that
11 many. Sorry.

12 COUNCIL MEMBER FLITNER: You're getting as
13 bad as they are.

14 CHAIRMAN BAGLEY: Yeah.

15 Q. (BY CHAIRMAN BAGLEY) So how deep is the trench,
16 then, that has to be put in?

17 A. It varies, of course, because of the topography.
18 But what they've attempted to do is in most of the areas
19 where there's maybe a swale, where you may lose a little
20 bit of overburden, you try to put that there's a minimal
21 amount of overburden to remove in the box cut.

22 Q. Okay.

23 A. And so can be almost any depth. There's
24 places where it's probably less than a hundred feet.

25 Q. Okay.

1 A. Part of the problem there for a surface mine is
2 the box cut is fine, going either direction, you get under
3 a ridge again. So that's essentially how it will work.
4 I'm trying to find the least amount of overburden in box
5 cut. Other places, there are design considerations to be
6 made.

7 Q. How wide is that cut, then?

8 A. 150 foot across the bottom.

9 Q. 150 foot across. And how long are they,
10 typically? I think some of them are different, but --

11 A. 2 to 3,000 feet.

12 Q. Okay.

13 A. Mining conditions will dictate that in some
14 places.

15 Q. Right.

16 Okay. So will there be an effect on the Tongue
17 River by any of the mining, as you see it?

18 A. Dr. Kuchanur has studied that, and I prefer him
19 to answer that question --

20 Q. Okay.

21 A. -- during his testimony.

22 Q. Okay.

23 A. So that would be --

24 Q. And then are there any structures in the permit
25 area that are above where the mine will be? Like will

1 the -- the mine panels go underneath structures on the
2 surface?

3 A. I don't remember any at this point. That area
4 has been -- it's a mining area and agricultural area.
5 There's a lot of ranching that takes place in there.
6 Grazing.

7 Q. Uh-huh.

8 A. And there are not any houses or sheds or barns
9 that we know of in that particular area.

10 CHAIRMAN BAGLEY: Okay. And that was all
11 the questions I had. Does the council have any more
12 questions?

13 COUNCIL MEMBER AGOPIAN: I'll ask --

14 CHAIRMAN BAGLEY: Yes, please.

15 EXAMINATION

16 Q. (BY COUNCIL MEMBER AGOPIAN) Just --
17 Mr. Kristiansen, in understanding the process of where
18 we're currently at. I just want to confirm I understand
19 correctly that while you received objections, you received
20 public input, you still have taken those into
21 consideration and revised in the mine plan that went out
22 for public hearing earlier this year; is that correct?

23 A. Correct.

24 Q. And that you still have the opportunity to make
25 changes to the mine plan, as originally proposed, either

1 in -- with that being significant changes themselves or
2 conditions of approval, you'd be able to address any of
3 those objections that you feel are valid, that need to be
4 addressed before the board?

5 A. We do. We have several methodologies we can use
6 depending upon the nature of the -- of the complaints or
7 the issues as they arise.

8 Q. And down the road, if the permit reaches the
9 director and if the director approves the permit, it's my
10 understanding that DEQ still retains significant amount of
11 regulatory discretion under its authority to address any
12 unforeseen issues that may not be specifically addressed
13 in the mine plan?

14 A. Absolutely.

15 Q. And there's nothing in that mine plan that
16 limits their discretion or limits their statutory
17 regulatory authority?

18 A. No, there is not.

19 COUNCIL MEMBER AGOPIAN: Thank you.

20 CHAIRMAN BAGLEY: Thank you.

21 Mr. Kuhlmann, a chance to do any redirect, if
22 you'd like.

23 MR. KUHLMANN: Thank you, Mr. Chairman. I
24 have some questions. I'll try to keep them short.

25 REDIRECT EXAMINATION

1 Q. (BY MR. KUHLMANN) First, Mr. Kristiansen, you
2 had been asked about a curve that OSM had prepared or
3 included in their training documents related to the
4 50 percent recovery rate?

5 A. Correct.

6 Q. Is that correct?

7 Could you please turn to Exhibit 17 -- DEQ
8 Exhibit 17. I believe it will be in one of the binders
9 that has multiple exhibits in it. Tabs.

10 A. It's -- let's see. Is it up here, you think?

11 Q. It might actually be on the corner closest to me
12 of the table.

13 A. This one? It is. I have it.

14 Q. Can you turn to page 17 -- DEQ 17-006.

15 A. 006?

16 Q. Correct.

17 A. Yes.

18 Q. Can you tell us, is this -- the graph on this
19 page, is that the graph you were referring to?

20 A. This is exactly the graph I was referring to.

21 Q. Thank you.

22 Earlier in your testimony you had been asked
23 about other districts in DEQ that may have dealt with
24 mines with underground mining relationships; is that
25 correct?

1 A. Correct.

2 Q. Did you contact any staff in the other districts
3 of the Land Quality Division to find out about their
4 experience with underground mining?

5 A. I actually did prior to the permit document
6 being submitted. It was significantly early in the -- in
7 the creation of some of the permitted language. They were
8 still working in the early parts of the CN. I knew it was
9 going to be a --

10 THE REPORTER: It was going to be a what?

11 THE WITNESS: It was going to be a highwall
12 mine.

13 A. And so what I did was I contacted our
14 individuals in District 2 just to see if they had any
15 highwall mines in the area. They said they had a couple
16 that had attempted to do some highwall mining. They went
17 straight to underground mining in the Bridger. So I had
18 him send me some of those pieces of information, and I
19 forwarded those on to a couple of individuals that had
20 questions about it.

21 Once the mining permit application was
22 submitted, I never received any more communications with
23 those individuals.

24 Q. (BY MR. KUHLMANN) Okay. Did you take a look at
25 the materials that were provided by those individuals?

1 A. I did.

2 Q. What -- what was your conclusion?

3 A. That they had no real bearing on the type of
4 mining we were trying to do. That some of the auger
5 mining that had been done earlier wasn't actual auger
6 mining, and the conditions were pretty extreme in those
7 particular mining areas. There were also some attempts at
8 other kinds of highwall mining, but the geology in that
9 area is completely different than it is here, and so the
10 roof materials, the floor materials, everything else
11 behave differently. Plus they had a significant number of
12 faults in a particular area down there that we don't have.
13 So the actual language they provided me with was not very
14 sufficient for the kind of highwall mining we would be
15 doing in this area. So it kind of relegated those to the
16 back of the door.

17 Q. But you did contact the other districts within
18 the Land Quality Division that might have experience with
19 this type of permit?

20 A. I did early on, before the permit application.

21 Q. You mentioned auger mining just now. And
22 yesterday I believe you testified about the differences
23 and similarities between auger mining and highwall mining,
24 correct?

25 A. Correct.

1 Q. Did DEQ treat -- in looking at the regulations
2 to apply to the Brook Mine permit application highwall
3 mining method, did it treat that highwall mining method as
4 falling under the auger mining regulations?

5 A. There was some applicabilities there that did
6 fall under the auger mining regulations, primarily because
7 in some cases that's all we have. And so we had to
8 utilize some of that, as well as some of the other
9 subsidence coming from some of our underground programs as
10 well.

11 Q. Are there specific auger mining regulations in
12 the DEQ coal regulations?

13 A. There are a few, yes.

14 Q. Okay. Talking about the materials you obtained
15 from OSM at your training. You were shown a PRB -- PRBRC
16 Exhibit 84. Do you remember that?

17 A. I do.

18 Q. Okay. And I guess my question for you is do you
19 know that Exhibit PRBRC 84 was a copy of the materials you
20 actually used to evaluate this permittee application?

21 A. I don't know if it was a copy of the materials I
22 used.

23 Q. So do you know if you had ever seen the
24 Chapter 1 that you were asked to read out of when it was
25 put in PRBRC 84? Had you seen that before you were asked

1 to read from it today?

2 A. I was working with a different edition of the
3 subsidence manual. That was a 2015 edition. And had
4 rewritten it since then. I attempted to get another copy
5 of the 2015, but they didn't have any more. And so they
6 sent me the newer one that was subsequent to that 2015
7 manual. So I didn't know what version was being shown
8 there. If it was the same version I had, then I could
9 attest to the fact I seen it. But I don't know what
10 version it was.

11 Q. Were the exhibits that -- were the exhibits
12 the -- there was four chapters of the OSM materials that I
13 discussed with you this morning, were those the OSM
14 materials that you used when evaluating the permit
15 application?

16 A. They were.

17 Q. There was some discussion about, I guess, why
18 DEQ would trust information provided in the subsidence
19 control plan if DEQ did not do the modeling itself. Do
20 you remember that question?

21 A. I do. I do.

22 Q. Are there reasons why DEQ can trust information
23 provided by consultants for the permit applicant?

24 A. The information we get by and large is coming
25 from laboratories, either nationally known laboratories or

1 smaller laboratories that are actually permitted in some
2 states, and other states they are certified to be
3 laboratory performing those kinds of analyses. We make
4 the assumption that they were honest and aboveboard when
5 they do their analysis and present their findings, to make
6 the assumption that the mine is aboveboard and honest when
7 they're dealing with those themselves, they present us
8 with those actual values that were presented from the
9 laboratory. We make the assumption laboratory's not
10 willing to subsume their reputation in the industry and
11 not take shortcuts with a lot of these, because, by and
12 large, they live on the results of their analyses, and we
13 trust the fact that they aren't going to shoot themselves
14 in the foot when it comes to reporting quantities and
15 qualities.

16 Q. Is trusting the subsidence -- the information
17 that you mentioned DEQ had trusted from the subsidence
18 control plan for the Brook Mine, is that unusual as far as
19 DEQ trusting information from a consultant in other areas
20 of a permit application?

21 A. Oh, no, it's not. We do that all the time in
22 some of the other permits, when these kinds of analyses
23 show up, whether it be coal quality analysis or overburden
24 analysis. We deal with a lot of analyses for soil,
25 overburden, at all the mines. And so we have to do that

1 same kind of trusting cooperation with the laboratory in
2 utilizing our abilities to look at the data.

3 Q. Does DEQ rely upon information stamped by
4 professional engineers?

5 A. We do.

6 Q. How about does DEQ rely on information provided
7 by and stamped by professional geologists?

8 A. We do.

9 Q. Are there reasons for doing that?

10 A. To ensure that we are getting a product that is
11 certifiably accurate as possible and as honest and
12 straightforward as it can possibly be, because there is
13 some -- some conflicts that could occur if they're not
14 certified, and maybe some discrepancies that could show
15 up. So we are relying on the board of certification for
16 both the geologists and engineers to give us individuals
17 that will be straightforward and competent and
18 professional as possible.

19 Q. You're a licensed professional geologist,
20 correct?

21 A. I am.

22 Q. Is there a code of ethics you have to abide by
23 as a professional geologist?

24 A. Yes, there is.

25 Q. Do you know if that's true for professional

1 engineers?

2 A. I assume it's the same.

3 Q. There were some discussions and I think some
4 questions from the council about additional geotechnical
5 studies and sampling that we need to occur from mining
6 panels prior to mining occurring.

7 A. Yes.

8 Q. Do you remember that?

9 A. I do.

10 Q. Why is it appropriate to do that testing prior
11 to the mining of particular panel?

12 A. So we can ensure that given those numbers for
13 the roofing and floor material, that the size of the
14 panels that are designed for that particular area are
15 adequate to prevent subsidence. There are different
16 constituents that get factored in when they do that, coal
17 thickness, coal distribution in an area. So each panel
18 will be little bit different than the last. So that's why
19 we like to have that information on every single panel.

20 Q. Does DEQ need to have that information in the
21 permit application at this time to make the permit
22 application technically adequate?

23 A. No, we do not.

24 Q. You had some questions -- or some questions were
25 brought to you regarding groundwater. Do you remember

1 some of those?

2 A. I do.

3 Q. I believe the term subcrop was referenced. Do
4 you remember that question?

5 A. I do.

6 Q. Does the presence of a subcrop mean that the
7 layers of -- where the subcrop occurs and further down in
8 coal seam, that those are hydrologically connected?

9 A. Not necessarily.

10 Q. And can you explain some reasons why that may
11 not be hydrologically connected?

12 A. Subcrops are notoriously poor in transferring
13 materials from the edge of the subcrop back into the
14 formation, primarily because a subcrop condition means
15 it's not exposed on the surface. It's been exposed at
16 some time in the past and then covered up. So it's been
17 covered up by some kind of material from some process,
18 whether it be slope wash or a river going by, the subcrop
19 itself gets covered up with more and more material.

20 River systems are very, very difficult because
21 there's a high clay content in a lot of river materials
22 sediments, and those sediments have a way of packing up
23 against the bank. And so they start forming these
24 impacted layers on the bank of the river or the bank of
25 the stream that prevent in a lot of cases recharge into

1 these subcrops because there's a clay layer in there. So
2 these make very, very difficult to ascertain where
3 infiltration will take place and where it won't take
4 place. You can't draw general conclusions, other than the
5 fact that some places it will and some it won't. It has
6 to be drilled out to find out why.

7 Q. Does the Brook mine application model potential
8 effects of mining operations on groundwater rights?

9 A. It does. But Dr. Kuchanur has addressed that in
10 his examination of the permit application.

11 Q. Okay. But those effects were modelled as part
12 of this permit application process?

13 A. They were.

14 Q. Does DEQ -- you were asked about questions on
15 sampling overburden and the coal and floor and roof areas.
16 Do DEQ statutes require overburden sampling on a spacing
17 of 80 acres?

18 A. No, they don't.

19 Q. Do they require sampling on a spacing more dense
20 than 80 acres?

21 A. We don't.

22 Q. Okay. What -- do you recall what they require
23 as far as the density of spacing?

24 A. The number we have determined after this
25 discussion, is prior to mining in the area, the core

1 samples need to be taken on every 160 acres to ensure that
2 we have some adequate sampling of the nature of the
3 overburden materials, the quality and quantity of the
4 material.

5 Q. And if -- if Brook Mine sampled at 180 -- or
6 160 acres, would that make the permit technically
7 adequate?

8 A. It would, given those conditions.

9 Q. You mentioned earlier that attempt was made to
10 sample at a spacing of 80 acres. Was that correct?

11 A. Yes.

12 Q. I think you mentioned that that was not able to
13 be completed in all areas.

14 A. Correct.

15 Q. Do you recall any particular area where that was
16 not able to be completed?

17 A. There were two primary areas. One was down in
18 the TR-1 Pit area, because of some access problems. And
19 there were some over what would be considered to be TR-9,
20 10 and 11 in the extreme northwestern part of the mine
21 because the areas they needed to sample were on top of
22 these scoria ridges and there was no way to get up there.
23 And they're fairly contiguous ridges up there, so you
24 can't get access anywhere up there. And there's 80,
25 100 acres of that material you can't get to. So what we

1 had to do is a narrative in the mine plan stated when they
2 get into those areas and get ready to mine in those areas,
3 they will take overburden samplings on 80-acre spaces.

4 Q. Regarding the sampling near the TR-1 Pit, did
5 Brook inform DEQ or inform you why they were unable to
6 take that sampling?

7 A. At some point in time they told us that they
8 were having trouble accessing the area, and that they were
9 unable to collect samples at that time.

10 Q. Is TR-1 the -- one of the pits that is partially
11 on the Big Horn Coal permit area?

12 A. Yes.

13 Q. Even though Brook was not able to complete the
14 testing at that area, did DEQ evaluate whether the testing
15 that was able to be completed was sufficient enough to
16 make the application technically adequate by itself?

17 A. We did, because of the nature of the material.

18 Q. Okay. You were asked a little earlier by one of
19 the council members about the -- I believe Mr. Chairman --
20 about the depths of the coal layers and the identification
21 of what the coal seams were in the permit area. Do you
22 remember that?

23 A. I do.

24 Q. Does the application include specific
25 information about the depth of those coal layers?

1 A. It does.

2 Q. Now I want to talk to you just briefly about
3 alluvial valley floors.

4 A. Okay.

5 Q. I believe you had said in previous testimony
6 that the alluvial valley floor area determined near Slater
7 Creek was not going to be affected by mining; is that
8 correct?

9 A. Correct.

10 Q. Does a permit application have to include a
11 determination about alluvial valley floor if it's not
12 going to be affected?

13 A. No, it does not.

14 Q. So the Brook Mine permit application, even
15 without mentioning an AVF around Slater Creek, is that
16 technically adequate application?

17 A. For that area it is.

18 Q. Would it also be tech -- or is it also
19 technically adequate if it does not include a
20 determination of AVFs in that area mentioned from your
21 memo that was identified as potential AVFs along the
22 Tongue River south of the permit area?

23 A. Could you please rephrase that.

24 Q. Yes.

25 Do you remember me showing your memo regarding

1 potential AVF lands near the Tongue River?

2 A. I do.

3 Q. And that memo was about parts of the Tongue
4 River that had not been determined to be AVF.

5 A. Correct.

6 Q. Those potential AVF lands are not included --
7 they're not discussed in the permit applications; is that
8 correct?

9 A. Correct.

10 Q. Why is that?

11 A. At this point in time, there was to be no
12 impacts on that particular stretch of the Tongue River
13 from the mine plan. There was no discharge taking place.
14 There was no panels going out into that area. There was
15 no mining activity that was going to be taking place. All
16 of it was north of the interstate, which can act as a
17 surface obstruction in some areas. And so our assumption
18 was that the -- the area would probably not be affected as
19 an AVF, and, therefore, do not need to study it at this
20 time.

21 Q. Did the groundwater model -- if you know, did
22 the groundwater model take into account that area that was
23 labeled on your map as potential AVF?

24 A. I can't state that categorically because --
25 Dr. Kuchanur knows that.

1 Q. Fair enough.

2 Even though the permit application does not
3 discuss the potential area -- AVF lands along the Tongue
4 River that we just talked about --

5 A. Uh-huh.

6 Q. -- is permit application still technically
7 adequate?

8 A. Yes.

9 Q. There's been some discussion about mechanisms
10 for revising the permit. Based upon the objections, do
11 you remember some of those discussions?

12 A. I do.

13 Q. Can you explain how a permit condition might be
14 placed on a -- on a mine permit so their revision would
15 occur after issuance of the permit?

16 A. Yes, we do that.

17 Q. Can you explain how that would work?

18 A. It becomes part of the permit application and
19 also becomes part of the Form 1, which are the must dos in
20 the mine permit. And there are time frames generally
21 attached to those so that -- say they have 90 days to make
22 determinations on overburden sampling or 150 days to make
23 determinations on overburden sampling or the permit would
24 be rescinded. So there are conditions built into the
25 permit that allow for that kind of subsequent activity to

1 take place to finally flesh the permit out to the
2 condition it needs to be for active mining. And so a lot
3 of the areas we're not quite as concerned about are those
4 areas out in the hinterlands where we do have some very
5 good information, very good data, but more may need to be
6 done, such as overburden sampling in areas you can't get
7 to. So those get into the permit application as must-do
8 conditions, and there's a time frame attached to them to
9 get them done in a certain period. Generally, it's
10 90 days, 150 days. It's not five years or anything like
11 that.

12 Q. Okay. And is the requirement to submit a
13 revision application to the Department addressing those
14 identified issues?

15 A. It was submit a permit revision to address those
16 as they occur.

17 Q. I'm going to jump to a completely different
18 topic now. Do you recall being shown an email from -- oh,
19 email string between you and Deanna Hill?

20 A. I do.

21 Q. And we can try to pull it up, if you need to see
22 it again.

23 A. No. I remember it. Thank you.

24 Q. Okay. Do you remember that it included a
25 statement I believe attributed to Ms. Hill that it was an

1 ugly permit?

2 A. Yes.

3 Q. Do you recall what she was referring to when she
4 described it as an ugly permit?

5 A. She was reviewing the adjudication part of the
6 permit, particularly the landowners. And I explained to
7 her that there were a lot of landowners in this particular
8 area, because it's part of Sheridan County that's heavily
9 populated. There were a lot of rural owners that live out
10 there and that the normal custom that we see in a lot of
11 these mines is two or three surface owners in lot of big
12 mines on the other side of the basin. In this particular
13 area there are probably hundreds within some of these
14 areas. And Deanna took a look at that and, oh, my gosh,
15 this is one dang ugly permit. She was kidding.

16 Q. Did Ms. Hill review any of the scientific or
17 technical portions of the permit?

18 A. She did not.

19 Q. So she wasn't referring to those, to your
20 understanding?

21 A. No. She was referring to the ownerships and how
22 interrelated they were.

23 Q. And just going back to one of the very first
24 questions, briefly, that you had been asked on
25 cross-examination. Talking about pit -- or trench TR-1.

1 You were asked about the permit application
2 identifying the water source for use from the TR-1 trench;
3 is that correct?

4 A. Yes.

5 Q. Okay. And you mentioned that the mechanics of
6 moving that water are not in the permit application?

7 A. Correct.

8 Q. Is a permit application required to include
9 details of the mechanics of moving water from the water
10 source to its present use?

11 A. No. That's daily engineering circumstance the
12 mine takes cares of on a daily basis.

13 MR. KUHLMANN: I believe that is my last
14 question. Thank you, Mr. Kristiansen.

15 THE WITNESS: Thank you.

16 CHAIRMAN BAGLEY: All right. Thank you.

17 Thank you, Mr. Kristiansen, for answering a lot
18 of questions.

19 We will take five minutes and then we will
20 proceed with your next witness.

21 (Hearing proceedings recessed

22 4:01 p.m. to 4:10 p.m.)

23 CHAIRMAN BAGLEY: All right. We are back.

24 We'll plan to go this evening until somewhere
25 between 6:30 and 7:00. So, folks, as you're -- just to let

1 folks know, tomorrow morning we will start at 8:30 to do
2 some council business. We've got some consent agenda items
3 and minutes. Then at 9:00 a.m. tomorrow we do a uranium
4 rulemaking. And when that is done, then we will come back
5 and continue with this hearing. So tomorrow morning we
6 will have a little bit of a break from this while the
7 council does some other things.

8 For right now -- yes. Question.

9 MR. GILBERTZ: Yes. So what time would you
10 like the parties and lawyers here ready to go tomorrow,
11 then?

12 CHAIRMAN BAGLEY: That's a good question.
13 We're expecting the rulemaking to take about two hours. So
14 I think if folks are ready at 11:00, that would be good.
15 And we will try to keep that moving along so we can get
16 back to it.

17 MR. GILBERTZ: Will we need to clear this
18 space off the lawyers are using tonight to be available for
19 you in the morning? Yes is the answer I'm hearing. So
20 thank you.

21 CHAIRMAN BAGLEY: Yeah. Let's go with yes.

22 Okay. We ready?

23 So, Mr. Kuhlmann, you've got -- forget your name.
24 Please go ahead, DEQ. Go ahead and pronounce your name and
25 bring your next witness.

1 MR. LAROCK: James LaRock on behalf of DEQ.

2 And we'd like to call Matt Kunze.

3 (Witness sworn.)

4 MATT KUNZE,

5 called for examination by DEQ, being first duly sworn,

6 testified as follows:

7 DIRECT EXAMINATION

8 Q. (BY MR. LAROCK) Hi, Matt. First I'll ask you
9 to spell your name for the record.

10 A. Matt, M-A-T-T, Kunze, K-U-N-Z-E.

11 Q. And do you currently work for the Department of
12 Environmental Quality?

13 A. Yes, I do. I've been there for 10 years.

14 Q. What's your job title there?

15 A. Natural resource program principal.

16 Q. Okay. What's your educational background?

17 A. I have a BA and BS in environmental studies and
18 MS in watershed studies.

19 Q. Prior to working for DEQ, where did you work?

20 A. I worked for four years at Colorado State
21 University working on natural resource projects on
22 military --

23 THE REPORTER: Natural resource project --

24 THE WITNESS: Projects military lands.

25 THE REPORTER: Thank you.

1 CHAIRMAN BAGLEY: Military lands.

2 Q. (BY MR. LAROCK) What have your duties been at
3 DEQ?

4 A. I work on surface water hydrology support for
5 the coal regulatory program. I primarily work on CHIAs,
6 cumulative hydrologic impact assessments. And I also
7 manage our hydrology database for the Division. This
8 includes surface groundwater data submitted to us by the
9 coal mines.

10 I also occasionally assist in technical reviews
11 of permit applications and also in reviews of coal mine
12 reports.

13 Q. Did you review sections of the Brook mine
14 application?

15 A. Yes, I did.

16 Q. Which sections of that permit application did
17 you review?

18 A. I reviewed the surface water elements of the
19 Appendix D6 with the baseline hydrology. I also reviewed
20 surface water items in the mine plan and reclamation plan.
21 I also provided some review of comments of the AVF section
22 for Appendix D11 of the alluvial valley floors.

23 Q. Do you remember how many comments you had during
24 the technical review process?

25 A. Yes.

1 Q. How many were there?

2 A. I had 127 comments. And my comments went
3 through four rounds of --

4 THE REPORTER: Four rounds?

5 THE WITNESS: Four rounds of review.

6 Q. (BY MR. LAROCK) So after four rounds of
7 comments and responses from Brook Mine, your comments were
8 fully addressed?

9 A. Yes. That's correct.

10 Q. Turning to the baseline hydrology in Appendix
11 D6. What baseline surface and water monitoring did the
12 Brook Mine conduct as part of the permit application
13 process?

14 A. The surface water monitoring plan was approved
15 during the pre-application process by the district staff
16 here in Sheridan back in 2013.

17 Q. Does the Land Quality Division have a guideline
18 on pre-application surface water monitoring?

19 A. Yes. That would be our Guideline Number 8, our
20 hydrology guideline for coal and noncoal operators.

21 Q. Do you know if the monitoring program was done
22 in accordance with Guideline 8?

23 A. To the best of my knowledge, it was.

24 Q. How many surface monitoring stations were
25 established?

1 A. There were four baseline stations established.

2 Q. Was that all within the permit boundary?

3 A. Yes. Those were all within the permit boundary.

4 Q. And where were those stations established?

5 A. There were two on Slater Creek at the upstream

6 and downstream extent of what the proposed disturbance

7 would be. And two on Hidden Water Creek, also at the

8 upstream and downstream extent of the disturbance.

9 Q. What kind of data was collected at those
10 stations?

11 A. Continuous streamflow data were collected for a
12 period of one year, with the exception of during the
13 winter months, which included, in this case, from November
14 through March. Also, the sites were visited monthly to
15 take water quality samples for a period of one year, with
16 the exception, again, of the winter months, from November
17 through March.

18 Q. Why wasn't data collected during the winter
19 months?

20 A. It's a common practice at other coal mining
21 permits to remove monitoring equipment in the winter,
22 especially on ephemeral and alluvium streams where water
23 is not present year-round. If there were water present in
24 some of these channels, they'd likely be frozen during the
25 winter and make sampling very difficult to impossible.

1 Q. And what were the overall results of that
2 sampling?

3 A. Slater Creek had very little streamflow that was
4 recorded during the period. And on Hidden Water Creek,
5 there was no flow recorded. There were two water quality
6 samples selected, one at each Slater Creek stations.
7 During the other times the sites on Slater Creek were
8 visited, the channel was dry. And no water quality
9 samples were collected at Hidden Water Creek because of a
10 lack of flow in that stream.

11 Q. Because of that lack of data, was additional
12 data brought into the permit application to help
13 characterize the baseline surface water at the site?

14 A. Yes, it was. During the first round of
15 technical review I requested the Brook Mine bring in some
16 additional data from both Slater Creek and Hidden Water
17 Creek. USGS operated a peak flow gauge on Slater Creek
18 just down the stream of the permit boundary for several
19 years. We believe it was late 1960s through 1981. And
20 they also collected a sediment sample at that gauge.

21 And then on Hidden Water Creek, the Big Horn
22 Mine operated a station there for numerous years, so they
23 brought in streamflow data from that site, about 16 or 17
24 years of flow data, and then about nine water quality
25 samples.

1 Q. Okay. Moving right along. We're going to turn
2 to the mine plan. My first question for you on that, is
3 the Brook Mine planning to directly disturb either the
4 Goose Creek or the Tongue River?

5 A. No, it's not.

6 Q. And just in plain English, what do we mean when
7 we say that a mine is not planning to directly disturb a
8 river?

9 A. It means that it will not be mining through
10 those streams, it will not be dumping any spoil into those
11 channels.

12 Q. Okay. Do you recall how much of the total
13 watershed for the Goose Creek and Tongue River is going to
14 be disturbed by this mine?

15 A. Well, the Brook Mine would disturb -- at least
16 directly disturb about 1200 acres. This represents about
17 0.2 percent of the Goose Creek and Tongue River watershed
18 area.

19 Q. And you say 1200 acres are going to be directly
20 disturbed. And is all that going to happen at once?

21 A. No, it's not. That will -- that will happen
22 over time due to the plan point sequence. So the trenches
23 will be open for approximately three years. And then
24 there will be reclamation taking place. And so really
25 this particular mine is pretty limited in surface

1 disturbance over space and time.

2 Q. Okay. Turning to specifically some water
3 quality issues. Can you tell us what a point source
4 discharge is?

5 A. A point source discharge is a direct discharge
6 to surface waters of the state.

7 Q. And is the mine currently planning to discharge
8 any water into the surface waters of the state? Do you
9 recall?

10 A. The ability to obtain discharge permits through
11 the Wyoming Pollution Discharge Emission System programs,
12 WYPDES. This is run by the DEQ Water Quality Division,
13 and so they need to obtain these discharge permits for any
14 discharge that they do to surface waters. By having these
15 discharge permits, this helps to protect water quality
16 both to receiving stream and also further downstream.

17 Q. Following up on that, can the Water Quality
18 Division require reporting and certain technologies to be
19 used for those discharges?

20 A. Yes.

21 Q. But the Land Quality Division doesn't regulate
22 that, right?

23 A. No. It's entirely by a different division of
24 DEQ.

25 Q. All right. What about nonpoint impacts to

1 surface water?

2 A. Nonpoint discharges will be controlled by
3 hydrologic and sediment control plan.

4 Q. I'm going to pull up what's been marked as DEQ
5 Exhibit 12, page 139, for the council. Let's see. Yes.
6 All right. Let's see if I can zoom in here.

7 Do you recognize this map as I'm zooming in
8 here?

9 A. Yes, I do. This is the hydrologic control plan
10 for the permit application.

11 Q. Okay. Does this map point out where the
12 trenches and piles of overburden and spoil's going to be?

13 A. Yes, it does. Shows the trenches, the small
14 area that we have a surface mine. It shows the stockpiles
15 for topsoil and overburden. It shows the names of the
16 stream channels in the area.

17 Q. Okay. So before we get too deep into the
18 different parts of this map, can you explain what that
19 blue dashed line is on the middle of the map?

20 A. Yes, I can. This -- this particular line here?

21 Q. Yes.

22 A. Yes. That is one-half mile to a Class II
23 stream. Class II streams are defined by the DEQ Water
24 Quality Division. And this particular area of Class II
25 streams include the Tongue River and Goose Creek.

1 Q. And I'll ask some questions about the
2 significance of that in a minute, but I just wanted to
3 point that out to the council.

4 A. Okay.

5 Q. So talking about hydrologic and sediment control
6 measures. What are sediment ponds?

7 A. Sediment ponds are ponds used to control water,
8 sediment from disturbed areas, in this case coal mine.

9 Q. Can you point to on the map where a few sediment
10 ponds are?

11 A. I could. Can I use the pointer.

12 Q. Can you use the pointer right there?

13 A. Yes. These are denoted by the SP connotation.
14 Here's one right here.

15 MR. LAROCK: Can the council see that that
16 says SP on their exhibit?

17 COUNCIL MEMBER LALLY: Yes.

18 Q. (BY MR. LAROCK) Okay. What's the function of
19 sediment ponds and how do they work? If you can explain.

20 A. The function of a sediment pond I just described
21 is to control runoff sediment from a disturbed area.

22 Q. Okay. Thank you.

23 Are the designs for sediment ponds in the permit
24 application?

25 A. Yes, they are. They are in mine plan

1 Addendum --

2 THE REPORTER: I'm sorry. Mine plan --

3 THE WITNESS: Mine Plan Addendum MP-2.

4 Q. (BY MR. LAROCK) Who designs sedimentation
5 ponds?

6 A. The ponds are designed by a licensed
7 professional engineer.

8 Q. Will the mine have to obtain the surface water
9 rights for those sedimentation ponds?

10 A. Yes, they will. They will have to obtain a
11 water right for each of the ponds from the Wyoming State
12 Engineer's Office.

13 Q. What kind of events are the sediment ponds
14 designed to control?

15 A. Ponds are designed to handle the runoff volume
16 from a 10-year, 24-hour storm event.

17 Q. Does the Land Quality Division have a guideline
18 on what kind of events sediment ponds need to be designed
19 and controlled?

20 A. Yes. That would be our Guideline Number 13.
21 That's the sedimentation guideline we have.

22 Q. Is the 10-year, 24-hour storm event kind of a
23 standard design event used in other Wyoming coal permits?

24 A. Yes, it is. It's used across nearly all --

25 THE REPORTER: I'm sorry. I didn't --

1 THE WITNESS: Yes, it is. It's a standard
2 design event across nearly all of the coal mines that the
3 LQD regulates.

4 Q. (BY MR. LAROCK) What prescription data does DEQ
5 use to determine what the 10-year, 24-hour event is?

6 A. That would be NOAA Atlas Number 2 that was used
7 on this particular permit application. NOAA is the
8 National Oceanic Atmospheric Administration.

9 Q. Is NOAA Atmos -- sorry. Excuse me. Is NOAA
10 Atlas 2 a commonly used data source?

11 A. Yes, it is. It's very commonly used across the
12 industry.

13 Q. And specifically in Wyoming?

14 A. Yes.

15 Q. All right. So you mentioned that sediment ponds
16 have to be designed by a licensed professional engineer.
17 Who supervises the construction of a sediment pond?

18 A. They would have to be supervised also by a
19 professional engineer, and they would have to essentially
20 sign off on the construction and their design.

21 Q. Okay. How often will sediment ponds be
22 inspected?

23 A. Sediment ponds will be inspected quarterly at
24 this mine. Also, the application commits to inspecting
25 them after a significant storm event, which is defined in

1 this case as 1.5 inches.

2 Q. Are there other features of the mine that are
3 used to control flooding?

4 A. Yes, there are. There's four flood control
5 reservoirs that would be used during the first five years
6 of the operation.

7 Q. And can you point on the map to where a flood
8 control reservoir is?

9 A. Yeah. Right here. FC-1.

10 Q. FC-1?

11 A. Uh-huh.

12 Q. What about the design of flood control
13 reservoirs? Who designs those?

14 A. Those are also designed by professional
15 engineers.

16 Q. And is the design for those in the mine plan?

17 A. Yes, they are. In Mine Plan Addendum MP-2.

18 Q. What other features do flood control reservoirs
19 have to help control flooding?

20 A. I'm sorry. Can you restate the question?

21 Q. Sure. Sorry about that.

22 Besides the 100 -- besides the 10-year, 24-hour
23 storm event, are flood control reservoirs designed to
24 safely handle other kinds of storm events?

25 A. Yes. The flood control reservoirs will also

1 have a spillway that is designed to handle a 25-year,
2 6-hour event.

3 Q. That's all the questions I have about flood
4 control reservoirs.

5 Let's talk about other hydrologic control
6 measures. Is the Brook Mine planning to use any
7 diversions to protect flows in the area?

8 A. Yes. There will be three planned stream
9 diversions on --

10 THE REPORTER: On what?

11 THE WITNESS: On Hidden Water Creek.

12 Q. (BY MR. LAROCK) Can you point on the map to
13 where those diversions are going to be?

14 A. Yes. Right in this area and down here.

15 Q. So it looks like it's been designed to go around
16 Trenches 2 and 3; is that correct?

17 A. Yes, I believe TR-2 and TR-3A.

18 Q. How long are those diversions in Hidden Water
19 Creek going to be in place?

20 A. They will be in place for approximately three
21 years, and they will be temporary.

22 Q. What are diversions designed to do besides
23 re-routing the water?

24 A. They essentially divert flows around
25 disturbance. So flows in the stream are still maintained

1 and water quality is protected.

2 Q. What kind of events are diversions designed to
3 control?

4 A. These diversions have designs for the 10-year,
5 24-hour event.

6 Q. Okay. So besides sediment ponds, flood control
7 reservoirs and diversions, what other methods is the Brook
8 Mine going to use to control sediment in mine permit area?

9 A. There's other important features, what we call
10 alternate sediment control measures or ASCMs. These are
11 smaller features that are used across kind of a wider
12 area, and they help essentially slow overland flow that
13 might happen after precipitation events and protect water
14 quality down the stream.

15 Q. Can you give examples of alternate sediment
16 controls measures?

17 A. Yes. There would be things like straw wattles,
18 check dams, silt fences, seeding.

19 Q. Can you point on the map to where a few examples
20 of the locations of those ASCMs will be?

21 A. Yes. They're denoted by the circles, with
22 various symbology inside the circle.

23 Q. So, for example, what's the circling with the
24 little dots inside of it?

25 A. I believe that is seeding. I would have to

1 double-check on that, the legend.

2 Q. Okay. And do these circles denote exactly where
3 the ASCMs are going to be or can they be in that general
4 area?

5 A. This would pretty much show the general area of
6 the ASCMs.

7 Q. Is there a D -- Land Quality Division guideline
8 on ASCMs and how they have to be constructed?

9 A. Yes, there is. That would be LQD Guideline
10 Number 15. Okay.

11 Q. So is there anywhere that ASCMs cannot be the
12 only form of sediment control?

13 A. Yes. That would be within one-half mile of the
14 Class II stream. That's something our LQD Guideline
15 Number 15 recommends. And so that, as you noted before,
16 is the dashed blue line. As I mentioned before, Tongue
17 River and Goose Creek are both Class II streams, as
18 defined by the Water Quality Division. So within this
19 boundary to those two streams, there's going to have to be
20 other forms of sediment control in addition to the ASCMs.
21 For example, sedimentation impoundments or even in mining
22 trenches.

23 Q. Are example designs of ASCMs in the mine plan?

24 A. Yes, I do have example designs. Those are in
25 Mine Plan Addendum MP-1.

1 Q. And will the ASCMs be designed in accordance
2 with any LQD guidelines?

3 A. Yes. They would be designed in accordance with
4 ASCM Guideline Number 15. In addition, if there's a
5 drainage area larger than 30 acres that drains to ASCM,
6 then there's going to have to be specific designs for that
7 ASCM that will have to be submitted to the Land Quality
8 Division for our review and approval.

9 Q. How are ASCMs going to be inspected?

10 A. The Brook Mine commits to an inspection plan in
11 Addendum MP-1. In addition, LQD staff will also be
12 inspecting the ASCMs during the monthly and quarterly mine
13 inspections.

14 Q. Okay. How will ASCMs or areas drained by ASCMs
15 going to be monitored?

16 A. Some of the ASCMs that drain to larger receiving
17 streams, for example, such as Slater Creek, the permit
18 application commits to a monitoring program for those as
19 recommended by our Guideline Number 15. So this would
20 include either stream channel cross-section monitoring or
21 an upstream-downstream sediment monitoring station.

22 Q. Okay. Are there any other special hydrologic
23 protections in the mine plan?

24 A. Yes, there are. Since Slater Creek is an
25 intermittent stream, the coal rules and regulations

1 required a 100-foot buffer be placed on either side of
2 that stream. So this buffer has been shown on the exhibit
3 here -- shown in this other dashed blue line. So it
4 extends from the upstream permit boundary all the way
5 downstream. So by having this buffer, this really helps
6 to maintain the streamflow in Slater Creek and would
7 protect the water quality within the channel. The only
8 disturbance to Slater Creek on the surface is going to be
9 near a proposed haul road, otherwise it wouldn't have this
10 buffer on the channel.

11 Q. How does the permit application propose to
12 monitor conditions on streams while it's in operation?

13 A. The application commits to continue to monitor
14 Slater Creek and Hidden Water Creek at the four stations
15 that I mentioned. So continuous streamflows and water
16 quality sampling will occur at those sites. In addition,
17 the application would sample the stock ponds on the permit
18 boundary.

19 In addition, the application commits to
20 monitoring the Tongue River at two existing USGS gauging
21 sites. One of those is located at Monarch. And this is
22 on the upstream end where the Tongue River goes into the
23 Goose River crossing. And then the second location is a
24 ways further downstream at a site --

25 THE REPORTER: I'm sorry. At the --

1 THE WITNESS: At a site at the Wyoming-
2 Montana state line.

3 Q. (BY MR. LAROCK) Do you recall what section of
4 the permit that monitoring plan is in?

5 A. Yes. That is in mine plan, Section MP-71.

6 Q. How often is the surface water monitoring going
7 to occur?

8 A. Quarterly.

9 Q. And how long is that going to be keep happening?

10 A. The monitoring will occur until final bond
11 release. The data that the mine collects will be
12 submitted to the LQD in the annual report. So as part of
13 that annual report, Brook Mine will have to analyze the
14 data and then the data will be reviewed by the LQD on an
15 annual basis in the annual report.

16 Q. Okay. Moving on to concerns about water
17 quantity. Does the Brook Mine permit application predict
18 there's going to be impacts to surface water rights?

19 A. The application predicts there will be no
20 impacts to surface water rights. However, in the event a
21 water right is impaired, the application does permit to
22 provide a source similar to water quantity and quality to
23 replace that water right that may be affected.

24 Q. Okay. And I think that's all the questions I
25 have about the mine plan.

1 When we're talking about the reclamation plan,
2 can you describe some of the things in the reclamation
3 plan that will protect post mine water quantity and
4 quality?

5 A. Yes. I can think of a couple of different
6 examples. First one would be that any material in the
7 mine uses for reclamation, for example, mine trenches or
8 other areas, it will have to be tested to determine
9 suitability of material. So by having a suitable
10 material, it would have to be at least 4 feet in depth
11 from the surface. Under any ephemeral stream channel, the
12 depth has to be increased to 6 feet. So by having
13 suitable materials near the reconstructed extreme
14 channels, for example, Hidden Water Creek, this helps to
15 protect the post mine water quality.

16 In terms of water quantity, one thing the permit
17 application did was provide a pre versus post mine
18 comparison. I did some runoff modeling and looked at
19 runoff volumes of peak flows in sub watersheds across the
20 river boundary. The analysis showed the post-mining
21 values for that comparison were within about 1 percent
22 different than pre-mining values. So, essentially, the
23 post-mining topography that permit application has
24 proposed demonstrates the geographic conditions will be
25 similar, so we would expect the post-mining water quality

1 should also be similar.

2 Q. Within, as you said, about 1 percent pre-mine
3 and post water -- water quantity?

4 A. Yes. Most of the drainages were about 1 percent
5 different.

6 Q. So in general, based on all the surface water
7 items that you reviewed, does the permit application meet
8 the Environmental Quality Act's standards or LQD rules and
9 regulations?

10 A. Yes, it does.

11 Q. Did you review the public comments and
12 objections submitted for this permit application?

13 A. I did.

14 Q. After reviewing the public comments and
15 objections, do you still believe the permit application is
16 technically adequate?

17 A. I do.

18 Q. Did the objections reveal any minor technical
19 issues that could be corrected through a permit revision?

20 A. I do believe that is the case.

21 Q. Can you describe what that is?

22 A. Sure. I would recommend that the Tongue River
23 monitoring sites be moved from the current location that
24 are proposed in the mine plan. I would recommend they
25 have the site further upstream in the Tongue River Valley.

1 This would be located somewhere near the upstream end of
2 where the permit is. And then I would also recommend a
3 site on the Tongue River that was as close as possible to
4 the mine permit boundary, just downstream of the
5 confluence with Goose Creek. I would also recommend that
6 they have a monitoring site on Goose Creek.

7 Goose Creek generally has poorer water quality
8 than the Tongue River, so it's important to note what's
9 coming in from Goose Creek. So we start looking at the
10 upstream-downstream comparison in the Tongue River so we
11 have some more data to be able to interpret any
12 differences you see between upstream and downstream.

13 Q. So that's to figure out if a change is caused by
14 a mine or just by Goose Creek, right?

15 A. That's correct.

16 Q. In your view, does not having those monitoring
17 stations make the permit application technically
18 deficient?

19 A. No, it does not. That was --

20 Q. I'm sorry. That was a double negative question.
21 But thank you. You can finish answering. I'm sorry.

22 A. Well, the application did have sites proposed
23 for the Tongue River. And based on review of the
24 objections, we feel they should be approved.

25 Q. And what section of the mine plan is that

1 language in that you would like to see adjusted?

2 A. That would be in the operational monitoring
3 section, Mine Plan MP-71.

4 Q. So that's all the questions I have for you about
5 the permit application, but there's been some questions
6 about the CHIA, or the cumulative hydrologic impact
7 assessment. Can you describe what a CHIA does?

8 A. Yes. A CHIA is a document that is produced by
9 the DEQ Land Quality Division for certain types of coal
10 permitting actions. The document takes a pretty intensive
11 look at surface and groundwater quality and quantity
12 within the area -- coal mine area, and it may include
13 looking at one or more different coal mines.

14 Q. Is the CHIA required as part of the permit
15 application?

16 A. No, it is not part of the permit application.
17 It is a separate document that supports findings that need
18 to be made before we can --

19 THE REPORTER: I'm sorry. Before we can --

20 THE WITNESS: Before we can approve a
21 permit, but it is not part of a permit application.

22 Q. (BY MR. LAROCK) So how is the CHIA used to make
23 findings of the permit application?

24 A. A CHIA is used to support the statutory finding
25 that a proposed operation has been designed to prevent

1 material damage to the hydrologic balance outside the mine
2 permit area.

3 Q. When you say "material damage," what do you mean
4 by that?

5 A. Material damage is defined in the coal rules and
6 regulations as a significant long-term permit adverse
7 change to the hydrological regime.

8 Q. So basically a coal mine can't significantly
9 adversely change water outside the permit boundary area,
10 right?

11 A. Yes. I can describe more fully what we do when
12 we look at material damage evaluation.

13 Q. Please.

14 A. Okay. So there's two primary things that we
15 look at. The first is the potential to impair water
16 rights outside the permit boundary. And the second is
17 potential to cause water quality exceedances outside the
18 mine permit boundary such that designated or beneficial
19 uses of that water is not being met or obtained.

20 Q. Who designates beneficial uses of water?

21 A. Those would be designated by the DEQ Water
22 Quality Division.

23 Q. What data sources do you use to build CHIA?

24 A. Mine permits themselves or a permit application
25 is the primary data source. So we would use things like

1 baseline hydrology, baseline data, things like a
2 groundwater model, and also a probable hydrologic
3 consequence section or PHC section.

4 Q. Can you use outside data sources also?

5 A. Yes. CHIA can also use outside data sources.

6 Q. Okay. So about that probable hydrologic
7 consequences section, is that required to be in the permit
8 application?

9 A. Yes, it is.

10 Q. Is there a probable hydrologic consequence
11 section at this data applicant -- mine permit application?

12 A. Yes.

13 Q. Did you review that section?

14 A. I did for surface water, yes.

15 Q. Thank you.

16 And did you find that it was technically
17 adequate?

18 A. I did.

19 Q. Besides the Land Quality Division, who else
20 reviews draft CHIAs?

21 A. As part of our process, we ask that the State
22 Engineer's Office review the CHIA because the State
23 Engineer's Office administers water rights of Wyoming.
24 And then we also ask the DEQ Water Quality Division to
25 review the CHIA because they administer water quality

1 standards.

2 Q. How does the CHIA become final?

3 A. To become final, a CHIA would need to be signed
4 by the DEQ director and the state engineer.

5 Q. Backing up just one second. What kinds of
6 cumulative impacts are valued in CHIAs?

7 A. A CHIA only looks at impacts from coal mining.
8 There's no requirement to look at other --

9 Q. Are there other coal mines in the area that
10 are -- that are conducting -- that are actively mining?

11 A. Depends what you mean by "area."

12 Q. Sorry. Let me -- let me rephrase.

13 So there's another mine right next to the Brook
14 Mine permit area, right?

15 A. There is. That's the Big Horn.

16 Q. Are they actively mining?

17 A. No, they are not.

18 Q. So just to put a bow on this. The CHIA is not
19 part of the permit application, and a permit application
20 can be deemed technically complete without the CHIA,
21 correct?

22 A. Yes, it can.

23 MR. LAROCK: I have no further questions
24 for this witness.

25 CHAIRMAN BAGLEY: All right. Thank you.

1 Ms. Boomgaarden.

2 MS. BOOMGAARDEN: Just a few questions, and
3 Mr. Gregersen will conduct cross. Thank you.

4 CHAIRMAN BAGLEY: Thanks.

5 MR. GREGERSEN: Thank you, Mr. Chairman.

6 CROSS-EXAMINATION

7 Q. (BY MR. GREGERSEN) Mr. Kunze, I just have a
8 couple questions, and based on your testimony, I really
9 don't think it's going to be anything that's too
10 controversial.

11 So isn't it true that for coal mining permit
12 applications like this one, the DEQ rules and regulations
13 require various testing, data, analysis and required
14 various forms on both surface and groundwater?

15 A. That's true.

16 Q. And isn't part of this reason because surface
17 and groundwater are connected, right?

18 A. Yes, they can be.

19 Q. And it's -- I mean, it's pretty common surface
20 and groundwater are connected, isn't it?

21 A. Ephemeral stream channel, I don't know that
22 that's not the case, the flow just in the surface.

23 Q. Okay. But it's not uncommon for say there was
24 shallow groundwater, meaning groundwater very near the
25 surface and very near to the surface groundwater, those

1 waters would be connected, right?

2 A. Sure.

3 Q. Okay. So based on that, I had two questions.
4 So you testified that there would be no direct impacts to
5 the Tongue River or Goose Creek from this mine permit
6 application, right?

7 A. That's correct. And what I meant was no direct
8 surface disturbance.

9 Q. Yeah. So no -- and the reason you said that was
10 because there was going to be no actual surface
11 disturbance within -- or on the Goose Creek and Tongue
12 River, right?

13 A. That's --

14 Q. They weren't going to be -- sorry. Go ahead.

15 A. Yes, that's correct.

16 Q. But because the groundwater and surface water
17 can be connected, there is a chance that there is impacts
18 to groundwater that there could be indirect impacts to the
19 Goose Creek and Tongue River from these mining operations,
20 right?

21 A. Would you mind restating the question?

22 Q. Yes. So given that we talked about the
23 groundwater and surface water can be connected, then if it
24 was the case that there was impacts to the groundwater
25 connected to the Goose Creek or Tongue River, then even

1 though there wouldn't be direct impacts to those two
2 streams, there could be indirect impacts; is that right?

3 A. I guess I would need to know what impacts to
4 groundwater you're referring to.

5 Q. And I just want to know whether or not you think
6 that's possible.

7 A. We need to know what the impacts are to
8 groundwater.

9 Q. Okay. And so my next question would be then if,
10 in fact, there was groundwater that was shown to be
11 connected to the Tongue River going into Goose Creek, and
12 that groundwater wasn't acknowledged or recognized in the
13 permit application and that groundwater was affected,
14 there is the possibility that then the surface water in
15 Goose Creek and Tongue River could be affected too, right?

16 A. I --

17 MR. LAROCK: I'm going to object that calls
18 for speculation.

19 MR. GREGERSEN: Well, this is an expert
20 witness, right?

21 I'm sorry.

22 CHAIRMAN BAGLEY: There was an objection.
23 So you believe it calls for speculation?

24 MR. LAROCK: Yeah.

25 CHAIRMAN BAGLEY: I think what we need to

1 know is -- I think I know where you're going with this.

2 Can you make it specific to the situation? I mean, you're
3 sort of picking random, and, you know, the answer -- let's
4 see if we can make it specific.

5 MR. GREGERSEN: Yes, sir, Mr. Chairman.

6 Thank you.

7 Q. (BY MR. GREGERSEN) Mr. Kunze, what I'm
8 wondering is if -- if it was established and if the
9 council found there was actually groundwater in the TR-1
10 area specifically that was connected to the Tongue River,
11 directly connected, then impacts to that groundwater could
12 manifest themselves in the impacts in the Tongue River,
13 correct?

14 A. It would depend on what scale we were talking
15 about.

16 Q. So it depends on the amount of connection, the
17 direct -- how direct the connection was between
18 groundwater and surface water?

19 A. Yes.

20 Q. And I have just one last line of questioning.
21 You said, I believe, that the CHIA, which is yet to be
22 done, but will be, is based on data from the mine permit,
23 right?

24 A. That is the primary data source, but it's not
25 the only data source.

1 Q. Where else does data come from?

2 A. There's data out there available from the
3 Big Horn Mine permits, as well as the USGS, at least for
4 surface water.

5 Q. And even if that data is not included in the
6 permit application, that would be considered by DEQ?

7 A. Yes. The CHIA would.

8 Q. And so the basic line of questioning I'm
9 wondering is if the mine permit provides a major source of
10 information for the CHIA, if the hydrogeological or
11 hydrological information in the mine permit is flawed or
12 missing, then that will result in flaws in the CHIA,
13 right?

14 A. That could potentially happen if it was
15 determined to be flawed.

16 MR. GREGERSEN: Thank you, Mr. Chairman. I
17 have no further questions.

18 CHAIRMAN BAGLEY: All right. Thank you.

19 Ms. Anderson.

20 MS. ANDERSON: Thank you, Mr. Chairman. I
21 do have a few questions.

22 CROSS-EXAMINATION

23 Q. (BY MS. ANDERSON) Mr. Kunze, are you aware of
24 portions of your regulations that require DEQ to request
25 supplemental information from the company, particularly

1 related to the water quality if certain permits are issued
2 by other agencies?

3 A. I am not aware of that specifically.

4 Q. Okay. You spoke a little bit to a WYPDES
5 permit, that's Wyoming pollution discharge permit. Has --
6 are you aware of the company receiving that permit at this
7 time?

8 A. They have not received any WYPDES.

9 Q. Are you aware of the company having received any
10 water quality permits related to this mine yet?

11 A. Not that I'm aware of.

12 Q. I'm going to pull up our Exhibit 53.

13 MS. ANDERSON: Oh, and I need the cord to
14 do that. Thank you.

15 MR. RUBY: Watch it. It's going around.

16 Q. (BY MS. ANDERSON) All right. Do you see this
17 exhibit displayed, Mr. Kunze?

18 A. I do.

19 Q. Am I pronouncing your name right?

20 A. No, you're not.

21 Q. Okay. Could you tell me how to pronounce it?

22 A. It's Kunze.

23 Q. Kunze. Okay. Thank you. We never met before,
24 so appreciate that.

25 All right. Are you familiar with this exhibit?

1 A. Yes. I remember this email.

2 Q. And would you agree that this is an email from
3 you to Mr. Kristiansen?

4 A. It is.

5 Q. Okay. And would you agree that in this email
6 you're relaying requirements about the CHIA to
7 Mr. Kristiansen?

8 A. Yes.

9 Q. Okay. Why did Mr. Kristiansen ask, do you know,
10 about the CHIA process?

11 A. He was trying to get a general background on how
12 the process works, what phase it comes into permit review,
13 that sort of thing.

14 Q. Okay.

15 A. Whatever it --

16 Q. Sorry. Go ahead and finish, please.

17 A. No. That's it.

18 Q. Okay. And this is fairly late in the permit
19 review process, right? It's July 5, 2016?

20 A. Yes.

21 Q. Okay. Would you agree that in this email you
22 talk about public comments on the CHIA and that in the
23 past you and DEQ have "made an attempt to finalize the
24 CHIA prior to the end of the comment period" so that the
25 public can comment on the CHIA if they want to?

1 A. That's essentially what this states here.

2 Q. Okay. Do you stand by that still? I mean, is
3 that common practice of DEQ to do that?

4 A. That has been a common practice in the past. It
5 is certainly not required.

6 Q. Okay. Why wasn't it done here?

7 A. This case --

8 MR. LAROCK: I'm really sorry. I'm going
9 to have to object a little bit on this line of question on
10 reference, because it's not part of the permit application,
11 which is what the council is here to review today.

12 MS. ANDERSON: Okay. I'll get -- sorry.

13 CHAIRMAN BAGLEY: I'll go ahead and allow
14 the question, but let's keep focused on the mine permit. I
15 think this does have -- the hydrologic issues are
16 important.

17 MS. ANDERSON: Okay. Thank you,
18 Mr. Chairman.

19 Q. (BY MS. ANDERSON) So I guess if this has been
20 DEQ practice before, why wasn't it done here?

21 A. Well, because this case was very different than
22 CHIA's we had in the past in that we've had objections and
23 public comments, and we want to make sure that a CHIA can
24 possibly incorporate those if it needs to be incorporated.

25 Q. Okay. But doesn't this email say that it's

1 common practice of DEQ to finalize the CHIA by the end of
2 the public comment process so people can participate at
3 that time?

4 A. That's essentially what it states. In this
5 case, it would not have been possible, even if we wanted
6 to do that. We did not receive agency comments back from
7 the reviewers up until about four days prior to the end of
8 the public comment period.

9 Q. Do you remember when you started the CHIA
10 process for this permit application?

11 A. Oh, it was back when it was originally
12 submitted. So November of 2014 is probably when we first
13 started working on it.

14 Q. Okay. It took that long to get agency comments
15 back?

16 A. No. We gave the agency reviewers -- typically
17 we give 30 days. In this particular case, we sent our
18 draft CHIA out to review December of 20- -- it would have
19 to be 2016. Yes.

20 Q. Sure.

21 A. Sorry. It's been a few years working on this.

22 Q. Yeah. No, definitely.

23 Do you remember when your last comments as part
24 of the DEQ technical review process were resolved? Do you
25 have any Round 5 or 6 comments, for instance?

1 A. The last one I had was Round 4.

2 Q. Round 4. Okay.

3 A. I do not remember exactly the date that it was
4 resolved.

5 Q. So I guess I'm wondering why you didn't start
6 the CHIA review process with the other agencies at that
7 time.

8 MR. LAROCK: Again, Mr. Chairman, I'm
9 sorry. The CHIA is not required to be in the permit
10 application. This line of questioning isn't about the
11 permit application.

12 CHAIRMAN BAGLEY: Yeah. I think we've
13 started November 2014. It's been -- was then sent out to
14 reviewers December '16. It wasn't complete by the time
15 that -- it was January, I believe, when comments were
16 requested. So I think we're -- kind of answered those
17 process questions on the CHIA.

18 MS. ANDERSON: Okay. Thank you,
19 Mr. Chairman. I'll ask a slightly different question,
20 then.

21 Q. (BY MS. ANDERSON) So when the CHIA is final,
22 will there be an opportunity for public review and
23 comment?

24 A. There would not, because the final CHIA will be
25 completed just before the permit is approved.

1 Q. Okay. So how would someone object to the
2 findings of the CHIA?

3 A. That would have to be done in -- through other
4 channels, I guess, outside of the -- the process with
5 council. I am not sure --

6 Q. Okay.

7 A. -- that it --

8 Q. Has DEQ had experience with objections to a CHIA
9 and that kind of situation before?

10 A. Not that I'm aware of.

11 Q. Okay. Is it possible that if we have
12 objections, we'd find ourselves right back here before the
13 EQC again?

14 A. I don't know the answer to that.

15 Q. Okay. All right. You talked in your testimony
16 a little bit about the purpose of the CHIA.

17 A. Uh-huh.

18 Q. And I think you said that it's to evaluate
19 impairment to water rights and to determine whether water
20 quality standards will be exceeded, correct?

21 A. That's correct.

22 Q. Are those the only two purposes of the CHIA?

23 A. Those are the things we look at for evaluating
24 material damage.

25 Q. Okay. And where do you, in your regulations and

1 your guidance, find that definition of material damage
2 that deals with those two particular parts?

3 A. That actually comes from a 1996 memo that was
4 done between at that time DEQ director and the state
5 engineer. That essentially laid out the elements that we
6 need to look at in the CHIA.

7 Q. And is that memo part of the state program for
8 DEQ ordered by OSM? Do you know?

9 A. It is part of the -- what we use to support our
10 CHIAs. We reference that particular document in every
11 CHIA we do. I do not know if it was ever looked at
12 before. I can't say that.

13 Q. Okay. That's fine.

14 And when you say water quality exceedances, just
15 to be clear, that means a violation of a water quality
16 standard?

17 A. Yes. That would be an exceedance of those
18 standards that are laid out in either Chapter 1 of the
19 water quality rules for surface water or Chapter 8 for
20 groundwater.

21 Q. All right. You were just asked some questions
22 about possible connections between ground and surface
23 water. In the scope of your review of this permit
24 application, do you have any personal knowledge of
25 connections between surface and groundwater?

1 A. With respect to which area?

2 Q. I think mainly the Tongue River-Goose Creek
3 area.

4 A. Personal knowledge, is that how you phrased it?

5 Q. Yeah, that's how I phrased it.

6 A. I can't cite to any knowledge right now that I
7 have about that.

8 Q. And the scope of your review, you were focused
9 on surface water, right?

10 A. Yes.

11 Q. But at the time surface and groundwater can be
12 connected, right?

13 A. Sure.

14 Q. So did you talk to the other people reviewing
15 the groundwater parts to make sure that those connections
16 were explored in the scope of your review?

17 A. Yes. I talked to the other reviewers about
18 groundwater.

19 Q. Okay. And did they raise any concerns about
20 those surface-groundwater connections with you?

21 A. Not that I can recall right now.

22 Q. Okay. You mentioned that -- you talked a little
23 bit about Slater Creek and the buffer that is required
24 as -- because of the nature of Slater Creek, but you
25 mentioned exception regarding a haul road; is that right?

1 A. Yes.

2 Q. Can you explain that a little bit more?

3 A. Well, that was shown on the exhibit that we had
4 up. So they would have a haul road that could have a
5 crossing of a stream. It was not described exactly what
6 that crossing would be, if it would be a culvert or
7 whatnot. But that would be the only disturbance in and
8 around the channel itself of Slater Creek.

9 Q. Okay. So there's a buffer, but then there's an
10 exception to the buffer. Is that what you're saying?

11 A. Yeah. You can look at it that way.

12 Q. Okay. And is that because, in your
13 determination, there won't be an impact to Slater Creek
14 from that exception to the buffer?

15 A. I don't know that we evaluated that in an
16 explicit way from that particular haul road. But we're
17 assuming if they're using culverts, which they have
18 explained in the mine plan they would use, they have
19 inspection of those culverts, that that crossing would be
20 installed appropriately and would protect water quality.

21 Q. Okay. You also talked a little bit about some
22 additional monitoring that you're going to require on the
23 Tongue River and Goose Creek as part of your review of the
24 objections, right?

25 A. Yes.

1 Q. Okay. Is that going to be a permit condition
2 that DEQ would then approve as -- as part of this permit?
3 Do you know?

4 A. Yes, I believe it would be a permit condition.

5 Q. Okay. You also talked a little bit about -- I
6 think your phrase was adjusting the mine plan to
7 incorporate those new conditions. How does that happen?

8 A. So there would be a permit condition. And so
9 after the approval of the permit, at some point in time
10 they would have to meet that condition and at that point
11 update portions of the mine and reclamation plan that
12 discuss that monitoring.

13 Q. Okay. So at some point prior to mining?

14 A. I'm assuming. I'm not sure the exact timeline
15 on that. That's --

16 Q. Okay.

17 A. -- not really up to me to decide.

18 Q. Would you feel it's important to get data from
19 those monitoring stations prior to mining?

20 A. Yes. That would be useful.

21 Q. That would be useful.

22 So I think you just talked a little bit about
23 maybe a year of monitoring data that is normally required
24 from baseline monitoring. Is that something that would be
25 useful from these monitoring stations?

1 A. Well, it's possible. There's also other data
2 sources out there that could be used to supplement that
3 baseline that are very close to where these sites would
4 be.

5 Q. And are those other sources in the mine plan?

6 A. Let me think about that. They are discussed in
7 Appendix D6. Some of them, not all of them.

8 Q. Some of them, not all of them.

9 Okay. Are you evaluating all of them in the
10 scope of the CHIA?

11 A. These outside sources?

12 Q. Yeah.

13 A. Yes.

14 Q. Yes. Okay.

15 You also talked a little bit -- or we heard
16 earlier a little bit about the adjudicated wells issue
17 versus permitted wells. Did you evaluate that at all in
18 the scope of review of the objections or is that more
19 groundwater?

20 A. That's more of a groundwater item, but, yes, it
21 was -- it was looked at --

22 Q. Okay.

23 A. -- by staff.

24 Q. Okay. Did you evaluate the water needs of the
25 mine in the scope of your review?

1 A. I did look at the water needs for the mine.

2 Q. Okay. I think I read somewhere that -- a number
3 of 328,200 gallons of water per day. Does that sound
4 right to you?

5 A. That sounds correct. I'm not positive, but I
6 think that's correct.

7 Q. Okay. And do you know where that water's going
8 to come from?

9 A. The -- the mine plan does identify the sources
10 for that water that is in Mine Plan Table -- Section MP-8
11 in the mine plan. I believe it's MP-8.1 is the table that
12 discusses that, demonstrates the different sources.

13 Q. Okay. We heard a little bit earlier about
14 the -- I guess the bathtub that is kind of right there
15 next to the Tongue. Would you agree that that's maybe a
16 source of water for the mine?

17 A. Potentially could be.

18 Q. Potentially. Okay.

19 Did DEQ independently analyze the amount of
20 water that would be needed or where that water would come
21 from?

22 A. With respect to the TR-1 area or --

23 Q. Just in general for the mine plan.

24 A. For the entire mine?

25 Q. Yeah.

1 A. I'm sorry. Could you restate the question?

2 Q. Yeah. Sure. Did DEQ independently analyze the
3 amount of water needed for the mine?

4 A. No, we did not independently analyze.

5 Q. Did you independently analyze where the water
6 would come from or where it could come from?

7 A. What do you mean by "independently analyze"?

8 Q. I guess did you -- in scope of your review of
9 what the permit applicant told you, did you raise any
10 questions about that or, you know, think of other sources
11 for sources of that water?

12 A. I did raise a few questions on that, yes.

13 MS. ANDERSON: Okay. I think that is all I
14 have. Thank you.

15 THE WITNESS: Okay.

16 CHAIRMAN BAGLEY: Thank you, Ms. Anderson.

17 Mr. Gilbertz.

18 MR. GILBERTZ: Thank you.

19 CROSS-EXAMINATION

20 Q. (BY MR. GILBERTZ) Good afternoon.

21 A. Good afternoon.

22 Q. And my name is Jay Gilbertz. I'm an attorney
23 for Mary and David Fisher. I have only a couple of
24 questions for you, and they all relate to real world
25 practicality. We've had a lot of discussion about the

1 permit being technically per -- technically complete,
2 right? And that is another way of saying that it is ready
3 to be acted upon by the director; is that correct?

4 A. That sounds correct.

5 Q. Okay. And we are waiting for my signal.

6 So I have a copy of Wyoming Statute 35-11-406,
7 which tells us some of the things that need to happen as a
8 prerequisite to the issuance of a permit. One of those
9 things is that there's a demonstration and that the
10 administrator finds in writing that (iii), the proposed
11 operation has been designed to prevent material damage to
12 the hydrologic balance?

13 MR. LAROCK: I'm actually going to object
14 to this question. I'm sorry. This is asking about the
15 CHIA again. And what the council's looking at is technical
16 adequacy, not whether the permit should be issued or
17 denied.

18 MR. GILBERTZ: I haven't even asked the
19 question yet.

20 CHAIRMAN BAGLEY: I'm going to allow a
21 question, but I am going to ask, Mr. Gilbertz, this is the
22 second time we've seen this exact slide, so I think we're
23 familiar now with these requirements.

24 MR. GILBERTZ: Sure.

25 CHAIRMAN BAGLEY: If you can zoom in onto

1 what we want to ask this witness.

2 MR. GILBERTZ: Okay. That's what I'm
3 doing. I'm letting the witness see the statute because the
4 witness wasn't here before.

5 CHAIRMAN BAGLEY: Okay.

6 Q. (BY MR. GILBERTZ) So I'm talking to you about
7 this, where it says it has to be found and demonstrated
8 that the proposed operation has been designed to prevent
9 material damage to the hydrologic balance outside the
10 permit area. You see that, sir?

11 A. Yes.

12 Q. And also if there is alluvial valleys involved,
13 not materially damage the quantity or quality of water in
14 the surface or underground water that supplies the
15 alluvial valley floor. You see that, sir?

16 A. I do see that.

17 Q. Okay. So these are findings that need to be
18 made by the director in order for this to happen. My
19 practical real world question to you is the administrator
20 cannot make these finding without the CHIA, right?

21 A. That's correct.

22 Q. And so if in the 15 days -- it's within 15 days
23 after these proceedings are concluded, the CHIA's going to
24 be put together in those 15 days?

25 A. Well, we do have a draft CHIA. Final CHIA would

1 be put together in those 15 days.

2 Q. Okay. But no one -- that draft CHIA is not
3 shared with anyone until it's final?

4 A. That's correct. Until the permit has been
5 approved.

6 MR. GILBERTZ: Those are all the questions
7 I have.

8 CHAIRMAN BAGLEY: All right. Thank you.
9 Mr. Pope.

10 MR. POPE: Thank You, Mr. Hearing Officer.

11 CROSS-EXAMINATION

12 Q. (BY MR. POPE) Good afternoon, Mr. Kunze. My
13 name is Jeff Pope. I'm an attorney with Holland & Hart.
14 I'm here on behalf of Brook Mine. It's good to finally
15 meet you. You're named in a lot of places in the mine
16 plan. I'll be brief with you.

17 I'm curious about how much time did you spend in
18 analyzing the Brook permit application?

19 A. I do not have an estimate of time.

20 Q. Would you say it's over a hundred hours?

21 A. Oh, well over that.

22 Q. Do you think you did a good job in analyzing
23 Brook's permit application?

24 A. I did the best that I could.

25 Q. Fair enough. In analyzing the Brook permit

1 application, did you apply accepted scientific principles
2 and practices?

3 A. I did.

4 Q. Now we heard earlier you mention that you alone
5 had 127 comments that Brook, as part of the permit
6 application, had to respond to. Did you make these
7 comments to ensure that Brook's permit application would
8 adequately protect the surface water within the permit
9 boundary?

10 A. Yes.

11 Q. Were you satisfied by Brook's responses?

12 A. I was.

13 Q. We heard a little bit in some of the other
14 questions about other data sources. Is the availability
15 of other data for this area due in part to the fact that
16 other companies have had mines in this area?

17 A. Yes.

18 Q. And that those mines collected surface water
19 data?

20 A. Yes, they have.

21 Q. And is that data available to you either in your
22 review of Brook's permit application or the CHIA?

23 A. Yes, it is.

24 Q. We also heard you talk about some of the surface
25 water control and flood control measures that Brook has in

1 its mine permit application. To your knowledge, do those
2 flood and surface water control devices comply with
3 industry standards?

4 A. They do.

5 Q. I only have one question about the CHIA, we've
6 heard a lot about that. I want to put to rest something.
7 Before the Brook permit would issue, assuming this council
8 decides that should move forward, DEQ will finalize and
9 present the CHIA, correct?

10 A. I'm sorry. State the first part of the question
11 again.

12 Q. Absolutely. Assuming that this council decides
13 the permit application should move forward, DEQ will
14 finalize and include the CHIA with Brook's permit,
15 correct?

16 A. We will finalize the CHIA prior to the permit
17 application when moved.

18 Q. I want to talk briefly about the proposed
19 monitoring changes that you discussed. You discussed
20 moving the locations of several of these monitoring
21 stations. You said they were in response to the
22 objections, correct?

23 A. Correct.

24 Q. So that means you considered and analyzed those
25 objections in deciding how Brook's permit application may

1 move forward, correct?

2 A. That's correct.

3 Q. Is it fair to say that you fairly and honestly
4 evaluated those objections as they apply to surface water
5 issues within the Brook permit boundary?

6 A. Yes.

7 Q. Just a clarification question again on the
8 monitoring issue. I want to make sure we all understand
9 the purpose of this. Why is it that DEQ wants both an
10 upstream and a downstream set of monitoring stations?

11 A. That is typically what we see in coal mines. We
12 have upstream site so you know what's coming into the
13 system, and we have downstream site so you can evaluate
14 potential impacts to that water system from the operation.

15 Q. So I take from that that's pretty typical for a
16 coal mine to have both an upstream and a downstream
17 monitoring station in Wyoming?

18 A. It is. At least within permit boundary this
19 situation is a little different and these are --

20 THE REPORTER: I'm sorry. These are?

21 THE WITNESS: These would be located
22 outside the permit boundary.

23 Q. (BY MR. POPE) A few other loose ends I want to
24 tie up with you, Mr. Kunze. There was discussion of the
25 WYPDES permit. To my understanding, the Land Quality

1 Division does not administer or enforce WYPDES permits; is
2 that correct?

3 A. That's correct.

4 Q. Let's jump now to the issues of surface and
5 groundwater connections. You were asked some questions
6 about those. The potential connection between a surface
7 water source and a groundwater source depends, in part at
8 least, on the type of geology separating those two sources
9 of water; is that correct?

10 A. That can be one factor.

11 Q. So, for example, permeabilities of rock could
12 affect a connection between surface and groundwater?

13 A. That makes sense to me. I am not a professional
14 geologist, but that does make sense to me, what you
15 described.

16 Q. Let's move from -- from that connection to haul
17 roads. You discussed that culverts, particularly along
18 the haul road that's near to some of the surface water in
19 that area, would help alleviate concerns. Mr. Kristiansen
20 testified that a professional engineer must design and
21 certify those haul roads before they can be used. Would
22 those culverts be included in that professional design and
23 certification?

24 A. I do not know the answer to that.

25 Q. Fair enough. Another loose end I want to tie

1 up. You mentioned that -- in discussing the CHIA, that
2 there are other data sources available for surface water
3 in this area. What are those other data sources?

4 A. Those other data sources would include data that
5 have been collected in the Big Horn Mine and also
6 collected by the USGS.

7 Q. You talked a little bit with Ms. Anderson about
8 how much water that the Brook Mine intends to use in its
9 daily operations. It's true that Brook has to show how
10 much water it will use as part of the permit application
11 process, correct?

12 A. That's correct.

13 Q. And as you said, that is contained in the mine
14 plan in the application, correct?

15 A. Correct.

16 MR. POPE: After conferring with my
17 co-counsel, Mr. Kunze, I thank you for your time. I have
18 no further questions.

19 CHAIRMAN BAGLEY: All right. Thank you,
20 Mr. Pope.

21 I'd like to take a five-minute break for
22 biological activity, and we'll come back and have council
23 ask questions and finish with redirect.

24 MR. LAROCK: Thank you, Mr. Chairman.

25 (Hearing proceedings recessed)

1 5:20 p.m. to 5:30 p.m.)

2 CHAIRMAN BAGLEY: Okay. We're starting
3 again.

4 Now is the time for council members to ask
5 questions.

6 Start at the end there. Council Member Baumer.

7 COUNCIL MEMBER BAUMER: Thanks. I don't
8 have any questions at this time.

9 CHAIRMAN BAGLEY: No questions.

10 Nick?

11 COUNCIL MEMBER AGOPIAN: No, no questions.

12 CHAIRMAN BAGLEY: Meghan?

13 COUNCIL MEMBER LALLY: I don't have any
14 questions at this time.

15 CHAIRMAN BAGLEY: Tim?

16 COUNCIL MEMBER FLITNER: Just one.

17 EXAMINATION

18 Q. (BY COUNCIL MEMBER FLITNER) There's been a lot
19 of talk about this CHIA. I mean, it's not like it's once
20 the comment period has passed for the CHIA, it's not like
21 you can't change or regulate or mitigate anything that you
22 might find at that point, right? It's just another layer.
23 You still address any issues you might find that don't
24 satisfy the permit.

25 A. Yes. Those would be handled in a separate

1 process.

2 COUNCIL MEMBER FLITNER: Okay.

3 EXAMINATION

4 Q. (BY COUNCIL MEMBER DEGENFELDER) And just to
5 clarify one last time, that CHIA is in no way part of the
6 permit.

7 A. That's correct.

8 COUNCIL MEMBER DEGENFELDER: Okay. Thank
9 you.

10 COUNCIL MEMBER FLITNER: That's all I have.

11 CHAIRMAN BAGLEY: I have a couple of
12 questions, partly just for my -- just to clarify some of my
13 notes.

14 EXAMINATION

15 Q. (BY CHAIRMAN BAGLEY) Could you tell me what
16 CHIA means again? I didn't -- I don't think I got the
17 definition of it.

18 A. Cumulative hydrologic impact assessment.

19 Q. Okay. And if it's not part of the application,
20 what -- why is it done? I mean, what's the statutory
21 requirement?

22 A. It's one of the findings that supports one of
23 the findings that have to be made prior to approving a
24 permit.

25 Q. Okay. So you said earlier -- early in your

1 testimony that the mine plan, as it's laid out here, will
2 not directly disturb Tongue River and Goose Creek. Did I
3 hear that correctly?

4 A. That's correct.

5 Q. So when you mean directly disturb, you mean from
6 sort of like surface water runoff or something -- that
7 sort of thing?

8 A. I was meaning physically disturbed, so...

9 Q. Physical disturbed.

10 A. Yes.

11 Q. Okay. And then you mentioned something about
12 water rights need to come from the State Engineer's
13 Office. So were you referring, then, to if Brook Mine
14 needs water to use, they got to get those water rights
15 from the State Engineer's Office?

16 A. Yes.

17 Q. So those don't -- those aren't -- don't come
18 from the LQD?

19 A. Not at all. It's from a separate agency.

20 Q. So the use here that was mentioned, 328,200
21 gallons per day, would that be the sort of water right
22 they'd have to get from the State Engineer's --

23 A. Depending on the uses -- or, excuse me, the
24 sources for that water, they will have to obtain water
25 rights, both for surface water and groundwater.

1 Q. Okay. So both surface and groundwater rights
2 will be through the State Engineer's Office?

3 A. Yes.

4 Q. Okay. And then the water quality issues, are
5 they handled completely separately by the Water Quality
6 Division? I guess I'm having some trouble understanding
7 how the Land Quality Division is interacting with the
8 Water Quality Division in this matter.

9 A. Well, the discharge permits, those are handled
10 by Water Quality Division. So those would be the primary
11 Water Quality Division permit, in my estimation, would be
12 needed for this permit application. But as part of the
13 CHIA, we do look at Water Quality Standards in that
14 evaluation.

15 Q. Okay. So you and the Land Quality Division, as
16 part of the putting together the CHIA, do look at water
17 quality, but it's not -- it's for that specific item, not
18 for determining a permit -- a discharge permit?

19 A. Yes. Right.

20 Q. Okay. Now, in response to your looking at the
21 public comments objections that you've seen from earlier
22 this year and you recommended adding additional monitoring
23 stations, a question was raised about how much baseline
24 information do you think would be required from those
25 stations. Do you have an estimate of what -- the baseline

1 time you'd like to get from those monitoring stations?

2 A. Particular time, no. It would be nice to -- to
3 get a few samples at least or supplement the baseline with
4 the existing data that are out there --

5 Q. Okay.

6 A. -- that would be, I'm assuming, pretty close to
7 these sites.

8 The conservation district monitors the Tongue
9 River and Goose Creek in a lot of these areas, so they
10 have data readily available as well.

11 Q. Are these monitoring stations for flow or for
12 quality or both?

13 A. I'm sorry. The ones we'd be proposing or --

14 Q. Yes. Yes. The ones you're proposing.

15 A. Primarily from water quality. I would recommend
16 that a water quantity measurement be taken at the time of
17 sampling. That's used to help interpret the water quality
18 results.

19 CHAIRMAN BAGLEY: That's all the questions
20 I have. Any more questions from council members?

21 Yes. I'm sorry. Did I forget you?

22 COUNCIL MEMBER LALLY: You didn't forget
23 me. I came up with a question. Sorry.

24 EXAMINATION

25 Q. (BY COUNCIL MEMBER LALLY) You stated that

1 depending on the source of water they might have to get a
2 water permit from the State Engineer's Office. In what
3 case would you not need a water permit to use water from
4 the State Engineer's Office?

5 A. Can't think of any cases.

6 Q. So they would need to get a permit --

7 A. Yes.

8 THE REPORTER: I'm sorry. What was the
9 last part?

10 COUNCIL MEMBER LALLY: They would need to
11 get a permit no matter the source of the water.

12 A. Yes, that's correct.

13 COUNCIL MEMBER LALLY: Okay.

14 CHAIRMAN BAGLEY: Go ahead.

15 COUNCIL MEMBER DEGENFELDER: One other
16 question in relation to Big Horn Coal.

17 EXAMINATION

18 Q. (BY COUNCIL MEMBER DEGENFELDER) I gather that
19 they are concerned about T-1 and then the questions asked
20 particularly of you in relation to if the mine permit may
21 be flawed in that sense, that I'm just piecing together
22 speculatively. And so I'm wondering if you have any
23 comments on that. I gather that they're concerned about
24 the data collection, the drilling logs for that particular
25 area. So do you have any further comments on the accuracy

1 of that?

2 A. I guess I'd need to know exactly which objection
3 you're referring to because they had numerous items in
4 their objection letter that related to that area.

5 Q. Okay.

6 A. If it has to do with anything with groundwater,
7 Dr. Kuchanur would be the best person to address that.

8 Q. Okay. Thank you.

9 A. So...

10 CHAIRMAN BAGLEY: Any other questions from
11 council?

12 All right. So, Mr. LaRock, please, any redirect.

13 MR. LAROCK: Sure.

14 REDIRECT EXAMINATION

15 Q. (BY MR. LAROCK) I'm going to ask you two
16 questions you may not know the answer to. So, first, do
17 you know people can object to the permit after the
18 director issues it and appeal that decision?

19 A. I don't know that.

20 Q. Okay. That's fine.

21 And it's fine if you don't know this, because I
22 know who does. Do you know if the mine is planning on
23 beginning extracting any coal during that first year of
24 operation?

25 A. Not to my knowledge.

1 Q. Great. Then the final question. Does that
2 sampling that you want to have happen, does that need to
3 take place in proposed new sampling sites in order for the
4 mine's permit application to be technically adequate?

5 A. No, it does not.

6 MR. LAROCK: That's it.

7 CHAIRMAN BAGLEY: Okay.

8 MR. LAROCK: Oh, hang on. Wait. Wait.
9 Sorry. This is my first time doing this. I didn't tell
10 you that because you might get nervous.

11 Q. (BY MR. LAROCK) Just a couple questions about
12 the buffer around Slater Creek. Are buffers around
13 streams commonly used at other mines?

14 A. It depends on the type of stream it is. It's
15 not necessarily required if there's ways to handle flows
16 through diversion or something.

17 Q. Are crossings allowed across buffers at other
18 mines?

19 A. Yes, if they're designed appropriately.

20 Q. Can you describe generally if a road crossing a
21 buffer would lead to the same impacts of -- on a stream as
22 direct surface disturbance?

23 A. As long as it was -- the design was done
24 correctly, done by a PE, I would not think there would be
25 concerns.

1 Q. When you say PE, you mean a professional
2 engineer?

3 A. Yes.

4 Q. And then just a last question on this point. Is
5 allowing a haul road to cross Slater Creek -- do you think
6 it would have the same impacts as allowing a panel to go
7 underneath Slater Creek?

8 A. It's a difficult question to answer.

9 Q. Okay. Sure. I'm sorry. Let me see if I can
10 rephrase it.

11 Do you think if -- constructing a road would
12 have more or less severe impacts than undermining the
13 creek?

14 A. It's difficult for me to answer.

15 MR. LAROCK: All right. Yeah. That's
16 fine. I'll withdraw that question. Okay. Now there's no
17 further questions. Now we're done.

18 CHAIRMAN BAGLEY: Okay. Well, I know as
19 excited as everybody is -- thank you, Mr. Kunze, for your
20 testimony.

21 I know as excited as everybody is to move on,
22 you'll have to wait until tomorrow. I think this is a good
23 stopping point, and so we will recess.

24 For those who are really interested, at 8:30 the
25 council will be doing some other business. At 9:00 we have

1 rulemaking.

2 MR. RUBY: That's tomorrow.

3 CHAIRMAN BAGLEY: Tomorrow morning. Not
4 tonight. Tomorrow morning. And then we hope to start --
5 restart this about 11:00. So please be ready about 11:00.

6 We are recessed.

7 (Hearing proceedings recessed

8 5:41 p.m., May 23, 2017.)

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C E R T I F I C A T E

I, KATHY J. KENDRICK, a Registered Professional
Reporter, do hereby certify that I reported by machine
shorthand the foregoing proceedings contained herein,
constituting a full, true and correct transcript.

Dated this 18th day of June, 2017.


KATHY J. KENDRICK
Registered Professional Reporter



From: Jim Ruby
To: [Isaac Sutphin](#); [James LaRock](#); [Jay Gilbertz](#); [Jeffrey S. Pope \(JSPope@hollandhart.com\)](#); [Lynne Boomgaarden](#); [Shannon Anderson](#); [Thomas Sansonetti](#); [andrew kuhlmann](#)
Bcc: [Dave Bagley](#); [Deb Baumer](#); [Joe Girardin](#); [Megan M. Degenfelder \(CPE\)](#); [Meghan O'toole Lally](#); [Nick Agopian](#); [Rich Fairservis](#); [Tim Flitner](#)
Subject: Recusal by Councilwoman Degenfelder
Date: Tuesday, June 06, 2017 5:43:49 PM
Attachments: [EQC Recusal Megan Degenfelder.pdf](#)

Dear Counselors:

Attached is a letter from Councilwoman Degenfelder indicating her recusal from the Brook LLC 2 hearing in Docket 17-4802.

Jim Ruby

Jim Ruby
Wyoming Environmental Quality Council
122 West 25th
Herschler Building 1W, Room 1714
Cheyenne, WY 82002

Mr. Ruby:

Although I do not believe I am required to recuse myself from these proceedings, in light of my employment with Cloud Peak Energy, which is a thermal coal producer with operations in the Powder River Basin of Wyoming and Montana, I am hereby providing notice that I am voluntarily recusing myself from any decisions of the Environmental Quality Council with respect to this proceeding regarding Brook Mine.

Thank you,



Megan Degenfelder

From: Jan Kelley
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Cc: [Thomas Sansonetti](#); [Isaac Sutphin](#); [Jeffrey S. Pope](#); [Carri Svec](#)
Subject: Brook Mine Application - Notice to Withdraw Brook Hearing Exhibits 6-9
Date: Monday, June 05, 2017 2:10:24 PM
Attachments: [2017-06-05 Notice to Withdraw Brook Hearing Exhibits 6-9.pdf](#)

Attached please find a Notice to Withdraw Brook Hearing Exhibits 6-9.

Jan Kelley

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DATED: June 5, 2017.



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I hereby certify that on June 5, 2017, I served a true and correct copy of the foregoing by email to the following:

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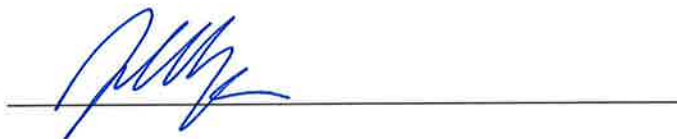
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Subject: Brook Mine, LLC - Vol. I - E-Transcript File Delivery
Date: Monday, June 05, 2017 11:07:04 AM
Attachments: [Brook Mine, LLC - Vol. I.pptx](#)
[052217 EQC brook mine vol. I.pdf](#)

Please find attached the E-Transcript and PDF of the EQC Hearing, Vol. I, taken May 22, 2017 in the matter of Brook Mine.

Thank you,

Melissa Borbely
Administrative Assistant
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1 BEFORE THE ENVIRONMENTAL QUALITY COUNCIL

2 STATE OF WYOMING

3 -----

4 IN RE BROOK MINE APPLICATION Docket No. 17-4802

5 -----

6

7 TRANSCRIPT OF HEARING PROCEEDINGS

8 VOLUME I

9

10 PURSUANT TO NOTICE duly given to all parties
11 in interest, this matter came on for hearing on the
12 22nd day of May, 2017, at the approximate hour of
13 3:00 p.m., at the Sheridan College, Thorne-Rider Campus
14 Center, Room TRCC 008, 3059 Coffeen Avenue, Sheridan,
15 Wyoming, before the Wyoming Environmental Quality Council,
16 with Chairman David Bagley, presiding, and Council Member
17 Meghan Lally, Council Member Megan Degenfelder, Council
18 Member Tim Flitner, Council Member Nick Agopian and
19 Council Member Deb Baumer also in attendance.

20 Mr. Ryan Schelhaas, Wyoming Attorney General's
21 Office, Attorney for the Council; Mr. Jim Ruby, Executive
22 Director to the Council; Mr. Joe Girardin, Business Office
23 Coordinator, were also in attendance.

24

25

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1 P R O C E E D I N G S

2 (Hearing proceedings commenced

3 3:00 p.m., May 22, 2017.)

4 CHAIRMAN BAGLEY: All right. We'll start.

5 Good afternoon, everybody. It's 3 p.m., May 22,

6 2017. I am Dr. David Bagley, the hearing officer for

7 Docket 17-4802 in regards Brook Mine, LLC.

8 Present today from the Wyoming Environmental

9 Quality Council are Tim Flitner, Meghan Lally, Megan

10 Degenfelder, Nick Agopian and Deb Baumer. Council Member

11 Fairservis has recused himself due to a conflict.

12 Parties present today are Isaac Sutphin and

13 Jeff Pope on behalf of Brook Mine, LLC. Andrew Kuhlmann

14 and James LaRock on behalf of DEQ.

15 MR. POPE: Counselman Bagley, I apologize

16 for interrupting. We also have Tom Sansonetti here on

17 behalf of Brook Mine.

18 CHAIRMAN BAGLEY: Great. Thank you.

19 Shannon Anderson on behalf of Powder River Basin

20 Resource Council. And Jay Gilbertz on behalf of Mary

21 Brezik-Fisher and David Fisher.

22 And also present for the council are Jim Ruby,

23 executive officer and Joe Girardin, Council Business

24 Coordinator and Ryan Schelhaas from the Attorney General's

25 Office.

1 MR. RUBY: Mr. Chairman.

2 CHAIRMAN BAGLEY: Yes.

3 MR. RUBY: You forgot Lynn. I did not --
4 yeah.

5 CHAIRMAN BAGLEY: My apologies.

6 MS. BOOMGAARDEN: Lynn Boomgaarden and
7 Clayton Gregersen on behalf of Big Horn Coal Company.

8 CHAIRMAN BAGLEY: Thank you. This hearing
9 is being held at Sheridan College, Room TRCC 008 in the
10 Thorne-Rider Campus Center, 3059 Coffeen Avenue, Sheridan,
11 Wyoming. There is a court reporter present.

12 So this afternoon, what I'd like to do is have
13 opening statements, and then also we'll try to get the
14 evidence from the DEQ presented.

15 So for the opening statements, since everyone has
16 filed prehearing information, I'd like us to try to keep
17 the opening statements to 10 minutes, if possible, so we
18 can keep moving forward.

19 So -- is this the order I should go in, Jim?
20 Opening statements?

21 MR. RUBY: It's DEQ first, then Brook, then
22 PR -- or then Lynn, then PRBRC, then Jay.

23 CHAIRMAN BAGLEY: I'll get that there.

24 MS. ANDERSON: It's just the order of the
25 presentation of the hearing, Mr. [sic] Bagley.

1 MR. RUBY: I probably typed it in wrong.

2 CHAIRMAN BAGLEY: Yeah, I've got -- here,
3 Jim, come on over here so I can get this in the right
4 order. My apologies.

5 Great. Thanks. All right, then. Mr. Kuhlmann,
6 DEQ, would you please -- if you have an opening statement,
7 please proceed.

8 MR. KUHLMANN: Thank you, Mr. Chairman.

9 My name is Andrew Kuhlmann, and I am here on
10 behalf of the Department of Environmental Quality. I work
11 at the Wyoming Attorney General's Office. Also joining me
12 is James LaRock, also with the Wyoming Attorney General's
13 Office.

14 This case is about the public input provided
15 through the objections period on the proposed Brook
16 Mine. I will allow Brook Mine to go into greater detail
17 about the nature of their mine, but it's an application
18 for a new mining permit up near here, just north of
19 Sheridan.

20 Prior to this case, DEQ thoroughly reviewed the
21 Brook Mine permit application over a number of years. At
22 the conclusion of that, they determined that it was
23 technically adequate. The purpose of this hearing is to
24 determine that after the public has now filed objections
25 and provided new information, whether that permit is still

1 technically adequate. And by technically adequate, we're
2 referring to a permit whose contents meet the statutory,
3 regulatory requirements.

4 Now, the public has an opportunity to provide
5 information to DEQ on the permit application only at the
6 point of public comment and objections. Those objections
7 then can lead to a hearing in front of the council, and the
8 council now, over the next few days, will be able to make
9 findings about the objections, information -- both for them
10 as well as in response to them -- and conclusions about
11 whether or not the permit, in light of those objections, is
12 still technically adequate.

13 The other parties have characterized this case as
14 a matter of issuing or denying the permit. But the council
15 does not need to get that point. The statutes indicate the
16 director is to issue or deny the permit. There are a
17 number of findings that have to be made under Wyoming
18 Statute 35-11-406(n). And those findings must be made by
19 the director prior to permit issuance.

20 Those findings also depend, though, on the
21 content of the permit application, which objections and the
22 new information provided through them can affect and the
23 council will be able to affect through this hearing its
24 findings.

25 The findings that are necessary for the director

1 to make have not been made at this time. You will hear
2 evidence that the cumulative hydrologic impact assessment
3 has not been finalized or issued or signed at this point.
4 You will also hear that the bond, for reclamation purposes,
5 has not been set at this point. Nor do they need to be
6 because both of those items depend upon the content of the
7 permit application and the objections could potentially
8 allow for modifications of that substance.

9 Those issues, once those findings are made, can
10 be heard by council at that time, but it's not necessary
11 for the council to worry about those at this point or to
12 try to make those findings on their own.

13 The Department believes that -- has reviewed the
14 public objections and also believes that even after
15 reviewing those objections, the permit does remain
16 technically adequate. There are things objections have
17 identified that could be improvements upon the application,
18 but they are not deficiencies that would prevent the
19 issuance of the permit. And there's a common method used
20 by the Department to correct things such as this,
21 improvements that come up through the public objections
22 period, and that is to place a permit condition on an
23 issued permit requiring a permit revision to be filed by
24 the applicant within specified time after the permit is
25 issued and prior to mining. This allows the minor issues

1 to be corrected in a timely manner and allows the
2 permitting process to go forward.

3 DEQ planned -- intends to provide four witnesses
4 for the council. First, Mr. Bj Kristiansen, who is the
5 permit coordinator for Brook Mine, is going to help
6 introduce the volumes of the permit application. He will
7 also talk about several sections of the permit application
8 that he is familiar with. He will talk about the permit
9 review process, as well as preapplic -- preapplication
10 activities that Brook had with DEQ prior to issuing -- or
11 to filing their application. He'll talk about the geology
12 of the area. He'll talk about most of the contents of the
13 mine reclamation plans. He will talk about the subsidence
14 control plan and the fire control plan.

15 Mr. Matt Kunze, also with DEQ, will be providing
16 testimony about surface water, information and issues
17 raised in the objections and the parts of the application
18 that address surface water issues, both quantity and
19 quality.

20 Dr. Muthu Kuchanur will be testifying about the
21 water quantity and quality, as well as groundwater
22 monitoring.

23 And, finally, Mr. Doug Emme will be testifying
24 about the blasting program of the Department, as well as
25 bonding for reclamation.

1 The Department -- the council has likely
2 realized, from reviewing DEQ's prehearing memo, that there
3 are a number of statutes and regulations that apply to the
4 issues raised in the objections. I will not waste time by
5 trying to quote those here, but we refer to the council
6 DEQ's memorandum to identify where those are.

7 At the end of this hearing DEQ will request the
8 council to determine that the application is technically
9 adequate, and to make any recommendations of areas of
10 application that should be corrected through a permit
11 revision after the permit is issued. Thank you.

12 CHAIRMAN BAGLEY: Thank you, Mr. Kuhlmann.

13 Mr. Pope, would you please proceed.

14 MR. POPE: Certainly. If you'll give us
15 just one moment, Dr. Bagley. We have to move some
16 technology in place.

17 CHAIRMAN BAGLEY: Okay.

18 MR. POPE: If it's all right with council,
19 I prefer to stand. I'm short enough as it is, hiding
20 behind a desk.

21 CHAIRMAN BAGLEY: That's fine.

22 MR. POPE: All right. I think we're ready
23 to go. Ladies and gentlemen of the council, thank you for
24 taking time out of your schedule to join us for an
25 entertaining discussion on dirt.

1 Today we're going to be talking about the Brook
2 Mine permit application. But I first want to start with
3 something that's a little more understandable. Driver's
4 licenses. Many of us have them. Most of you have likely
5 seen one. They tell us that the person who has that
6 license has passed the minimum qualifications necessary to
7 drive a car in the state of Wyoming. Besides that they
8 don't really tell us a whole lot. They tell us height,
9 weight, date of birth, address. Maybe you look like what's
10 on the picture, maybe you don't, depending on when it was
11 taken. But at the end of the day, the license isn't an
12 expansive document and review of what a person's going to
13 do for their entire lives driving a car. There's many
14 unknowns that factor into when a person actually gets
15 behind the wheel of an automobile and begins to drive.

16 The type of car. The driver's license doesn't
17 tell you what kind of car that person is driving, but we
18 know that the make, model, age and technology of that car
19 can influence how you should approach driving; how fast you
20 should go, how slow you should go, how you deal with turns.

21 Likewise, that driver's license doesn't explain
22 10 or 15 years in the future how you're going to handle a
23 set of mountain curves or, if you've been driving for only
24 five years how, in the middle of May, when a foot and a
25 half of snow gets dumped on Cheyenne, how you're going to

1 deal with that. Likewise, it doesn't explain how someone
2 lives their entire lives in a rural Wyoming community is
3 going to deal with big city traffic.

4 But it doesn't have to, because that's not what a
5 driver's license is about. It's about setting a minimum
6 standard that you understand and commit to following the
7 rules of the road. You also don't go out there alone.
8 There's oversight. Highway patrol, sheriffs, city police.
9 And if you break the rules of the road, there are
10 consequences. You get pulled over. For example, if you're
11 trying to get back a little early from depositions in
12 Sundance, thinking you can go faster than the speed limit,
13 you may find out that the highway patrol says you're not
14 allowed to do that. A lesson Mr. Sutphin and I learned the
15 hard way.

16 But the point is there is somebody watching to
17 make sure everyone with that license follows the rules of
18 the road. I'm sure you're wondering at this point why on
19 earth I've been talking to you about a driver's license.
20 We're clearly not here to talk about how to drive a car.
21 The reason I mention it is because the principle behind a
22 driver's license really isn't different than the principle
23 that we're talking about over these next five days. The
24 permit application for a coal mine is designed to establish
25 a set of minimum standards that a company must meet to

1 operate safely and in an environmentally sound way in the
2 state of Wyoming.

3 But unlike the driver's license test, where you
4 go down to the DMV, you answer a few questions and show
5 them if you can make a left turn or not, the coal
6 permitting process in the state of Wyoming is far more
7 rigorous. As the council knows from the prehearing
8 memorandum, the Wyoming Environmental Quality Act provides
9 dozens of statutory sections that set out guidelines and
10 rules for what a permit applicant must do. DEQ has
11 promulgated hundreds of regulations that an applicant must
12 meet before we get to the point we're at today. And
13 there's over a dozen guidelines that DEQ has to guide
14 someone through the permitting process.

15 Now, what's on the screen is just a very, very
16 tiny snapshot of what an applicant must follow. And you're
17 going to see how detailed that application is. As
18 Mr. Kuhlmann mentioned, the witnesses from DEQ, the
19 experts, frankly, from DEQ are going to walk you through
20 the 13 volumes of Brook's permit application. There are
21 tens of thousands of pages within that permit document that
22 explain in great detail everything that Brook intends to do
23 to meet the -- meet the standards for a permit applicant --
24 application in the state of Wyoming.

25 Inside those 13 volumes, you're going to find

1 detailed studies, because after all, one of the chief
2 purposes of the permit application process is to make sure
3 that someone who wants to mine coal understands soil,
4 geology, hydrogeology, climatology in the area they're
5 going to mine so when they're done, they can put it back in
6 a way that they found it.

7 So you're going to hear from Jeff Barron, a
8 professional engineer and expert in the permitting process
9 on how Brook went about doing that.

10 You're also going to hear from Mr. Ken Woodring,
11 the company rep from Ramaco, about how it's going to do
12 those -- it's going to implement those studies moving
13 forward. And you're going to see things like Brook's
14 groundwater monitoring, its vegetation baseline, and its
15 assessment of alluvial valley floors.

16 In addition to that, you're also going to learn
17 about the lengthy review. Now, unlike the DMV, where you
18 can maybe in and out in a matter of hours, you're going to
19 hear from Mr. Kristiansen this process that will get us to
20 this point was years in the making.

21 Up on the screen now is snippet from PRBRC
22 Exhibit 89 where Mr. Kristiansen explains to Alan Edwards
23 and Todd Parfitt at DEQ that it took us three years, six
24 rounds of comments and responses. And that's the process,
25 as the council's aware of from the order in lieu of consent

1 hearing, where DEQ and Brook went back and forth to improve
2 upon the permit application. And it also involved minimum
3 of 20 experts across 10 different agencies just to get to
4 this point. And lest we not forget, this council was
5 actually involved earlier in the process to move the permit
6 application to where we are today.

7 But that's not the end of the process. There's
8 much more to do. And that's an important piece for the
9 council to consider as it hears the evidence. We're here
10 today talking about step one. You're going to hear
11 evidence from some of the objectors that's talking about
12 step 501.

13 For example, there's oversight, as I mentioned.
14 Just like the highway patrol is out there, DEQ continues
15 with Brook throughout the life of its mine. There will be
16 annual reports and annual recalculation of Brook's bond and
17 monthly inspections of the mine site to make sure Brook is
18 following the law. Just like the highway patrolman who
19 ticketed Mr. Sutphin, Brook can get notices of violations,
20 fines and changes to its operations if it doesn't abide by
21 its permit requirements.

22 And beyond that forward-looking oversight,
23 there's also more work for Brook to do. You see here,
24 Brook Exhibit 10-D, which is the part of the Mine Safety
25 Health Administration, MSHA -- I think I just butchered

1 that, apologize -- the assessment that Brook has to do in
2 order to meet the federal standards to safely operate a
3 mine. You're going to hear that Brook is going to be
4 undertaking those studies and those engineer -- and the
5 engineering necessary to comply with that law.

6 You're also going to hear that Brook is going to
7 do more work at the mine site that it did as part of its
8 permit application. It commits to monitoring water
9 quality, commits to monitoring the streams in the area.
10 And, again, all for the purposes of putting back the land
11 the way Brook found it when it's done mining.

12 And as Mr. Kuhlmann said, we think at the end of
13 the hearing this council should find and affirm DEQ's
14 decision that Brook's application is technically adequate
15 and it complies with all the relevant statutes and
16 regulations.

17 Now, even though there are objectors here, the
18 objectors in Brook can at least agree on one thing. This
19 screenshot at the bottom is from the deposition of Jill
20 Morrison, the executive director of the Powder River Basin
21 Resource Council. I asked her if Brook complies with all
22 of the statutes and regulations for a permit application in
23 Wyoming, should it get a permit? And she said, "I guess
24 so."

25 The objectors, however, despite agreeing with

1 Brook on that basic principle, are here today because they
2 conducted a very cursory review of Brook's permit
3 application. You're going to hear over the next five days
4 that many of the objectors spent little, if any time,
5 reviewing the tens of thousands of pages of Brook's permit
6 application. You're going to hear that in preparing their
7 objection letters, several of the objectors didn't look at
8 the statutes or regulations that govern a permit
9 application in the state of Wyoming. A few of those
10 examples are on the screen. As part of the deposition we
11 asked, Have you reviewed the statutes? No, Jordan Sweeney,
12 manager of Big Horn Coal says.

13 Are you familiar with the Environmental Quality
14 Act? I know of it, says Mikel Wireman, the expert for the
15 Powder River Basin Resource Council. But that's not
16 sufficient. The process is more rigorous. And we
17 ultimately think the final analysis for the council boils
18 down to this. Is the permit application technically
19 adequate and complete? Does it comply with Wyoming law?
20 And what that really is going to ask the council to do is
21 decide whether the experts who spent years going through
22 the permit, both at DEQ and Brook, did their job correctly.
23 Because at the end of the day, we don't think we're here to
24 talk about the substance of Brook's application. Instead,
25 this is an attack on the quality of work that DEQ did.

1 What we think when you hear from Mr. Kristiansen,
2 Mr. Kunze, Mr. Emme and others, you're going to realize
3 they did a great job. They put in a lot of effort. And at
4 the end of the day, it took all of that effort to get us
5 here today, where the council should find Brook's permit
6 action is technically adequate and complete. Thank you.

7 CHAIRMAN BAGLEY: Thank you, Mr. Pope.

8 Ms. Boomgaarden.

9 MS. BOOMGAARDEN: Thank you, Mr. Chairman.
10 Members of the council. Good afternoon. With
11 Mr. Gregersen and I here today is Mr. Jordan Sweeney, mine
12 manager for Big Horn Coal. And then on the end of the row
13 there, local hydrologist, Mr. Joe Gerlach. Mr. Sweeney and
14 Mr. Gerlach will be our witnesses presenting evidence this
15 week.

16 Big Horn's primary concern with Brook's mine
17 permit application is simple and straightforward. The
18 permit application at step 1 fails to satisfy the
19 fundamental statutory and regulatory requirement referenced
20 multiple places in the rules and regulations, that Brook
21 must know and understand the actual on-the-ground
22 hydrologic conditions in the area in which they propose
23 highwall mining. And they have to know those actual
24 conditions so that Brook can ensure that those hydrologic
25 conditions will not be materially impaired.

1 Without knowing and understanding the site-
2 specific hydrologic conditions, it simply is impossible for
3 Brook to adequately consider the impacts of its proposed
4 highwall mining operations as the law requires at step 1.

5 Brook argues that DEQ's determination that the
6 mine permit was technically adequate and suitable for
7 publication satisfies Brook's statutory obligation to
8 demonstrate prior to permit approval that its permit
9 application does four things. First, that it's accurate
10 and complete. Second, that Brook can accomplish
11 recommendation as is required by the Environmental Quality
12 Act. Third, that mining Brook has proposed has been
13 designed, in the first instance, to prevent material damage
14 to the hydrologic balance outside the permit area. And,
15 fourth, that the permit application otherwise complies with
16 the Environmental Quality Act and all applicable state
17 laws.

18 DEQ disagrees with Brook on this point. So does
19 Big Horn Coal. Nothing in the statute at issue in this
20 case, Wyoming Statute 35-11-406(n) creates a presumption
21 that Brook's application was approvable upon
22 Mr. Kristiansen sending a letter to Brook Mine that its
23 permit application was technically adequate and suitable
24 for publication.

25 I know you're all familiar with the statute. For

1 your convenience we put the statutory language I just
2 referenced on the screen. As you can see, there's
3 absolutely nothing in that statute that permits Brook to
4 shift its burden of proof to the objectors. The statute
5 very specifically states that as the applicant, Brook has
6 the burden of establishing that its permit application is
7 in compliance with the law. The statute can't be any
8 clearer that no coal mining permit may be approved unless
9 the applicant affirmatively demonstrates that the
10 specific-listed requirements have been satisfied.

11 Contrary to Mr. Pope's assertion, Big Horn
12 carefully reviewed the portions of the materials that were
13 made available through publication for public review and
14 comment and noted the fundamental hydrologic deficiencies.
15 Brook must demonstrate with that Big Horn's wrong.

16 In response, Brook argues that state law requires
17 very little detail in permit application. We just heard
18 Mr. Pope make that argument. And in supporting the
19 argument, Brook illogically jumps to the characteristics of
20 an approved mine permit as a living dynamic document that
21 allows Brook to mine first and answer questions and address
22 problems later. According to Brook, DEQ's oversight and
23 enforcement authority over an approved permit is sufficient
24 to ensure that any further problems will be identified and
25 corrected.

1 The Environmental Quality Act in the Land Quality
2 Division Rules and Regulations require much more in mine
3 permit application than Brook is willing to acknowledge.
4 For example, the law requires that Brook determined
5 probable hydrologic consequences both within and outside
6 the permit area prior to permit approval. Brook can't make
7 that determination accurately or completely, as is required
8 by the statute if it hasn't obtained and analyzed critical
9 site-specific information.

10 Brook can't make that determination accurately or
11 completely and determine probable hydrologic consequences,
12 whereas here it has neglected to consider data establishing
13 that the overburden above the proposed highwall cuts is not
14 native overburden, as they presumed or assumed in their
15 permit application, but rather it's composed of previously
16 mined porous backfill that's saturated with groundwater
17 and that that's saturated with groundwater that's connected
18 to -- hydrologically connected to the Tongue River and
19 Goose Creek.

20 The evidence at hearing, including the evidence
21 of hydrologist Joe Gerlach, will demonstrate that given
22 Brook's total disregard of the known prior mining activity
23 and overburden and hydrologic conditions in Brook's
24 proposed mine trench 1 area, Brook has not credibly
25 demonstrated the probable hydrologic consequences of its

1 proposed mine operations or any such consequences that
2 would occur would be irreparable -- would not be
3 irreparable. Excuse me.

4 If Brook were being intellectually honest, it
5 would acknowledge that its permits application requirements
6 are separate and distinct from the operation performance
7 standards and the kind of flexibility that permittees have
8 under the law to amend a previously approved permit
9 application to address new or unforeseen circumstances, and
10 then the importance of DEQ's oversight and enforcement rule
11 during the operational period.

12 Notably, Big Horn doesn't seek to deny Brook an
13 opportunity to mine in Sheridan County. However, as the
14 owner of land, infrastructure and coal rights both within
15 Brook's proposed mine permit area and adjacent to Brook's
16 proposed operations, Big Horn is legally entitled to expect
17 that Brook's mine permit accurate -- mine permit
18 application is accurate, complete, complies with the law
19 and that prior to permit approval that application
20 demonstrates that the proposed operation is not expected to
21 irreparably harm the land and water, including Big Horn's
22 property.

23 The number of rounds of technical review, the
24 number of years that it took Brook to prepare a mine permit
25 application that was deemed by DEQ to be technically

1 adequate and suitable for publication, the number of
2 volumes and pages in that permit application, and the
3 number of emails exchanged between DEQ reviewers and Brook
4 over that time frame do not make Brook's permit application
5 any more or less provable.

6 The simple fact is Brook wouldn't rely so heavily
7 on the arguments that Mr. Pope just made if Brook could
8 point the council and the objectors to substantive
9 information that addresses the multiple asserted permit
10 application deficiencies.

11 For all these reasons, at the conclusion of this
12 hearing, Brook will request that the council -- excuse me,
13 Big Horn will request that the council will require Brook
14 to gather and to analyze the critical information missing
15 in its mine permit application and make the necessary
16 demonstrations. Brook must be required to submit this
17 critical baseline data and risk analysis to DEQ for review
18 prior to DEQ preparing its written findings and issuing a
19 state decision document on Brook's permit application.

20 Finally, consistent with DEQ's established
21 practice, as Mr. Kuhlmann just explained, of applying
22 permit conditions to ensure that all technical problems are
23 addressed prior to mining, Big Horn will request that the
24 council determine that specific permit conditions must be
25 included in any approved Brook Mine permit in order to

1 mitigate the risk that Brook's proposed operations will
2 cause irreparable environmental harm on Big Horn's lands
3 and elsewhere. Thank you.

4 CHAIRMAN BAGLEY: Thank you,
5 Ms. Boomgaarden.

6 Ms. Anderson.

7 MS. ANDERSON: Thank you. Mr. Chairman,
8 members of the council, good afternoon. My name is Shannon
9 Anderson, and I'm a staff attorney for Powder River Basin
10 Resource Council. Welcome to Sheridan. As a native, I
11 hope you enjoy your stay and explore the area a bit, which
12 will give you an appreciation of why our members who live
13 here care so much about our county.

14 I have with me today some of our members,
15 including Gillian Malone, a board member of ours who enjoys
16 recreating and spending time near the permit area. And
17 Anton Bocek and John Buyok, members of ours who live near
18 the proposed mine. All of them will be providing testimony
19 to you later this week.

20 Some of our other local members are in the
21 audience today to support our efforts. I also have with me
22 Jill Morrison, our organization's executive director and
23 longtime community organizer.

24 We will be joined later this week by Jerry
25 Marino, our geotechnical engineer expert, and Mike Wireman,

1 our hydrogeologist expert, both of whom will provide expert
2 testimony about concerns they have with the permit
3 application and opinions they have reached about why it is
4 not technically adequate.

5 We want to start off by addressing the argument
6 we know is coming. Ramaco and Brook Mine are going to try
7 to paint our organization as an activist group that is
8 opposed to coal no matter the merits. They want you to
9 believe that we don't have good cause for being here today.
10 We've seen that tactic before, and you should not fall for
11 it.

12 This is the first coal permit we have challenged
13 before the EQC at a hearing in quite some time. Some of
14 you may remember the last coal permit we challenged. It
15 was actually a research and development license for Linc
16 Energy. Linc is now in bankruptcy, and its projects in
17 Australia are the source of the largest contamination
18 cleanup ever in Queensland.

19 Now, before opposing jumps to the conclusions of
20 the relevance about that, we don't bring Linc up for its
21 relevance. We mention it to you to demonstrate that we are
22 selective about what projects our organization questions
23 and challenges. And as a nonprofit with limited resources,
24 we are especially selective about what projects we put
25 legal and financial resources into challenging before this

1 council.

2 As you will hear, we retain well-known and well-
3 respected experts with impeccable credentials. They are
4 scientists familiar with the standards of peer review and
5 what data is necessary to make good decisions. We asked
6 them to review the permit application and associated
7 materials without a predetermined outcome in mind.

8 We honestly wanted to know whether our
9 organization and our members should be concerned about this
10 large industrial project coming into our backyard. And the
11 answer we got back from both of them was a resounding yes.
12 Yes, we should be concerned, they told us. And that answer
13 led us to seek answers to our questions and concerns from
14 the regulators, including you, which brings me to
15 discussing what this proceeding is all about for our
16 organization.

17 Having been denied our request for an informal
18 conference, this hearing is now our only opportunity to
19 voice our concerns to you, the regulatory agency, in charge
20 of making a decision on whether the company has met its
21 burden to allow DEQ to grant or deny the permit
22 application.

23 Your role under Section 406(p) of the
24 Environmental Quality Act is to determine whether Ramaco
25 has met its burden to ensure this coal mine application has

1 met the standards of the law, is technically sound and
2 based upon the proper science-based conclusions, and that
3 it will not threaten the health, safety and welfare of
4 nearby landowners and nearby recreationists.

5 This week-long trial-like hearing is not the most
6 citizen-friendly venue to provide these comments and
7 concerns. And with that in mind, we ask you that -- to
8 give the citizens who are going to testify a little
9 latitude. This is now the only forum they have to raise
10 their concerns with you and with the company. Although it
11 may not look like it, and it certainly doesn't feel like it
12 to them, in essence, this is the only public comment
13 hearing they have had on this proposed coal mine.

14 Unfortunately, as opposed to informally meeting
15 with them to see if the company could address their
16 concerns, Ramaco has greeted these citizens with deposition
17 subpoenas and invasive discovery requests and subjected
18 them to hours of questioning about their motives and
19 technical knowledge. As of earlier today, they also tried
20 to kick out their voice at the proceeding altogether. So
21 they might be a bit nervous and shaken when they testify
22 before you later this week. This is an intimidating
23 process, but these citizens have checked that intimidation
24 at the door because they feel so strongly about the need to
25 raise their voice.

1 This project is expected to mine coal for at
2 least the next 12 years. With 10 years of statutorily
3 required reclamation monitoring, that means a presence from
4 the company for at least 22 years. You can raise a kid and
5 send her to college in that time frame. So for the next
6 generation, this company will be a neighbor to our members
7 who live just north of here in the scenic and historic
8 Tongue River Valley. And because of that, our members, and
9 in turn our organization, have a keen interest in ensuring
10 this company will be a good neighbor. We have an interest
11 in making sure that the permit application is complete,
12 updated, and accurate, as required by the law, as a good
13 permit application is necessary for good inspection and
14 enforcement oversight by DEQ, that Mr. Jeff Pope mentioned,
15 after the permit is approved. DEQ can't issue a notice of
16 violation if there isn't a permit condition or term to
17 violate. And we have a significant interest in making sure
18 the permit application and conditions of the permit
19 appropriately address all legal requirements related to
20 subsidence prevention and remediation, hydrologic
21 protection, blasting, water replacement and restoration and
22 bonding, among many other serious issues.

23 We ask you to consider the following question.
24 If this mine was proposed within half mile of your home,
25 wouldn't you want the permit to meet those requirements

1 too?

2 You've heard a lot already today about the scope
3 of DEQ's review -- and it will likely be a common refrain
4 the whole week from Ramaco and DEQ -- to look at all this
5 paper, think of all the time and on and on. But we ask you
6 to think of the substance. Details matter. Some really
7 complex, technical details, like how to use formulas to
8 calculate the likelihood of subsidence or how to adequately
9 characterize hydrologic systems. And some more general and
10 common details, like how many trucks will haul coal and
11 what roads will be impacted and how often will blasting
12 happen and how will the company ensure that blasting
13 doesn't impact neighbors? Or even the most basic of all,
14 how much coal are you going to mine? And where is it going
15 to go? And what facilities are necessary to make that
16 happen? All of those details are missing or technically
17 inadequate in the permit application.

18 Now, you're also going to hear a lot from DEQ and
19 Ramaco that DEQ normally does this or DEQ normally signs
20 off on that, so trust us and everything will be okay. But
21 the fact is District 3 of the Land Quality Division has
22 never done this before. That is, they have never permitted
23 a highwall mine before. And they certainly have never done
24 that in an area acknowledged to have active subsidence and
25 active coal fires and abandoned mine sites.

1 Consequences matter here. As discussed in the
2 objections and as you'll hear from the citizens testifying
3 later this week, this area has tremendous scenic value and
4 high recreational use. It has complex hydrological systems
5 that are critical to local agriculture, and it has homes in
6 close proximity to the mine.

7 We have to get this one right. We can't just
8 cross our fingers and hope everything will work out. The
9 words on all of that paper matter.

10 As we stated from the beginning, our presence
11 before you this week is not driven by some anti-coal agenda
12 or even anti-Ramaco vendetta. Our presence and actions are
13 exactly what yours would be if your home was near a new
14 proposed coal mine in a sensitive area with active
15 subsidence, coal fires and great concerns over water use
16 and impacts, and that is to demand that when this company
17 mines coal in the Tongue River Valley, that it does it
18 responsibly and in a manner that assure this mine will be
19 a good neighbor for the next generation to come. We
20 hope -- we know you will help us achieve that objective
21 through these proceedings, and we thank you for your time
22 and your efforts.

23 CHAIRMAN BAGLEY: Thank you, Ms. Anderson.

24 Mr. Gilbertz.

25 MR. GILBERTZ: Thank you. My name is

1 Jay Gilbertz from Yonkee & Toner. It's my pleasure to
2 represent David and Mary Fisher.

3 Stand up, please.

4 Who are here today. The Fishers are homeowners
5 out in this area. In the map -- or the aerial that you see
6 right here, their house is just slightly off the photo to
7 the right, in that particular area.

8 I wanted to start by saying our proceedings this
9 week, I want to be clear, it's not about whether we're
10 going to reject a mine or not. It's going to be about
11 being careful, about being thoughtful. And it's most
12 importantly about being careful, thoughtful and scientific
13 about these hydrology and subsidence issues. That is the
14 important thing.

15 This spot, this photo you see, it lies right at
16 the base and adjacent to the Brook Mine application, and
17 where they propose to do their mine.

18 It's just a few short miles of Interstate 90.
19 You can see Interstate 90 up in the left-hand corner
20 cutting through the hill. And the interstate drops down
21 and it cuts right through where the mine is planned right
22 in this particular area you're looking at.

23 I grew up in Gillette on a cattle ranch, so I get
24 away with saying this. The coal mines in Gillette are one
25 thing. Coal mine dug in vast, endless expanses of

1 rangeland. This is not open rangeland like down in
2 Gillette. This is a very special and unique place. Just
3 up the river from this site is the site of the Connor
4 Battlefield where Connor engaged the Black Bear and the
5 Arapahoe in their village where they camped in this valley.
6 And the running battle that ensued as the Arapahoe attacked
7 and Connor attempted retreat ran right through the photo
8 that you're looking at.

9 Just up there also is a site of the Sawyer
10 expedition and where it camped and was attacked by the
11 natives.

12 Just below this photo is where General Crook
13 bivouacked and prepared his armies to march a short
14 distance up north and engage in the battle of the Rosebud.

15 You're probably all aware, just south of town,
16 but within a couple of miles, we have the historic Wagon
17 Box fight and place where Red Cloud engaged in his military
18 victory of the Fetterman massacre.

19 Why is it that the native peoples fought so hard
20 in this place? Why did they fight so hard in this place,
21 when so many vast tracts of land had been taken away from
22 them? And it is because it is a very special place. It's
23 not just a place.

24 This valley is home to turkeys. It is home to,
25 on the Fishers' property right now, a nesting crane. Just

1 up the creek from them, a bald eagle nesting in the same
2 tree with blue herons nesting. It is a trout fishery. It
3 has everything that the largest river in northeast Wyoming
4 could have associated with it.

5 And it is a place where the people are tied to
6 the land as well. Where the people in this valley measure
7 their water rights in terms longer than the state of
8 Wyoming. Territorial water rights run up and down that
9 entire valley, where water rights existed before the state
10 did. It's an important place.

11 The Fishers are just average landowners in this
12 group. And they've been thrust, because there hasn't been
13 an opportunity for public comment, into these contested,
14 expensive proceedings. And we're going to rely on some of
15 the well-qualified experts of other folks to talk to you
16 about these hydrology issues. And what you're going to
17 see -- what's going to be proven to you is that the Tongue
18 River, that you see in this photo, the Goose Creek that
19 comes in just below this, Slater Creek that comes in just
20 below this, these drainages, these rivers in this process,
21 in this landscape, are not half pipes of water flowing
22 through the land, but they are systems. They're systems.
23 They're tied to these alluvial valley floors that are
24 protected so prominently in surface mining.

25 Those alluvial valley floors are, in turn, tied

1 to the outlying aquifer systems, which include -- which
2 include the coal seams filled with water that will be
3 dewatered and mined through by Brook under its plan.

4 We'll show you there have been insufficient
5 studies done to understand how these complex hydrological
6 systems operate together. And we'll get through
7 Mr. Wireman, a highly qualified man who worked in hydrology
8 and mining for decades.

9 As a result, there is insufficient information
10 upon which to determine that this proposed mine will not
11 harm this complex water system and the alluvial valley
12 floors that are tied to it. Without understanding how
13 these systems work together, Brook cannot demonstrate that
14 it -- how -- it cannot demonstrate how it won't harm, and
15 most certainly can't demonstrate what it will do if it does
16 harm.

17 Mr. Wireman will explain to you that there are
18 certain types of damages that can be done to this water
19 system that cannot be undone no matter the price tag.

20 I'm going to prove to you the same is true about
21 the subsidence. Subsidence in this area is not a matter of
22 speculation. It's a matter of historical fact. There is
23 abandoned mine projects out here the DEQ has spent hundreds
24 and hundreds of thousands of dollars on just to address
25 some of the very worst of the situation.

1 The underground mines that were done in the early
2 part of the 1900s are subsiding terribly. Subsidence is a
3 known problem. And what you're going to hear is that the
4 necessary careful scientific work to understand what the
5 risk of subsidence will be when Brook tunnels its highwall
6 miner underground into the coal seam and pulls back out and
7 creates an underground cavity, with all the overburden over
8 it, has not been done. They have not been done with
9 sufficient degree for us to understand what the risk of
10 subsidence is, how much that will be, and, most
11 importantly, we can't understand how much work we would
12 have to do if it happens. So we haven't predicted
13 environmental outcomes, and we can. We can. It just
14 requires more work.

15 And he will also explain, based on the limited
16 information that we have, he has to conclude the risk of
17 subsidence in this area is high. That there will be
18 subsidence problems with the new Brook Mine, just as there
19 were with the old one.

20 And the other thing that has been left out of
21 this is as they blast to create their trench for these
22 purposes, what will those underground shock waves do to
23 those already and oftentimes nearby underground old
24 workings? Will they cause further subsidence and an
25 exacerbation of a problem that already exists in the old

1 workings?

2 So what we have for us -- before us in this
3 hearing are the issues of hydrology and the issues of
4 subsidence and geology are obscured from us. They're in a
5 black bag. Black velvet bag. Now, they're obscured from
6 us only because Brook has not tended to the necessary
7 studies. We can. Just additional studies need to be done,
8 and that is hydrology studies and geology studies to
9 quantify what is in the bag.

10 If we know what is in the bag, if we unveil it,
11 then we -- we can know what the risks are to the hydrology.
12 We can know what the risks are to the geology. And then we
13 can engage in a reasoned assessment of is it worth the
14 risk? Is the risk too high? Is the damage that may occur
15 so permanent that it cannot be fixed? Or is the answer
16 that the risks are acceptable and that the likely
17 ramifications can be remedied.

18 These are things that we need to find out. And
19 we can then make these reasoned decisions about fully and
20 scientifically assessing the risks and understanding them.
21 And like -- and scientifically predicting the likely
22 problems and consequences, deciding if it's worth the risk
23 and determining what the cost to fix anything that is
24 broken or harmed in the process might be, thereby setting
25 the bonds. Thereby setting the bonds.

1 But what Brook asks you to do is turn the
2 Environmental Quality Act on its head, to say trust us.
3 The stuff that's in the black box, this ancient artifact
4 that's in the black bag. Don't worry. It's not fragile.
5 We can drive our mining equipment through it. We can hit
6 it with our picks and hammers. And don't worry. If we
7 break it, we can fix it.

8 And as you're going to hear from folks, both the
9 subsidence and the water folks, some it can't be fixed.
10 There are consequences that cannot be fixed. To use
11 Mr. Pope's example. This is as if the person shows at the
12 driver's license bureau and says, "I don't need to take
13 that vision test. I see just fine. Look. Two fingers."
14 And we put them on the road. Don't worry. There's cops on
15 the road. Don't worry. I have insurance so all this can
16 be fixed later. There are some consequences of accidents
17 which cannot be fixed.

18 At the end of this, we will ask you to send this
19 back for more study to find that these things that were in
20 this bag, that they be studied and reviewed. It can be
21 done, and it needs to be done in relation to this very
22 special place. Thank you.

23 CHAIRMAN BAGLEY: Thank you, Mr. Gilbertz.

24 Do you need a break? Okay.

25 So now we'll begin with the evidence. We will

1 have the DEQ go first. A lot of the evidence that you
2 present, I imagine, will be of value to all parties, so
3 definitely I'd like to have you go first.

4 And so, Mr. Kuhlmann, would you please call your
5 first witness.

6 MR. KUHLMANN: Thank you, Mr. Chairman.

7 If we could just have two minutes just to get
8 everything organized.

9 CHAIRMAN BAGLEY: You may have two minutes.

10 Let's make that five minutes. Anyone who needs a
11 bio break, please take that too.

12 (Hearing proceedings recessed

13 3:48 a.m. to 3:57 p.m.)

14 CHAIRMAN BAGLEY: Okay. We are back at it.

15 So, Mr. Kuhlmann, please proceed.

16 MR. KUHLMANN: Thank you, Mr. Chairman.

17 The Department would call its first witness,
18 Mr. Bj Kristiansen, who is sitting up here for us already.

19 Mr. Kristiansen --

20 THE REPORTER: I'll swear him in.

21 (Witness sworn.)

22 BJARNE KRISTIANSEN,

23 called for examination by DEQ, being first duly sworn,
24 testified as follows:

25 DIRECT EXAMINATION

1 Q. (BY MR. KUHLMANN) Please state your full name
2 for the record.

3 A. My name is Bjarne Kristiansen, also known as Bj.

4 Q. What is your current job?

5 A. Currently, I work for the Land Quality Division
6 of the Wyoming Department of Environmental Quality. I am
7 a geologist. I work as such, as well as the assistant
8 district supervisor for District 3 here in Sheridan.

9 Q. What are your general duties in your current
10 position?

11 A. General duties in my current position is to
12 oversee geology, hydrology and some of the other aspects
13 of mining and permit details that are worked on in areas
14 that are not quite as related to coal as I was used to
15 back earlier when I first joined DEQ. A lot of these
16 areas we have some information that has to be pulled
17 together for permits. I pull a lot of this information
18 together primarily and then take this information and
19 utilize it on a permit-making process.

20 Q. What's your educational background?

21 A. I have a bachelor's degree in geology and
22 history.

23 Q. And you mentioned work prior to coming to DEQ.
24 Can you tell us about that?

25 A. Indeed. When I graduated from college, I went

1 to work for a company called Peter Kiewit & Sons. I
2 worked for the Kiewit company for 25 years as a geologist,
3 as an exploration geologist. Spent 15 years on drilling
4 rigs exploring the western United States in most of the
5 coal producing areas. And I also worked for 10 years in a
6 coal mine as both a geologist and as a support specialist
7 for determining some of the pit just -- different pit
8 justifications, alignments, and also worked as a surveyor
9 and some other jobs that were put together. We were
10 people with many hats in those days.

11 Q. About how long have you worked in the mining
12 industry?

13 A. About 35 years.

14 Q. Are you a licensed geologist in Wyoming?

15 A. I am. I'm a professional geologist, certified
16 by State of Wyoming.

17 Q. As part of your job at the department, do you
18 review mine permit applications?

19 A. I do.

20 Q. Do you review coal mine permit applications?

21 A. I do.

22 Q. How about other types of mines?

23 A. Also other kinds of mines.

24 Q. Can you tell us a little bit about it?

25 A. Other kinds of mines, primarily uranium in this

1 day and age. We also review smaller mines. Gravel
2 operations, scoria pits, all those smaller mines that are
3 mom-and-pop kind of organizations and still have to, you
4 know, live with their rules and regulations, but we also
5 review those pretty heavily.

6 Q. About how many applications related to coal
7 mines have you reviewed?

8 A. That would be 10 to 12 over the last three and a
9 half, four years.

10 Q. And how long have you been with the Department?

11 A. I've been with the department since May 20,
12 2013.

13 Q. About how often do you work on permit
14 applications related to coal mines?

15 A. Pretty frequently. We have a lot of
16 applications from coal mines for various and sundry
17 reasons. There may be amendments being put in or major
18 plannings that have taken place that have to have in-depth
19 detail, in-depth analysis performed. So I work to help
20 some of the permit coordinators fulfill the goal of
21 checking out the geology, the hydrology, how everything
22 works together for two, three or four a year, depending
23 how much the workload is.

24 Q. Okay. Can you describe some of the types of
25 permit applications related to coal mines you've worked

1 on?

2 A. Some of the amendments and other types, you
3 mean? Major influences or --

4 Q. What kinds of applications are there that you've
5 reviewed?

6 A. That I've reviewed? Straightforward permit
7 applications, amendments to coal mines, major revisions to
8 coal mines, minor revisions to coal mines, annual reports,
9 for those.

10 Q. Do those follow a similar process?

11 A. They do. They all follow the same basic
12 process.

13 Q. Do those acquire public input?

14 A. They do at one point.

15 Q. Okay. Can you briefly describe the application
16 review process DEQ goes through.

17 A. Certainly. Part of the application review
18 process starts prior to receiving the application. In
19 many cases we will get the operator, assist them in cases
20 if they need to do some exploration work. Many times
21 they will be granted what's known as a coal notification,
22 or a CN, so they can do exploration drilling and
23 exploration coring for coal mines or other kinds of mines.
24 And in these notifications, they're allowed to utilize
25 their resources to determine where the coal is at, what

1 will happen with the coal, how weather dries the coal, and
2 you put together a lot of the information they'll need for
3 their baseline. At about the point in time they have
4 sufficient baseline, determined by our in-house experts,
5 they will then send us a permit application. When we
6 receive that application, we check for completeness, how
7 complete is this, as related to the statutes, rules and
8 regulations.

9 And so we go over the entire permit application,
10 every bit and piece of that permit application, to
11 determine whether it is complete or not based on the legal
12 ramifications in the necessities imbued by the rules and
13 regulations and the statutes.

14 Q. What is the Department checking for when it
15 reviews completeness of an application?

16 A. There are sections to a permit application that
17 are defined by law. And what we're looking for is every
18 one of those sections in place; do we have Volume I, the
19 adjudication; do we have Volume II, further adjudication
20 or other things; do we have Volumes IV, V, VI, VII,
21 depending upon what they may consist of, we have to make
22 sure they're all there and all available for researchers.

23 And so we ensure that every one of those
24 documents -- and the parts of those documents -- each
25 document isn't just a single whole. They're composed of

1 series of parts of documents that address different bits
2 and pieces of the statutes, the rules and the regulations.
3 And so what we have to do is go through these individual
4 books, determine whether or not the materials in there are
5 available and present, as they need to be, and then
6 determine the completeness based on that.

7 Q. After the Department has determined an
8 application is complete, what happens next?

9 A. We send the mining company a notification that
10 we have deemed their application complete and have gone
11 into the review process. The review process is 150 days
12 long, by statute. And we analyze the entire document from
13 front to back cover and determine how technically accurate
14 this can possibly be. Are some of the completeness -- in
15 other words, some of the completeness items as technically
16 accurate as they need to be or do they need to be beefed
17 up with some further work or research.

18 Q. Does the Department communicate its thoughts
19 about the technical completeness to the operator?

20 A. Yes, we do.

21 Q. How does it do that?

22 A. Okay. We put together comments in a series of
23 comments to all of our experts that we utilize and send
24 those comments after the first round to the operator for
25 his diagnosis, trying to answer the different comments

1 that are brought up, attempt to create data, if no data
2 existed in a particular area, find it, examine it, using
3 it when needed, be sure all the bits and pieces that I
4 talked about in the application need to be put together
5 based on our commentary now. So they now have a different
6 sense of direction or different way of looking at the
7 permit based on what we told them they have to look at.

8 These would all be considered pieces of
9 information that need clarification, correction,
10 modification in one way, shape or form.

11 Q. How many rounds of comments and responses are
12 there in the permit review process?

13 A. That varies from permit to permit. This
14 particular permit had six rounds of comments and
15 responses.

16 Q. Okay. When do the rounds of comments and
17 responses end?

18 A. When we finally deem the permit to be
19 technically accurate.

20 Q. Okay. What is meant by "technically accurate,"
21 as you mentioned?

22 A. After we examine the entire document and find
23 there are no longer any issues existing as compared to
24 the -- what the statutes and rules and regulations
25 require, we make sure that the document fits into those

1 categories, that it does have a life, it can be utilized
2 during the life of the mine, that it has information in it
3 that can be utilized during life of mine, at least, based
4 on what the mine plan and reclamation plan say today.

5 Q. What happens after the Department determines
6 that an application is technically accurate?

7 A. It then goes to -- a notification goes to the
8 local publications, such as the newspaper in a town of the
9 area where the permit is going to be applied. It goes in
10 four weeks -- or I should say four different publications
11 periods a week apart. Then there's 30 days after the last
12 publication for the public comment period to continue.

13 So public -- the public can comment on this from
14 the first day it goes into publication until 30 days after
15 the last publication. For all intents and purposes, they
16 have, oh, approximately seven weeks to do this.

17 Q. Is that the normal time when the public's input
18 can be provided?

19 A. It is. It's defined by statute.

20 Q. Okay. Does DEQ just have one person reviewing
21 the application?

22 A. No. We utilize many of our in-house experts to
23 review the permit applications.

24 Q. How many different experts, like DEQ, do you use
25 to evaluate a permit application?

1 A. On this particular permit, we used 11 in-house
2 experts and four out-of-house experts, others that are not
3 LQD.

4 Q. Is there a person who keeps track of the review
5 process on DEQ's end?

6 A. Yes, there is. That would be the permit
7 coordinator.

8 Q. Can you describe the role of the permit
9 coordinator?

10 A. Permit coordinator is -- primary responsibility
11 is to ensure that all the responses, the comments that are
12 taking place, finds a central place to be housed. What
13 the permit coordinator has to do is take disparate pieces
14 of information that are being returned by the experts in
15 the field, whether it be vegetation or wildlife, geology
16 or hydrology, and bring them all together in one single
17 place that they can be then inserted into the mine plan
18 and rec plan, as well as the appendices that lead into
19 those things.

20 So, essentially, it's a -- it's a coordinating
21 position. We bring all the information together in one
22 spot, put it all together, make sure it flows, to make
23 sure it follows the statutes and rules and regulations,
24 and then put it in the document when it's time.

25 Q. Does the permit coordinator's role end after the

1 application process?

2 A. No, it doesn't. Permit coordinator stays with
3 that permit for as long a period of time as necessary --
4 deemed by LQD to be necessary.

5 Q. Okay. Have you been a -- served as a permit
6 coordinator?

7 A. I have.

8 Q. How often?

9 A. I have served as permit coordinate for this
10 particular property for four years.

11 Q. Have you been permit coordinator for any other
12 permits?

13 A. I have. I also was the permit coordinator -- or
14 was the permit coordinator for Wyodak Mine and Dry Fork
15 Mine, as well as the rare elements prospect that was over
16 near Sundance.

17 Q. Is the Wyodak Mine another coal mine?

18 A. It is.

19 Q. You mentioned that you've been permit
20 coordinator for this permit. By that you mean the Brook
21 Mine permit application?

22 A. Absolutely. Yes.

23 Q. And how long have you been the permit
24 coordinator?

25 A. For four years.

1 Q. When did you -- what stage in the application
2 process did you get involved with the Brook Mine as permit
3 coordinator?

4 A. I got involved very close to the beginning, when
5 they were operating underneath the CN. When they were
6 doing early preliminary exploration work and during their
7 attempt to set up their water monitoring systems,
8 determine where most of the holes needed to be drilled to
9 tell them the information they needed. By and large I got
10 involved in the last two-thirds of the exploration
11 program.

12 Q. Can you briefly describe the proposed Brook
13 Mine.

14 A. The Brook Mine's about eight miles north of
15 here, just north of the interstate, in an area that is
16 immediately adjacent to the Tongue River and some of the
17 other state highways, as well as the interstate, like I
18 mentioned before. It consists of rock units that are
19 varying ages. Predominantly about 50 million years old.
20 And these rocks were deposited in a swamp 50 million years
21 ago. And these deposits in swamp that were laying in
22 place for many, many millions of years began to get
23 coalified. And over time these deposits become much more
24 coalified and much more -- much better quality coal than
25 may be seen in the past.

1 On top of those, we get a lot of sequences of
2 sands and shales and clays that get washed into the coal
3 swamp during periods of flooding. And so what you'll have
4 is a very thick coal sequence that exists in the sequences
5 of sandstone and shale above it, whenever the environment
6 gets higher energy, such as during flood periods.

7 These rock units are exposed, an outcrop north
8 of town, about eight miles north of town in the Brook Mine
9 permit area. And they have been studied by Brook Mine and
10 determined what they need to do for their mining
11 applications.

12 Q. How big is a proposed mine?

13 A. About 4550 acres.

14 Q. What mining methods are proposed for the mine?

15 A. Currently, it's going to be highwall mine. By
16 and large, about 95 percent of the mine. It's a very
17 small area they're going treat as a surface mine because
18 there's some remnant coal up there they can access from
19 the surface in a small area they can get started in. But
20 it will be predominantly a highwall mine.

21 Q. Can you briefly describe what you mean by a
22 highwall mine?

23 A. Highwall mine is where you have to develop a
24 highwall, obviously, to approach with a highwall miner.
25 What you generally do is you'll take trench, a box cut, as

1 we used to call those. Remove all the overburden from the
2 box cut. Obviously mine the coal out of the box cut, and
3 then bring a highwall mining unit down into the bottom of
4 the pit. You then insert a series of drifts with a
5 highwall miner into the coal, follow the coal in. In this
6 case, about 2,000 feet each time. On different segments,
7 as you push your way down into the coal-bed, you also
8 leave bits and pieces between the coal extension, between
9 the drifts. So we have solidity and solid structure in
10 that mined area. So we have to prevent subsidence at the
11 same time we're mining.

12 Q. What's the predicted life of the Brook Mine?

13 A. Right now, 12 to 13 years.

14 Q. Who's the operator? Or who's -- who's the
15 applicant?

16 A. The Brook Mine is the applicant. Brook Mining
17 Company.

18 Q. Can you give us a brief description of the
19 timeline of DEQ's work on the permit application?

20 A. Oh, like I said, I began with this during
21 exploration phase in May 2013, the exploration continued
22 throughout 2013 and most of 2014. They were gathering the
23 information of the rock units. Like I said, putting in
24 monitor wells, observation wells, putting together their
25 plan of attack to determine how they're going to mine this

1 coal should that time ever come.

2 Approximately end of October 2014, they
3 submitted the mine permit application, which we found
4 complete on November 3, 2014, and began the first round of
5 analysis of that particular permit application. And then
6 we began to move through our processes, went through the
7 first 150 days. Comments were sent to the mine -- the
8 mining company, and those comments were treated and sent
9 back with their responses.

10 We again reviewed the mining permit application.
11 Those new responses now in place. When back to the
12 process of determining what we needed to require, once,
13 again, did they meet certain conditions in this place we
14 asked them to? Did they solve some of the issues we saw
15 over in this area? Did they take care of all the comments
16 we sent to them in a way that was statutorily and rule and
17 regulation compliant? This period take -- or took
18 approximately a year and a half.

19 Q. You mentioned that there were six rounds of
20 comments in the technical review.

21 A. Yes.

22 Q. When did the Department determine that the
23 application was technically adequate?

24 A. We determined in early December that the permit
25 was technically adequate. December of 2016.

1 Q. When was it published for public comment?

2 A. The first public comment period opened for
3 publication I think it was December 7th that year.

4 Q. Who were the folks at DEQ who worked on
5 reviewing the application?

6 A. Specific individuals you want?

7 Q. Uh-huh.

8 A. Okay. We have Mr. Doug Emme that worked with me
9 on the blasting part, the blasting component of the mine
10 plan, as well as bonding. Doug is our primary bond
11 analyst, as well as our primary blasting analyst. He is a
12 world-renowned expert in this, so I will defer a lot of
13 the blasting comments to him later.

14 We had Ms. Stacy Page, who is no longer with us,
15 that evaluated the vegetation. We had myself. I did the
16 geology and some of the hydrogeology. Some of the other
17 hydrogeology was done by Mr. Muthu Kuchanur and Matt
18 Kunze, who will be testifying later. We had a series of
19 individuals that we asked for assessment of the mine
20 permit application outside of the DEQ. We asked Game &
21 Fish to be our wildlife specialist to examine the wildlife
22 session. Also Fish & Wildlife Service, also to exam the
23 wildlife section. We asked the Army Corps of Engineers to
24 look at our wetland section to determine how robust it was
25 and whether it was meeting the various and sundry

1 requirements under federal law. Let's see. Who else do
2 we have? Drawing a blank right now.

3 Q. How are particular folks picked to review
4 particular parts of the application?

5 A. Primarily based on their expertise. We've been
6 hiring people in individual areas of expertise. When I
7 was hired, for example, it was for exploration and
8 prospecting, as well as mining related to geology.
9 Others, such as Doug Emme, as I talked about, had been a
10 blaster and a blasting foreman at a mine in Montana.

11 Obviously, the outside commenters we had, Game &
12 Fish and the others, are experts in their own rights. We
13 tend to hire individuals that have expertise in these
14 different disparate areas. So we have an expert in
15 vegetation. We have an expert in some of the other
16 aspects. We have engineers that are taking looks at some
17 of the mining plan sequences. We have a sequence of
18 individuals that look at this in their area of expertise
19 and then draw conclusions from that particular area.

20 Q. Who oversaw the decisions made on the Brook
21 Mining application?

22 A. There was a group of individuals. I primarily
23 oversaw most of the decisions that were involved with
24 minor issues that were in the permit application. Some
25 other issues that I'm an expert at fit the mining permit

1 application. Occasionally, we did have to ask for other
2 people's input. For example, sometimes it exceeded my pay
3 grade. It would go higher than me in the DEQ chain of
4 command, where we needed some additional decision makers
5 to give us approval for some things we weren't quite sure
6 on. So in some instances we utilized folks in Cheyenne to
7 give us the information we needed on a -- a higher level
8 than we were able to dictate ourselves.

9 Q. Who oversaw the permit application in Cheyenne?

10 A. That would be Mr. Alan Edwards, who was the
11 deputy director of the Department of Environmental Quality
12 and worked as the LQD administrator during the period of
13 time that we were utilizing him for this particular
14 permit.

15 Q. Is he the -- normally the Land Quality
16 administrator?

17 A. No, he is not.

18 Q. Who is that?

19 A. That would be Mr. Kyle Wendtland.

20 Q. Has he been involved with the Brook Mine permit
21 application decisions?

22 A. He has not.

23 Q. What other duties does Mr. Alan Edwards have
24 with the Department?

25 A. In addition to being the deputy director, he is

1 also the administrator of the Abandoned Mine Lands
2 Project -- or Abandoned Mine Lands -- just went blank --
3 Division.

4 Q. Looking back at the -- at the permit review for
5 this permit, what tools did DEQ use when it was evaluating
6 technical adequacy of the application?

7 A. Well, some of the principal tools that we
8 utilized were modeling systems that are commonly in place
9 for both the geology and hydrology aspects of this. And
10 there were other tools that are utilized in general in
11 mining practices, engineering principles that were
12 utilized, formulas and different kinds of results that
13 come out of those formulas and how efficient is the rock
14 units that bear weight, for example. What kind of
15 materials exist above and below the coal. So we utilized
16 a lot of mathematics and some modeling software that's
17 been recognized industrially and nationally as what we
18 consider to be world-class software. Things like MODFLOW
19 for hydrology that the USGS utilizes, other types of
20 modelers that EPA utilizes in a lot of their work. Models
21 we use and applications we use are all approved by --
22 generally, by large governmental agencies or private
23 agencies that utilize this in their day-to-day work. So
24 they've been agreed upon by many individuals in all
25 aspects of mining and engineering and geology.

1 Q. Did the Department look at statutes in reviewing
2 the Brook Mine application?

3 A. We did. Absolutely.

4 Q. Did the Department look at regulations?

5 A. We did.

6 Q. Generally, what regulations did the Department
7 review for this application?

8 A. A lot of regulations come out of our coal
9 Chapter 2. There was a lot of definition in there as to
10 different pieces of information we need to put together a
11 mine permit. We also utilized Statute 35-11-406 in
12 entirety because it presents in a statutory manner all
13 bits and pieces of information that must be in coal mine
14 application. That is probably the ground base regulation
15 that we primarily fall back on.

16 There are also other chapters that we utilized
17 bits and pieces of them. For example, we utilized Chapter
18 7, Section 2, Subsidence. And we utilized some other
19 chapters as they related to this particular permit
20 application.

21 Q. Did the Department look at any Land Quality
22 Division guidelines?

23 A. We did. We looked at several guidelines. We
24 have a large number of guidelines that cover a lot of
25 different aspects of mining. We utilized these, for

1 example, for hydrology. There's a guideline for
2 hydrology. There are other guidelines for vegetation,
3 guidelines for wildlife, guidelines for anything you can
4 possibly think of to put in the permit application to get
5 a viable stand-up permit application. So guidelines
6 utilize strongly -- we suggest them strongly and utilize
7 them strongly in this process.

8 Q. Are the guidelines -- are the guidelines binding
9 law?

10 A. No, they're not.

11 Q. Are they the measure by which the Department
12 determines if an application is technically adequate?

13 A. No, they're not.

14 Q. You mentioned earlier we talked about the rounds
15 of comments in the technical review process. I'd like you
16 to take the binder next to you that's got tabs inside of
17 it and turn to the tab for DEQ Exhibit 34.

18 A. Okay.

19 Q. Do you know what this document is?

20 A. This is the Index of Change to the actual permit
21 application throughout its rounds of commentary and
22 response.

23 Q. Okay. How many rounds of comments did this
24 document show comments and responses of?

25 A. Six rounds of comments and responses.

1 Q. All right. What -- just kind of generally, what
2 kinds of issues did the comments address?

3 A. There were groundwater issues that showed up.
4 Not so much groundwater issues, but difficulties sometimes
5 finding enough water to get water wells to work
6 efficiently. There were instances of, for example,
7 geologic, lithologic logs that were put into place that
8 appeared to have, in some cases, difficult descriptions of
9 particular materials that were in place. And the
10 descriptors were, in some cases, too short. We asked for
11 larger, longer descriptors so we can determine what
12 material was exactly -- the best we could down there.

13 The other -- for example, we were looking into
14 descriptors of some of the streambeds in that particular
15 area, some of the draws existed there. We wanted them to
16 flesh out some of the descriptions on a lot of draws on
17 there, give us a better sense and idea what they consisted
18 of.

19 Q. Did the comments in Exhibit 34, did those
20 require changes to the application?

21 A. These comments? These were the comments that
22 came in and produced the changes in the application. I
23 know the changes were catalogued right here inside this.

24 Q. Did the applicant -- did the applicant's
25 responses to DEQ's comments satisfy all DEQ's comments?

1 A. Ultimately they did, yes.

2 Q. At the end of the technical review, did Brook
3 Mine's application meet the statutory and regulatory
4 requirements for surface coal mine and permit application?

5 A. Would you rephrase that?

6 Q. After the applicant satisfied DEQ's technical
7 comments, did the application -- the application meet
8 statutory and regulatory requirements?

9 A. It did. That's why it was deemed technically
10 adequate.

11 Q. I'll have you start taking a look at the
12 contents of the application. If I can have you go ahead
13 and put away Exhibit 34. Let's take a look at Exhibit DEQ
14 1.

15 A. Okay.

16 Q. And can you tell me what that document is?

17 A. This is what's called the adjudication volume.
18 The adjudication volume is the area where we began to put
19 together the information on all different legal aspects of
20 ownership, legal aspects of water rights, all legal
21 aspects of right of ways, all the different legal parts of
22 this permit application are put together in this
23 adjudication section. So we can define who is with who,
24 what are the different bits and pieces of utilization of
25 these lands that may be related to some kind of statutes,

1 what is county, what is state, what is federal. It all
2 gets put together here in this one particular document.
3 So all the legal descriptions and all the legal
4 relationships are in here.

5 Q. Are there other parts of the application?

6 A. Yes, there are. There are further parts.

7 Q. About how many different volumes such as that
8 are there in the application?

9 A. In this case there are 12 volumes.

10 Q. All right. I'll have you turn to page -- Bates
11 numbered on the corner -- DEQ 1-002.

12 MR. KUHLMANN: And I'll note for the
13 council's purposes, to jump to the pages, the Bates number
14 for DEQ corresponds with PDF number, so you can just type
15 in the page number.

16 Q. (BY MR. KUHLMANN) Can you tell me what this
17 page is?

18 A. This is an Index of Change sheet.

19 Q. What does that show?

20 A. It shows changes to the adjudication by itself.
21 And so what it does is it puts in the entry that needs to
22 be removed or the part of the permit application that
23 needs to be removed, part of the application needs to be
24 replaced or augmented, and then description of the change
25 itself is...

1 Q. Okay. Is that the -- changes alleged, is that
2 updated over time?

3 A. It is.

4 Q. I'll have you turn to page DEQ 1-044. Can you
5 tell me what this page is?

6 A. This is the table of contents for all the
7 volumes of permit application.

8 Q. Okay. Can you describe generally how the
9 permit -- how a permit application like this is organized?

10 A. It is organized in kind of an outline manner.
11 Very first volume, as I mentioned, deals with the
12 adjudication, legal aspects of the permit application area
13 and the aspects of the interrelationships in that
14 particular area.

15 The second volume in this particular case was a
16 volume for the maps. The adjudication can produce a lot
17 of maps, ownership maps, right-of-way maps, that kind of
18 thing. And so the second adjudication volume is simply
19 all the maps that related to the narrative in the first
20 volume.

21 This is the -- excuse me, the third volume in
22 this -- in this case is -- consists of four different
23 areas. The first appendix is based -- bases itself on use
24 of the land. Ever since -- anybody knows all the way
25 through written history to the present.

1 The second one is primarily the history of the
2 area. So not just the use of the land, but who was there
3 and what were they doing at the time, throughout the
4 entire period of time.

5 The third one is archaeological resources,
6 cultural resources and paleontological resources, if they
7 exist or not exist.

8 Number four is climatology. So Appendix D4 in
9 that third volume dictates what the climate has been like
10 over the measurable period of time whenever that happened
11 to be.

12 The fourth volume, Appendix D5, the topography,
13 the geology, the overburden materials that exist in the
14 area, and define all the rock characteristics and rock --
15 hydraulic characteristics in the area.

16 Volume V defines the hydrology itself, how the
17 water is working in those aquifers, in those units that
18 have water in them, what is it doing, what is the water
19 quality like, what can we expect throughout my life and
20 afterwards.

21 The Volume VI, which is the Appendix D7, is the
22 resources -- soil resources that have been evaluated by
23 our soil scientist who is an expert in soils.

24 The Volume VIII -- excuse me, Volume VII is the
25 vegetation inventory. That is, our expert vegetation

1 analyst has covered all of the possible vegetation
2 communities in the area of the permit application and
3 outside the permit application.

4 Volume VIII is Appendix D9, which is the
5 wildlife. Again, I said the Game & Fish did this
6 section -- or I should say commented on the section.
7 Brook did the section. Game & Fish commented on it.
8 Critiqued it.

9 Volume IX is Appendix D10, which is the wetlands
10 that the Army Corps of Engineers reviewed for us.

11 Tenth volume, Appendix D11 is on alluvial valley
12 floors.

13 Volume XI and XII are the mine plan and
14 reclamation plan. The appendices actually are the
15 baseline data. All those different appendices in the
16 different areas are baseline data for the mine plan and
17 recollection. So everything is pointing towards the mine
18 plan and reclamation plan.

19 Q. You mentioned a number of appendices labeled D
20 and then a number following it. Are there other
21 appendices as well?

22 A. There are also appendices within the
23 adjudication volume, A, B C and E. It's the D appendices
24 that are pretty voluminous.

25 Q. I'll have you turn to page DEQ 1-050.

1 A. Okay.

2 Q. Can you tell me what this page is?

3 A. This is a Form 1 that is a Land Quality Division
4 form to fill out the basic information of the individuals
5 or individual that desires a coal mining permit. So all
6 the -- all the different pieces of information as far as
7 address, individuals that are responsible for things,
8 different bits and pieces of information that relate
9 directly to the mining are captured in this particular
10 document. This document is almost twofold in a way. They
11 begin the mining permit application with the document
12 filled in and primarily the first page, and there are
13 other aspects of this particular form that show up after
14 the review process has taken place. So the Form 1, when
15 it is finally completed and accepted by Land Quality
16 Division is the unit that they utilize for the legal right
17 to mine.

18 Q. You can turn to page DEQ 1-053.

19 A. Okay.

20 Q. What is the main purpose of this page?

21 A. This page is to add conditions on that may have
22 been -- may have shown up in a review of mining
23 application. These are items that may or may not be a
24 complex nature or a simple nature, depending upon what it
25 is, that needs to be ensured that it will be in this

1 permit and that these activities will occur
2 unquestionably. And this particular area here, then we
3 can put these very special conditions to point where we
4 want the miners to work. We want you to be careful of the
5 alluvial valley floors. We want you to be careful of some
6 of the overburden materials. What we'll do in these
7 particular conditions is outline exactly how LQD wants to
8 see it. It's enforceable. We enforce on that. So,
9 therefore, whatever we have in here, conditions must be
10 withheld and -- excuse me, upheld and practiced by the
11 company themselves.

12 Q. And turn now to DEQ page 1-066.

13 A. Okay.

14 Q. Can you tell me what this part of the
15 adjudication file is?

16 A. This is an estimate of the surface damage bond
17 for Big Horn Coal -- Big Horn Coal Company's surface
18 ownership area.

19 Q. Who created that document?

20 A. The document was created by Western Water
21 Consulting Engineering.

22 Q. Who do they work for?

23 A. They are working for Brook Mine.

24 Q. Has DEQ set a surface protection bond for Big
25 Horn Coal Company's property yet?

1 A. We have not.

2 Q. Will it do so?

3 A. We will.

4 Q. When?

5 A. Upon all of the -- the proceedings you find in
6 our original letter of technical adequacy was indeed
7 correct and straightforward and that the public review
8 process had been continued to the time it needed to be
9 continued and everything right before the director decides
10 to sign the permit into law -- or into -- excuse me, into
11 use. At that point in time the bond must be produced by
12 Brook Mine prior to the issuance of the permit.

13 Q. Thank you.

14 Can you turn now to DEQ 1-102.

15 A. Okay.

16 Q. And what is this section of the adjudication
17 file?

18 A. This is also a surface damage bond. Mine
19 surface damage bond for Padlock Ranch.

20 Q. Who created that document?

21 A. Western Water Consultants.

22 Q. Does DEQ need to require a surface protection
23 bond for Padlock Ranch's lands?

24 A. We do not have to have a mine surface damage
25 bond.

1 Q. Why is that?

2 A. There is, to the best of our knowledge, a
3 surface use agreement in place now between Brook Mine and
4 Padlock Ranch.

5 Q. Have you turn now to DEQ 1-232.

6 A. I'm there.

7 Q. Can you tell me what part of the adjudication
8 file this is?

9 A. Yeah, the -- this is Appendix A in the
10 adjudication volume. It has things like the names and
11 addresses of the surface and mineral rights holders, all
12 the maps that are related to the surface and mineral
13 rights holders as well. And also, if it existed, it would
14 be oil and gas leases within the area. There are no oil
15 and gas leases within the permit area, so they were not
16 listed.

17 Q. Are there any maps that reflect the information
18 Appendix A?

19 A. There are.

20 Q. Where are those located in the permit
21 application?

22 A. They are located in Volume I-A, excuse me, which
23 is called Volume II in this particular set of -- so I
24 can't --

25 Q. I won't ask you to go to that just yet.

1 A. Okay.

2 Q. Can you turn now to DEQ 1-264. Still in Exhibit
3 DEQ 1.

4 A. 264. Okay.

5 Q. Please tell me what this part of the
6 adjudication file is.

7 A. This is the names and addresses of -- again, of
8 surface rights and mineral rights within half mile of the
9 permit boundary. The first one was within permit
10 boundary, and these were all those people within half mile
11 of the permit boundary.

12 Q. Is there a map that also reflects this
13 information?

14 A. Yes, there is.

15 Q. Where is that map located?

16 A. It would be in this volume right here.

17 Q. What volume number is that?

18 A. That is Volume II in this book.

19 Q. Can you turn now to DEQ 1-372.

20 A. Okay.

21 Q. Can you tell me what this part of the permit
22 application is?

23 A. These are actually water rights within
24 three miles of the permit boundary -- within and in
25 three miles of the permit boundary.

1 Q. I'll have you turn now to DEQ 1-447.

2 A. Okay.

3 Q. Can you tell me what this part of the permit --
4 or the adjudication volume is?

5 A. This is Appendix C in the adjudication volume.
6 And this covers legal description of lands itself within
7 the permit application of the different survey plats that
8 were utilized in determining these lands, lands with --
9 sometimes within a different permit, as well as the permit
10 application that bond trying to do, different memorandums
11 of agreement between mineral owners and surface owners.
12 By and large, the actual land itself relationships of that
13 land to individuals or entities that are directly
14 responsible for it.

15 Q. Are there maps associated with this information
16 in Volume II?

17 A. There are.

18 Q. All right. Now I'll have you turn to DEQ 1-465.

19 A. Okay.

20 Q. And can you tell me what this part of the permit
21 application is?

22 A. This is the part of the application that
23 outlines the different surface rights that the Brook
24 Mine's been able to -- to acquire for right to mine --
25 consent for right to mine and right of entry.

1 Q. Okay. Can you turn to page DEQ 1-476.

2 A. Okay.

3 Q. Can you tell me what this document is?

4 A. This is a typical what we call the LQD Form 8.

5 And the form has two primary goals. One, of course, is to
6 list the lands involved in this landowner's consent. So
7 that lists the landowners with direct lands that are going
8 to be inside the permit boundary. And it states -- the
9 landowner states that he's examined the mine plan, the
10 reclamation plan and approves of them. And, secondly,
11 will give his or her consent to enter and inspect those
12 lands by the LQD.

13 Q. What landowner does this particular Form 8
14 relate to?

15 A. This one is for -- this would actually be for
16 Padlock. Mr. Hubert Patterson III, president and CEO of
17 Padlock Ranch.

18 Q. Can you turn now to DEQ 1-502. Can you tell me
19 what this document is?

20 A. This one is the -- I believe it's the order in
21 lieu of consent that Brook Mine received from this council
22 last year.

23 Q. When was this document put into the permit
24 application?

25 A. This was placed in the permit application on

1 November 23, 2016.

2 Q. Have you turn now to page DEQ 1-540.

3 A. Okay.

4 Q. Can you tell me what this part of the permit
5 application is?

6 A. This is a legal description of locations of
7 buildings within an adjacent -- within a half mile of the
8 permit area.

9 Q. What's the purpose of this section of the permit
10 application?

11 A. This is to categorize those pieces of
12 infrastructure that exist prior to any mining in the
13 permit area or close to the permit area.

14 Q. Have you turn now to DEQ 1-548.

15 A. Okay.

16 Q. Can you tell me what this document is?

17 A. This is a list of different permits and licenses
18 that Brook will have to have from various and sundry
19 agencies to do their mining operation.

20 Q. Does Brook Mine need to obtain all of these
21 types of permits or approvals listed on this page?

22 A. They may, but only the ones that LQD issues are
23 the ones we can actually enforce.

24 Q. So who would require the applicant to obtain
25 these types of permits?

1 A. The different agencies, reporting agencies
2 that -- these are associated with. For example, we have
3 Land Quality Division -- of course, us -- then we go into
4 Solid and Hazardous Waste Division, Water Quality, Air
5 Quality, MSHA license listing here. Also state mine
6 inspectors listed. An EATF is listed down there. And
7 Water Quality Division at the bottom.

8 Q. And if Brook -- if the applicant obtained any of
9 those permits, does the Land Quality Division enforce
10 those?

11 A. No, we don't. We don't enforce all those. Only
12 the ones that say Land Quality Division.

13 MR. KUHLMANN: All right. That's all the
14 questions I have for DEQ Exhibit 1. Since we haven't done
15 any stipulations at this point, I'd ask the council to
16 admit DEQ Exhibit 1.

17 CHAIRMAN BAGLEY: Are there any concerns?

18 MR. GILBERTZ: No objection.

19 MS. ANDERSON: No objection.

20 CHAIRMAN BAGLEY: Thank you. It's
21 admitted.

22 (DEQ Exhibit No. 1
23 received in evidence.)

24 MR. KUHLMANN: Thank you, Mr. Chairman.
25 I'd also ask DEQ Exhibit 34 be admitted.

1 CHAIRMAN BAGLEY: Any objections?

2 MS. BOOMGAARDEN: No objection.

3 MS. ANDERSON: No objection.

4 CHAIRMAN BAGLEY: We'll admit DEQ

5 Exhibit 34.

6 MR. KUHLMANN: Thank you.

7 (DEQ Exhibit No. 34

8 received in evidence.)

9 Q. (BY MR. KUHLMANN) Have you take a look now at
10 Exhibit DEQ 2. Can you tell me what this document is
11 first? Do you know what it is?

12 A. I am looking at it. This is the series of
13 comments, team responses to the permit application itself.
14 So these are all the documents that we generated in order
15 to come up with the technical adequacy classification.
16 These are the generated notes.

17 Q. And those documents relate to the particular
18 comments from the department process?

19 A. They do. They relate --

20 THE REPORTER: I'm sorry.

21 THE WITNESS: They relate to very specific
22 comments.

23 Q. (BY MR. KUHLMANN) Who created that document?

24 A. This document be created by -- the actual
25 authorship in letters is joint between me and

1 Mr. Jeff Barron of Western Water. But the document's
2 created by whole groups of individuals. The reviewer --
3 the first set of comments come back, the reviewers that
4 did the original work get to look at those comments, very
5 obviously, in the responses. And they may or may not have
6 further comments based on how well the original ones were
7 taken care of. And so what this represents is all the
8 different individuals we talked about earlier, the
9 experts, as well as the other ones who were involved in
10 the permitting application process and during the permit
11 application process.

12 Q. I'll ask you to go ahead and take a look now at
13 DEQ Exhibit 3.

14 A. Okay.

15 Q. Do you know what this document is?

16 A. This is the second part of the adjudication
17 volume that has the maps.

18 Q. Okay. I'm going to ask you to take a look at a
19 couple of those pages, and recognizing that they're
20 folded-up maps, as I have you pull them out and have you
21 answer some questions. Please don't worry about trying to
22 fold those back up entirely to put them away before I ask
23 you to take a look at the next map.

24 A. Okay.

25 Q. Can you please turn to page DEQ 3-008.

1 A. Okay.

2 Q. Can you tell me what this document is?

3 A. This is a depiction of the surface rights, the
4 different structures involved in and around the permit
5 boundary, more that may exist in there. There's some
6 different leases, conventional leaseholders, as well as
7 grazing leases. So this is all the surface information
8 necessary to determine who has what rights to the surface
9 in this area.

10 Q. Go ahead and please open that up.

11 For the council's benefit I'll ask, can you tell
12 me what the solid blue line indicates on that map?

13 A. The solid blue line is the Brook Mine
14 approximate -- oh, I should say permit boundary that's
15 being applied for in the permit application.

16 Q. Okay. Just tell us what the dashed blue line
17 indicates.

18 A. Dashed blue line is run one half mile off of
19 that permit boundary.

20 Q. Are those markings common to other maps inside
21 adjudication file?

22 A. They're similar.

23 Q. Go ahead and have you put that map aside for
24 now. That will do.

25 A. Good? Okay.

1 Q. Thank you.

2 Please turn to DEQ 3-011. Please tell me what
3 this document is.

4 A. Okay. These are lands that would be affected
5 by -- or have been affected by mining in the past, and
6 the -- showing the area of disturbance of the historical
7 mining, both underground as well as surface. And areas
8 within a half mile of permit boundary that have also
9 been -- historically been mined, either underground or
10 surface.

11 Q. There are a number of colored areas on this map.
12 Can you describe what the different colored areas
13 represent?

14 A. The brown areas that look like a -- in some
15 cases a linear feature along -- little sidebar features
16 are underground mines reflecting both the area of
17 underground mining, as well as sometimes gateways and
18 other aspects of underground mining. The -- should say
19 the blue on the upper right-hand corner and top of the map
20 are surface mined. They were mined previously by surface
21 mining operations. And the hatched area -- the purple
22 hatched area is the area Big Horn Coal has right now in
23 their permit -- in their permit.

24 Q. I believe there's an area colored in green. Can
25 you tell us what that is?

1 A. That green is a mine. It's a small mining
2 permit held by Taylor Quarry where they mine scoria and
3 sell the red rock for ballast and roads and everything
4 else. They're usually --

5 Q. Is that inside the Brook Mine permit area?

6 A. It is inside the Brook Mine permit area.

7 Q. Is the Big Horn Coal Company permit area inside
8 the Brook Mine permit area?

9 A. It is in places inside the Brook Mine permit
10 area.

11 Q. There's also an area I believe bordered in
12 orange in -- tell us what that area indicates.

13 A. This area is a pit. It's also a scoria pit.
14 Maintained and run by Tongue River Stone. It is an active
15 scoria pit at present. And a fairly small, fairly quiet
16 operation, but it does exist.

17 Q. Does the Tongue River Stone scoria pit fall
18 inside the Brook Mine permit area?

19 A. It does not.

20 Q. Ask you now to turn to DEQ 3-012. I won't ask
21 you to open up this map.

22 A. Okay. Well, thank you.

23 Q. Yeah. Are you familiar with all of the maps in
24 the --

25 A. I am, yes.

1 Q. -- permit application area?

2 A. I am.

3 Q. Can you tell us what this document is?

4 A. This is the -- all the water rights that occur
5 within the permit application boundary, as well as a half
6 mile outside of the permit application boundary.

7 Q. Can you turn to page DEQ 3-014.

8 A. Okay.

9 Q. And without opening that, can you tell me what
10 that document is?

11 A. This is the depiction of all the surface water
12 rights inside the proposed permit boundary, as well as
13 water rights within three miles of the outside of the
14 permit boundary.

15 Q. And is there a particular type of water rights
16 shown on that map?

17 A. I don't know. I'll have to open it.

18 Q. Okay. You can do that.

19 A. The primary type of water right generally is
20 a permit held by the State Engineer's Office. All the
21 water in the state of Wyoming is owned by the State of
22 Wyoming. In order to utilize that water, you've got
23 to file a permit for use of the water, estimating
24 how much you're going to use, how much water is
25 available, what the water quality's like in some cases,

1 not all.

2 Q. Does this map show surface or groundwater
3 rights?

4 A. In this case, this is surface water rights.

5 Q. Is there another map that shows the groundwater
6 rights in your permit area?

7 A. It is the next map.

8 Q. Okay.

9 A. Almost got it.

10 Q. And turning to page DEQ 1- -- I'm sorry --
11 DEQ 3-015. Can you tell me what that document is?

12 A. This is the groundwater rights inside and within
13 three miles of the permit boundary itself.

14 Q. Okay. Thank you.

15 MR. KUHLMANN: At this point, Mr. Chairman,
16 I think if we could have a short break. We have made
17 faster time than I thought we might, unless the council
18 is planning to recess here soon. We're coming up at
19 5:00?

20 CHAIRMAN BAGLEY: We won't be recessing for
21 the day yet, but we can take a five-minute break at this
22 time.

23 MS. ANDERSON: Were you going to admit 3?

24 MR. KUHLMANN: We'll ask that Exhibit 2 and
25 3 be admitted.

1 CHAIRMAN BAGLEY: Any objection?

2 MS. BOOMGAARDEN: No objection.

3 CHAIRMAN BAGLEY: Exhibits DEQ 2 and 3 are
4 admitted. So now we'll take a five-minute break.

5 (DEQ Exhibit Nos. 2 and 3
6 received in evidence.)

7 (Hearing proceedings recessed
8 5:01 p.m. to 5:12 p.m.)

9 CHAIRMAN BAGLEY: So we'll -- for those who
10 are looking at their watches and wondering if we'll ever
11 get to eat or anything like that, we're going to go -- it's
12 about 5:13. We'll go to no later than 6:15 tonight, then
13 we'll take a recess until morning.

14 Tomorrow morning we will start right at 9:00 a.m.
15 But if you need to get things set up, make sure you get
16 here before that. That's why we're starting at 9:00, so
17 there's time to get technology back up and everything in
18 place. And so we'll go for about another hour here. So,
19 please, Mr. Kuhlmann, continue.

20 MR. KUHLMANN: Thank you, Mr. Chairman.

21 For the benefit of council and for the parties,
22 we are intending to go through the remaining exhibits for
23 the permit application. We may also, depending upon how
24 far we can get, talk about Exhibit -- DEQ 15 and DEQ 16.
25 So DEQ Exhibits 1 through 13 and then 15 and 16, just in

1 case anyone has objections.

2 I also -- just to make it -- kind of short work
3 of it, DEQ Exhibits 1 through -- I guess, remaining ones, 4
4 through 13 are volumes of the permit application. I might
5 ask to just admit those now, if there are no objections.
6 If not, we can go through and establish --

7 CHAIRMAN BAGLEY: Any objections to
8 admitting those exhibits?

9 MS. ANDERSON: No objection.

10 MS. BOOMGAARDEN: No objection.

11 CHAIRMAN BAGLEY: We'll admit DEQ Exhibits
12 4 through 13.

13 (DEQ Exhibit Nos. 4-13 and
14 15 and 16 received in evidence.)

15 MR. KUHLMANN: Thank you, Mr. Chairman.

16 Q. (BY CHAIRMAN BAGLEY) Mr. Kristiansen, can you
17 please take a look at DEQ Exhibit 4.

18 A. I have it.

19 Q. All right. Can you please turn to DEQ 4-005.

20 A. I'm at it.

21 Q. Can you tell me what this part of the permit
22 application is?

23 A. This part of the permit application is Appendix
24 D1, one of the many appendices involved within D appendix
25 classification. And it is an appendix about land use.

1 Q. What's the purpose of this appendix?

2 A. To determine what different uses exist for the
3 land, as it existed, as exists today, and should exist in
4 the future.

5 Q. What kinds of uses does it -- does this appendix
6 discuss?

7 A. This discusses past land uses. For example,
8 it's grazing land, some -- in some cases there's
9 industrial, commercial development in some areas.
10 Actually, more in the past than there is now. And it's
11 also recreational land in some areas. Some of it's
12 residential land, where the landowner lives. So the land
13 use is -- covers quite a broad range of uses.

14 Q. I apologize. I believe you mentioned both past
15 and current uses?

16 A. Yes.

17 Q. Turning now to page 4-043. Can you tell me what
18 this part of the permit application is?

19 A. Not quite there.

20 Q. Sorry.

21 A. There we go.

22 Q. 4-043.

23 A. Yes. Appendix D2, history.

24 Q. What is the purpose of this appendix?

25 A. It outlines the history of the area. All the

1 history can be gleaned from the historical records,
2 anecdotal information, anyplace -- old publications
3 anyplace you can find history of the area, they have put
4 together -- paint a picture of the history of this
5 particular part of Sheridan County.

6 Q. Compared to other permit applications you
7 reviewed, how thorough is this appendix?

8 A. This is a very thorough appendix. A lot of
9 cases, history -- there's a lot of assumption based on
10 agricultural land, agricultural uses, particularly out in
11 the middle of the Powder River Basin where the mines are
12 very, very large and there are vast swaths of agricultural
13 land, you know, pastureland. It's been used for pasture
14 for generations.

15 The history of this area has a little bit more
16 activity taking place, and so some of these pieces of
17 information that are recorded here are of materials that I
18 didn't even know about in some cases.

19 Q. Turn now to page 4-066. And when you get there,
20 can you tell me what this part of the permit application
21 is?

22 A. This is Appendix D3 cultural and paleontological
23 resources.

24 Q. Is there anything unique about the Brook Mine
25 permit application as relates to Appendix D3 compared to

1 other applications you've reviewed?

2 A. This -- in this case, since it's all private
3 property and private coal rights, there are no cultural
4 and paleontological surveys that have been performed.

5 Q. Are cultural and paleontological surveys
6 required when there is surface -- private surface land,
7 private mineral owners?

8 A. They are not required when there's private
9 surface and private mineral owners.

10 Q. Did DEQ request comments from the State Historic
11 Preservation Office?

12 A. We did.

13 Q. When did that occur?

14 A. That would have been in November 2014. Late
15 November 2014.

16 Q. Okay. And what was provided to the State
17 Historic Preservation Office?

18 A. We gave them a letter that defined our reason
19 for contacting them, and where they could find the
20 information we were referring to. They can be found in
21 either our Sheridan or Cheyenne office. And gave them the
22 opportunity to go to those offices to look at the permit
23 application. Should they decide to do so. The Cheyenne
24 location was -- we felt was a good match because SHPO was
25 there in Cheyenne as well.

1 Q. What was their response to you?

2 A. We didn't have a response -- well, we did have a
3 response. It was this is private surface and private
4 mineral, we don't have any response -- comments.

5 Q. Does the permit application in other places
6 address what would happen if historic or archeological
7 resources are found during the mining operation?

8 A. Yes, it does. It's in the mine plan.

9 Q. And what are the commitments related to locating
10 historic or archeological resources during the mine?

11 A. In a nutshell, if any artifacts or objects are
12 discovered that would indicate cultural and
13 paleontological resources, mining would stop in that area.
14 The area would be essentially blocked off so no one could
15 get in there and do something to that particular area,
16 such as illegal collecting. And experts would be called
17 in to do a paleontological or archaeological clearance
18 survey in that area.

19 Q. Have you turn now to DEQ 4-077.

20 A. I'm there.

21 Q. Can you tell me what that part of the permit
22 application is?

23 A. This is Appendix D4, climatology. Covers the
24 climatological overview of this part of Sheridan County,
25 temperature, wind, evaporation, humidity, all the

1 different aspects of climate -- climatology that are
2 involved in that science are in this particular volume.
3 Also has historic climatological information from wind,
4 temperatures, rainfall also recorded in here.

5 Q. Thank you.

6 I'll have you close that volume. If you could
7 please turn to Exhibit DEQ 5. Can you tell us what this
8 exhibit is?

9 A. This is Appendix D5, geology and overburden.

10 Q. What's the purpose of Appendix D5?

11 A. D5 is to define all the geologic units I talked
12 about earlier to very great degrees so we can anticipate
13 what kind of mining practices may have to take place in
14 these areas. They may depict rock units that we have to
15 be -- pay special close attention to because they may be
16 soft rocks in an area that we may have to have harder rock
17 formations. They are bits and pieces of the topography.

18 For example, in those rock units above the coal
19 there can be constituents in there -- qualitywise
20 constituents that are unacceptable to be spoiled, for
21 example, into a groundwater zone. And so those parts of
22 overburden have to be special handled by the mining. They
23 would have to come in and move the dirt specially to place
24 it above the water table so that when that material goes
25 into the hole again, it stays above the water table and

1 below the root zone. There are special places to put that
2 material, and so the geology and overburden assessment
3 will help define where they have to go. One of the many
4 mines I worked at did this on a continual basis.

5 Q. Who reviewed Appendix D5?

6 A. I did.

7 Q. Can you briefly describe coal seams -- which
8 coal seams Brook Mine's proposing to mine?

9 A. Brook Mine's proposing to mine the Monarch coal
10 bed, the Carney coal bed and the Masters coal bed.

11 Q. Which of those coal seams would be mined with
12 the highwall mining technique?

13 A. That will be both the Carney and Masters beds.

14 Q. Does Appendix D5 include information about those
15 coal beds?

16 A. It does.

17 Q. Can you describe what the overburden is above
18 the coal beds?

19 A. What the nature of the overburden is?

20 Q. Right.

21 A. The overburden consists primarily of silts and
22 shales and sandstone -- interbed silts, shales and
23 sandstone. Blah. And these units above the coal are the
24 units that we have to be concerned with whether or not
25 their quality is suitable enough to place back in the

1 backfill. But by and large, these are deposits that were
2 deposited into a coal swamp during periods of high
3 velocity water. So you get very long, quiet period of
4 coal deposition taking place over thousands to hundreds of
5 thousands of years and Big Horn Mountains start getting
6 back up into the air again, kicking the weight up, and all
7 the material comes down off the mountains and washes out
8 across this big coal swamp and forms those burden units
9 above the coal.

10 Q. Are there any geologic hazards inside the permit
11 area?

12 A. There are several geologic hazards within the
13 area. Defined geologic hazards.

14 Q. What would you define a geologic hazard as?

15 A. Faulting. There's some faulting that takes
16 place within the mine. There is also -- there are always
17 geologic hazards of a highwall when you're mining in any
18 kind of open pit mine. There are also potential hazards
19 in locating pinch-out areas. For example, if you have
20 coal that may be pinching out into sandstone very quickly,
21 as happens in the eastern part of the Powder River Basin.
22 Your highwall conditions, you have to pay close attention
23 to those because the highwall starts getting unstable in
24 those areas.

25 None of those have been identified at Brook

1 Mine, as they have back in the other part of the basin.

2 But those are the kinds of geologic materials that we keep
3 our eyes -- particularly stringently looking and carrying
4 forward, the information forward.

5 Q. Does Appendix D5 characterize geologic hazards
6 inside the permit area?

7 A. It does.

8 Q. If there are geologic hazards in the permit
9 area, does that mean mining can't occur?

10 A. No, it does not.

11 Q. How are -- how does DEQ handle regulating mining
12 the geologic hazards present?

13 A. First, the hazards are identified, exactly what
14 kind of hazards they are and the nature of the hazards,
15 determine what kind of risks exists from these different
16 hazards. For example, the faults in this particular mine
17 are not very big. They're fairly small faults. We don't
18 expect a lot of movement along those fault planes when we
19 begin to move the overburden right next to them. We see
20 these up in Montana -- southern Montana as well. Same
21 kind of faulting systems show up in the Decker Mine up
22 there, as well as the Spring Creek Mine.

23 The mining hazards that we see in the geologic
24 hazards, after they're all listed, we establish
25 methodology for dealing with them, depending upon what

1 needs to be done by the mining engineers. They will
2 design the cuts, they will design the trenches, they'll
3 design everything else within the mines so it fits within
4 those geologic hazards and they are accounted for, so
5 they're not surprised later on down the road.

6 Q. How did the applicant obtain the information
7 included in the Appendix D6?

8 A. That came from all the drill holes they did in
9 2012, '13, '14. During that period they were drilling on
10 the coal notification.

11 Q. Did they consult with DEQ in picking locations
12 of the drill holes?

13 A. They did.

14 Q. When did they do that?

15 A. They did that starting in 2013 and 2014, when
16 they were doing overburden sampling and they needed to
17 know approximately where the holes needed to be for the
18 overburden sampling. We require holes initially to be in
19 the 160-acre spacing. Brook was putting them on 180-
20 spacings. So we were selecting those locations for those
21 particular holes off the original drilling they did.

22 Q. Was there more drilling than -- for the Brook
23 Mine than would be required in the regulations?

24 A. There was in this particular case. The
25 overburden sampling was on tighter configuration than

1 we're normally used to.

2 Q. Was there any testing of those samples?

3 A. They were tested.

4 Q. What kinds of things were tested for?

5 A. The coal, for example we tested for all its
6 burning characteristics, obviously. A lot of the
7 overburden materials were tested for nature of material,
8 what the clay density was, the sand density was and some
9 of these other that determined how heavy the overburden's
10 going to be were characterized by geotechnical
11 engineering. There were also some small amounts of tests
12 performed on the immediate roof of the coal material, the
13 coal material itself and the floor of the coal, so that
14 they could determine what might be the characteristics of
15 the highwall mining that's taking place.

16 Q. Is DEQ satisfied by the amount of drilling and
17 testing conducted for making Appendix D5?

18 A. There were a couple of areas they could not
19 access due to limitations, and so we were -- worked out a
20 considerable -- or, excuse me -- a consideration that they
21 were going to gather those overburden samples prior to any
22 mining activity taking place or disturbance taking place,
23 the condition of permit.

24 Q. Is the lack of the -- the mining samples from
25 those locations Brook Mine was not able to access prior to

1 the application, does the lack of having those in the
2 permit application make the application deficient?

3 A. No. It does not, primarily because the spacing
4 of the original holes. They were close enough together
5 that we could extrapolate through a lot of those holes
6 into the areas -- we need holes there, but there's enough
7 data we extrapolate into that area for now.

8 Q. So does the application accurately characterize
9 the geology inside and around the permit area?

10 A. It does.

11 Q. I'll have you take a look now at Exhibit D6.
12 It's in the next box. It's another volume.

13 A. Of course it's on the bottom. I forgot to tell
14 you that one of our reviewer's name is Murphy. Okay.

15 Q. He's not a legal expert, correct?

16 A. No.

17 Q. All right. If you will take a look at Exhibit
18 D6 -- excuse me, DEQ 6.

19 A. Yes.

20 Q. Can you tell us what this document is?

21 A. This is the hydrology appendix that covers the
22 hydrologic characteristics of the surface water and
23 groundwater regimes.

24 Q. What kinds of information does Appendix D6
25 contain?

1 A. For example, surface water will contain the
2 amount of surface water found in any of the areas of the
3 study, how regional it is, how dependent upon weather it
4 is, what the characteristics of the water are like, both
5 the amount of water and the quality of the water,
6 particularly very important. Water quality in the state
7 of Wyoming is something particularly precious to us, and
8 so a lot of it has to be calculated and determined.

9 Groundwater, the same, determine how much water
10 is down on the ground, are there any aquifers down there
11 that produce water of usable amounts, that can be used for
12 domestic purposes. Part of the problem with the
13 groundwater in this part of Wyoming in and around the coal
14 mines is the coal beds are the aquifers. And above and
15 below those coal beds there really are no really good
16 aquifers. So by and large, sometimes it's difficult to
17 locate water in some of those sandy and very dry units on
18 this side of the basin, unlike the other side. So these
19 are kinds of studies performed to determine what those
20 characteristics are like.

21 Q. Who at DEQ reviewed the surface -- I'm sorry --
22 the information in Appendix D6?

23 A. I reviewed it. Dr. Muthu Kuchanur reviewed it.
24 Mr. Matt Kunze reviewed it.

25 Q. What parts of Appendix D6 did you review?

1 A. I read the -- more the regional information,
2 regional description, drainage basin description, some of
3 the other large-scale -- the narrative that was involved
4 there. And the very much -- specifics and a lot of
5 modeling we left with Dr. Kuchanur and Mr. Kunze.

6 Q. Did you review the hydrogeology information
7 inside Appendix D6?

8 A. I did.

9 Q. I think you explained a little bit about the
10 hydrogeology inside the permit, correct?

11 A. Correct.

12 Q. Is there anything else you want to add in your
13 explanation to council?

14 A. The area -- the mining area is particularly
15 interesting. The area on the eastern side of the mine has
16 quite a bit of water in the coal. That -- it's just
17 always been that way. Whenever -- when I worked for Big
18 Horn Coal, we were in those pits, that water was just a
19 part of life. As you moved to the west -- fairly quickly
20 moved to the west, you get out of the bathtub. You get a
21 little higher up in the rock units and the water goes
22 away, both the overburden and the coal. There are some of
23 those water wells that had to have special practices put
24 into place to even get water samples. It's so dry. By
25 and large, when a drill works on it and they blow on that

1 hole, all they get is mist as the main water being made in
2 it. So the characteristics of the water change -- the
3 hydrology changed across the mine fairly quickly, from
4 that little bathtub that sits down there where the TR-1 is
5 at, very quickly up those hills where TR-2 and 3 and 4 and
6 the rest of them are at. So we get up out of the water
7 fairly quickly within the first two years of mine life.

8 Q. Does the permit application -- or does the
9 information in D6 address that description you had of the
10 differences in the hydrogeology between different parts of
11 the permit?

12 A. It does.

13 Q. How do they collect that -- how did the
14 applicant collect that information?

15 A. A lot of the information was collected from the
16 water wells that were put into place, the monitor wells
17 that were put into place to observe the characteristics.
18 They didn't just put monitor wells in the coal. They
19 attempted to put monitor wells in the overburden as well
20 to see if they could get any water out of some of those
21 sandstone units to monitors, if nothing else. And by and
22 large, that was -- that was not successful in those cases.

23 Q. Does Appendix D6 contain the results of that
24 monitoring?

25 A. It does, yes.

1 Q. Did the applicant consult with DEQ prior to
2 selecting the locations of the monitoring sites?

3 A. They did.

4 Q. And when did that occur?

5 A. That was approximately two-thirds of the way
6 through the CN period. When the water wells were
7 beginning to be put in, initially there were a lot of
8 drill holes put into places to see what was down there.
9 And then they began to select places to put water wells in
10 so they were best suited to monitor a fairly large area,
11 because the initial wells, it's pretty critical as to
12 where they put those. And so we determined spacing,
13 nature of material, what we're going to put into it, based
14 on some of the geologic logs, we went over this with
15 Western Water ourselves and determined where some of the
16 best characteristics were and try to measure hydrology of
17 the units.

18 Q. Did DEQ approve the locations of the monitoring
19 wells?

20 A. We did. There were locations preliminarily
21 located on a map. And by and large, they stuck pretty
22 close to the map.

23 Q. Did DEQ also approve of locations of surface
24 water monitoring?

25 A. Yes, we did.

1 Q. Did DEQ make those approvals prior to work
2 collecting that information?

3 A. We discussed the locations for the surface water
4 sampling sites, and agreed those were adequate locations
5 that should provide information for a bulk of the drainage
6 in that particular part of the mine permit.

7 Q. Okay. Those are all my questions on that
8 exhibit.

9 Ask you to take a look now at DEQ Exhibit 7.

10 A. And I have it.

11 Q. Can you tell us what this document is?

12 A. This is an appendix that addresses soil
13 resources in and around the permit application area.

14 Q. Is that Appendix D7?

15 A. It is.

16 Q. Can you tell us some of the information in
17 Appendix D7 that's relevant to the objections that are
18 filed?

19 A. Would you please rephrase that?

20 Q. Can you tell us some information that can be
21 found -- types of information that can be found in
22 Appendix D7 that are relevant to some of the objections
23 that have been filed against the permit application?

24 A. A lot of cases we utilized a soil analysis to
25 determine what is suitability for reclamation. And

1 there's been some concern about reclamation in most mines
2 for good reason. We don't have a lot of topsoil in the
3 state, and so got to deal with everything we can possibly
4 salvage. And so we have characterized these soils pretty
5 closely. We're pretty concerned about nature of the soil
6 we have and what we can do with it. And so special
7 adherence is placed to these kinds of studies. We are
8 ensuring that we can reclaim the surface to at least its
9 premining condition, if not a better post-mining
10 condition. And that's essentially why we really go all
11 out in getting these samples and doing individual analysis
12 on these soils, so we can match the soil, the post-mine
13 land use and the locations it's going to be in.

14 Q. What types of soils are analyzed in Appendix D7?

15 A. Generally, get these different loamy soils that
16 are analyzed. You also get some kinds of -- they define
17 them as soils by the outcrop, but the -- it's actually a
18 definition of no soil. There are also types of loams out
19 there that are conducive to certain kinds of vegetation.
20 Certain soil units are better for other kinds of
21 vegetation than some other ones are. And so what they've
22 done by this is mapped these units to also understand
23 where they want to put their vegetation species in after
24 the mining has occurred and reclamation starts to occur.

25 Q. Does Appendix D7 have information about the

1 topsoil?

2 A. It does.

3 Q. Was that some of the soils you were discussing?

4 A. Those are the topsoils, yes.

5 Q. Does it also have information about overburden?

6 A. It does not.

7 Q. Where is that information?

8 A. That is in D5, geology.

9 Q. Go ahead and close up that volume.

10 Have you take a look at DEQ Exhibit 8.

11 A. Okay.

12 Q. Can you tell us what this is? What this

13 document is?

14 A. This is the appendix that is related to

15 vegetation.

16 Q. Okay. And just for the council's benefit in

17 reviewing the record later, are there any objections

18 related to vegetation?

19 A. I didn't see any.

20 Q. Okay.

21 A. No, I didn't see any based on vegetation.

22 Q. We'll move on, then.

23 A. Okay.

24 Q. I think maybe in the next box, but DEQ

25 Exhibit 9.

1 A. I have Exhibit 9.

2 Q. Can you tell us what this exhibit is?

3 A. This is the wildlife exhibit.

4 Q. What kind --

5 A. And it is the exhibit that we send to both the
6 Wyoming Game & Fish and Fish & Wildlife Service.

7 Q. What kind of information does this exhibit
8 include?

9 A. There are -- there was information and data
10 collection on, for example, sage grouse. See if there
11 were sage grouse anywhere in this area. And raptors,
12 eagles, bald eagles, if possible, golden eagles. There
13 are migration patterns possible through this area of deer,
14 antelope. Saw an elk out there once. That was only one
15 time. So they generally take this information about all
16 the wildlife species. And this also includes rabbits and
17 ground squirrels, and all the wildlife that lives out
18 there, every species that exists out there and categorizes
19 it and places it in this format.

20 Q. You mentioned sage grouse. What does the
21 application say about sage grouse?

22 A. This is outside of the sage grouse core area,
23 and there is one lek within two miles of the proposed
24 permit application, northwest side of the permit
25 application.

1 Q. How does the permit application address that
2 lek?

3 A. It addresses the fact that they will be
4 monitoring the lek, and that if any observed changes are
5 taking place, they will attempt to determine why they are
6 taking place. It can be predation taking place. It can
7 be sometimes just they abandon leks for whatever reason,
8 and sometimes move to new ones. So it can be a lot of
9 reasons.

10 Q. Is that monitoring more than what the
11 regulations require?

12 A. No. It's -- it's what the regulations require.

13 Q. Were there any restrictions placed on the permit
14 based upon presence of sage grouse in the area?

15 A. There were not.

16 Q. Does the application discuss -- does the
17 application discuss endangered or threatened species?

18 A. It does.

19 Q. What does the application -- what does Appendix
20 D6 have to say about endangered species?

21 A. What it says is essentially any threatened or
22 endangered species will be monitored if they occur in the
23 mine permit -- or close to mine permit area. They didn't
24 find any threatened or endangered species in the area.
25 And so at this point in time it's a commitment within the

1 permit to take action if such species exist or shows up.

2 Q. You mentioned that the Department of Game --
3 Wyoming Department of Game & Fish had reviewed this
4 appendix, correct?

5 A. Right.

6 Q. Did they provide comments back to Brook about
7 this appendix?

8 A. They provided some suggestions. One of those
9 was to be mindful of the sage grouse lek that was in that
10 area, be mindful of the sage grouse different studies that
11 are taking place in the state, and to be very careful they
12 don't intrude on one that wasn't known about.

13 And golden eagle nests. They were saying please
14 observe the locations of golden eagle nests. There are
15 nesting areas close to mine area, in the cliffs in the
16 high country around there.

17 Q. Did the applicant incorporate into the
18 application Game & Fish's suggestions?

19 A. They did.

20 Q. And, similarly, for the US Fish & Wildlife
21 Service, who also reviewed this appendix, correct?

22 A. Yes.

23 Q. Did they have comments that they provided to the
24 applicant?

25 A. Very similar comments, the Game & Fish.

1 Primarily be careful for -- monitor for T&E species. And
2 if they exist, then create a mitigation plan. By and
3 large, it was just a suggestion to be mindful of the
4 wildlife, to observe what was taking place. And this, of
5 course, is done through the annual report every year.
6 Wildlife is monitored every year and the report on that
7 shows up in the annual report.

8 Q. Did the applicant incorporate into the
9 application all of the Fish & Wildlife Service's
10 suggestions?

11 A. The suggestions were so similar to Game & Fish
12 that they would be -- have been incorporated regardless.

13 Q. So there were no outstanding comments on this?

14 A. No, there were not. No, there were no comments
15 to be responded to in any of their correspondence.

16 Q. Okay. Have you take a look at DEQ Exhibit 10.
17 Can you tell us what this document is?

18 A. These are the wetland inventories of the area,
19 which is Appendix D10. And we have some assistance from
20 the Army Corps of Engineers, and, for all intents and
21 purposes, they stated this area was -- the work had been
22 done was sufficient. This area's not a concern.

23 Q. Okay. Moving right along. Have you take a look
24 at DEQ Exhibit 11. Can you tell us what this document is?

25 A. This is a document of alluvial valley floors.

1 Q. Can you describe what alluvial valley floors
2 are?

3 A. Oh. Alluvial valley floor is kind of a catchall
4 phrase for drainages that have the ability to be farmed,
5 for all intents and purposes. AVFs are determined by a
6 lot of different characteristics, by nature and material
7 in the soils, the kind of material that the alluvium, the
8 dirt, essentially, is deposited by the water body, what
9 the characteristics are like, is the area under
10 subirrigation because the water may be in the material,
11 does the area support farming, are there crops being grown
12 along the drainage within the drainage area? There are a
13 lot of different numbers or items to check off as we go
14 into these alluvial valley floors. There are different
15 kinds of alluvial valley floors. And so depending on what
16 we have in our rules and regulations and how they define
17 specific kinds of AVFs, we can utilize those, then, to
18 generate information on potential AVFs in the area.

19 Q. Who reviewed Appendix D11?

20 A. I did.

21 Q. Are alluvial valley floors addressed in DEQ's
22 regulations?

23 A. They are.

24 Q. Is a surface coal mining operation allowed to
25 disturb alluvial valley floors?

1 A. They are.

2 Q. What is -- what protections are required for
3 alluvial valley floors?

4 A. Depending upon whether you're going to disturb
5 them or not, if you can disturb them, they have to be --
6 the channel has to be rebuilt, rechannelized off away from
7 wherever the disturbance is going to be so that the water
8 can continue to flow down through downstream rights
9 holders. And so we generally will offset some distance
10 and put a channel in place for that water to be moving
11 through prior to and during the mining process. Once it's
12 getting reclaimed, then we'll reclaim it as an alluvial
13 valley floor, and so they very specifically place those
14 kinds of materials as almost a false alluvium and they
15 rebuild that material where they're going to put creek
16 bottom back. And so they essentially rebuild it. The
17 most successful one is, of course, is the -- the Belle
18 Fourche River that Cordero Mining mined through and
19 restored and reclaimed to its premining use.

20 Q. Does DEQ have experience with enforcing
21 reclamation of alluvial valley floors?

22 A. We do. Very much so.

23 Q. You mentioned the Belle Fourche River. Are you
24 familiar with any other instances where the alluvial
25 valley floors were disturbed?

1 A. Rawhide Creek in the eastern part of the basin.
2 There were also some Cordero Creek, Caballo Creek, and a
3 couple other ones that come to mind, no AVFs on this side
4 of the basin that I know of. So all the ones I can
5 remember over on the east side of the basin.

6 Q. What information does Appendix D11 include about
7 AVFs in the permit area?

8 A. Would you please clarify that?

9 Q. Generally, what kinds of information does
10 Appendix D11 include regarding the alluvial valley floors
11 in the permit area?

12 A. A narrative of alluvial valley floors, several
13 assessments of potential of alluvial valley floors in the
14 area that I underwent some testing, oh, in -- for a couple
15 of years during the permit application process, in trying
16 to determine where AVFs may be that exist within the mine
17 permit area, and where AVFs might exist outside the mine
18 permit area. I did define and locate one within the mine
19 permit area and studied it and characterized it and built
20 a narrative on it and put it into narrative format
21 document.

22 Q. Is there a map in Appendix D11 that identifies
23 potential alluvial valley floors?

24 A. There is a map in there that does.

25 Q. I'm going to ask you to turn to that map,

1 DEQ 11-031.

2 A. Which one?

3 Q. Page 11 -- page DEQ 11-031. I think you might
4 have gone past.

5 A. I have an 11.3-1, is that it? Superficial
6 geology?

7 Q. I'm looking for a map labeled D11.1-1.

8 A. Potentially Subirrigated Lands.

9 Q. Go ahead and open up that.

10 THE WITNESS: Sorry, Joe.

11 MS. ANDERSON: We needed to wake up a
12 little bit.

13 THE WITNESS: I'm sorry. I'm sorry.

14 Q. (BY MR. KUHLMANN) I'll ask you to open this
15 one, because I think it might be useful as we go through
16 different areas --

17 A. Sure.

18 Q. -- of this exhibit.

19 Can you tell us what the different shaded areas
20 on the map represent?

21 A. These primary shaded areas -- first of all, the
22 red coloration -- this is an aerial photograph. They're
23 taking color infrared photography rather than conventional
24 photography. And all the red or pink areas on there are
25 vegetation. And so the drainages stand out readily.

1 That's why this kind of photography is utilized for this
2 purpose. Drainages really show up and it's wherever
3 vegetation is growing.

4 There are different stippled patterns on this
5 particular map. Over in the eastern side of the map, the
6 right-hand side of the map, in and around the Big Horn
7 Coal mine area, there is a -- declared as an AVF. During
8 the Big Horn Coal mine life, that was declared all the way
9 over to where the clean burn pits are at. The clean burn
10 recreational area. So that area in there, with the
11 verti -- excuse me, the diagonal lines is declared AVF.

12 The other areas from that point on, as you
13 follow that in the southern part of the mine permit area
14 to the west, over to the left is an area that's been --
15 has been defined as potentially subirrigated land, and
16 land that could possibly be an AVF, depending on the
17 constituents and nature of the materials.

18 Q. I'll ask you first about the area you've
19 mentioned as already been confirmed as an AVF.

20 A. Okay.

21 Q. Does that remain declared an AVF for the
22 purposes of the Brook Mine application?

23 A. Once a declaration has been made, it remains in
24 place.

25 Q. Okay. Does the permit application identify that

1 area as an AVF?

2 A. It does.

3 Q. You mentioned that you had identified an area as
4 AVF or alluvial valley floor that was inside the permit
5 area for the purposes of reviewing the Brook application.

6 A. Right.

7 Q. Can you tell us what that area was?

8 A. That area was in the upper left-hand corner,
9 where this -- it's called Slater Creek, comes from the
10 northwest to the southeast and crosses over into the mine
11 and the -- crosses the blue line there. And there was an
12 area right as it crosses the permit boundary in there.
13 And there was a fence out there. Right as it crosses
14 there, there's a bit of alluvial valley floor that tapers
15 out fairly quickly in that area, because historically
16 someone had built a stock dam in there and modified the
17 creek bottom by moving dirt to build a stock dam. It was
18 then breached subsequent to the SEO saying you got to
19 permit all these ponds. So it's typical there are a lot
20 of ponds out here that got breached when they had to
21 permit those because they didn't want to permit the ponds.
22 So there is a pond up in there -- or original stock pond
23 that was breached and affected these properties from that
24 part of the alluvial material all the way downstream for
25 quite a ways.

1 Q. I'm going to hand you another binder here.

2 A. Oh.

3 Q. And ask you to turn to -- I opened it up to
4 Exhibit DEQ 15. Go ahead and keep that out.

5 A. Okay.

6 Q. Here you go. Trying to be careful of the
7 microphone.

8 A. Yeah.

9 Q. Okay. Do you know what this document is?

10 A. Yes. This document contains the AVF
11 determination that I made on Slater Creek and published
12 February 10, 2016.

13 Q. And this was the AVF area you were just talking
14 about?

15 A. It is.

16 Q. When did -- when did you determine that area was
17 an AVF?

18 A. On February 10th. Once I made my -- I did a
19 field walk or a field search on that as we walked up and
20 down the Slater Creek from the permit boundary all the way
21 down to the interstate and back and analyzed the material.
22 A lot of places this is a very incised stream. It's --
23 you know, it's six feet deep and three feet wide, and so
24 we were able to determine the nature of the alluvial
25 materials in these areas. So I classified the type of

1 material that was the alluvium, the amount of water that
2 was available to the system, whether it was being farmed
3 or not, and finally came up with my determination an AVF,
4 Class X AVF.

5 Q. Does the permit application identify the Slater
6 Creek AVF you just discussed?

7 A. Say that again.

8 Q. Does the permit application include description
9 of the AVFs that you just discussed?

10 A. It does not.

11 Q. Okay. Why is that?

12 A. The permit application was technically complete
13 for AVF studies prior to my publishing of AVF
14 determination. So at the time the technical completeness
15 was completed for AVFs, I had not yet accomplished the AVF
16 material and there was nothing for them to put in the
17 application. Once it was declared complete, then we don't
18 revisit that again.

19 Q. Was Brook required to identify or have DEQ
20 declare this area an AVF in order for its permit
21 application to be technically adequate?

22 A. Yes.

23 Q. Does Brook Mine propose to conduct any mining
24 through this AVF?

25 A. No.

1 Q. Is this AVF going to be affected through the
2 mining operations?

3 A. It does not plan to be affected in any way.

4 Q. Does DEQ need to identify alluvial valley floors
5 if they're not going to be affected by a mine operation?

6 A. No, we do not.

7 Q. Is that a regulatory requirement?

8 A. It is. It's a regulatory -- the language in the
9 regulation essentially says that if the AVF is not going
10 to be affected by mining, it does not have to be
11 classified at the time.

12 Q. So what was the purpose of identifying the
13 Slater Creek AVFs they weren't going to be affected?

14 A. Because it was inside the permit boundary, and I
15 felt it was important to get that one classified.

16 Q. Okay. Were there any other areas inside the
17 permit area -- inside the permit area --

18 A. Okay.

19 Q. -- that DEQ considered whether or not they may
20 be an alluvial valley floor?

21 A. Hidden Water Creek area on the north side of the
22 permit was also considered for AVF consideration.

23 Q. What was the conclusion of that consideration?

24 A. The Hidden Water Creek is an ephemeral drainage
25 that has never been farmed, does not have any

1 characteristics of alluvial valley floor, and, therefore,
2 we determined it was simply an ephemeral drainage that
3 flows water from sudden spring storms or runoff after the
4 snow melts. That's the only time water is in that
5 particular drainage. In fact, that drainage doesn't
6 usually flow for maybe years at a time sometimes.

7 Q. Okay. Does an alluvial valley floor have to
8 have sufficient water flow in order to be characterized as
9 an alluvial valley floor?

10 A. It does. It has to have water available.
11 Either through direct watering or at least irrigation.

12 Q. And one final area of possible alluvial valley
13 floors. And you had mentioned when you were describing
14 the map on the exhibit -- the map with the -- you
15 described the vegetation at the time.

16 A. Okay.

17 Q. The infrared.

18 A. Right.

19 Q. You mentioned there was an area that went from
20 along the Tongue River from what had been determined as an
21 alluvial valley floor for the Big Horn Coal permit --

22 A. Right.

23 Q. -- and moving west along the south side of the
24 Brook permit application. Has DEQ considered whether
25 those lands may be alluvial valley floors?

1 A. We have considered that.

2 Q. Are those areas going to be affected by the
3 mining under the permit application?

4 A. They are not.

5 Q. Has DEQ made a declaration of whether or not
6 those lands are alluvial valley floors?

7 A. We have not.

8 Q. Does it need to if those properties are not
9 going to be affected by the mining operations?

10 A. Since they're not going to be affected, they do
11 not yet at this time need to be declared AVF.

12 Q. Okay. I'll have you take a look at Exhibit DEQ
13 16. It's another tab inside the binder you have open, if
14 you can.

15 A. There we go.

16 Q. Do you recognize this document?

17 A. This is one I created on potential AVFs.

18 Q. Does this address that area we were just
19 discussing of the Tongue River -- areas along the Tongue
20 River south of the permit area?

21 A. It does. It shows both the Big Horn AVF
22 acreage, as well as the potential Tongue River AVF acreage
23 all the way toward the western side of the permit
24 boundary.

25 Q. And does that include the conclusions we just

1 talked about, the land being affected by mining?

2 A. Yes, it does.

3 Q. Are those lands otherwise included in permit
4 application?

5 A. They are only included as ancillary to the
6 permit application if they fall within a half-mile radius.
7 Some things occur within a three-mile radius. As they are
8 incidental to the permit boundary they show up.

9 Q. But do they need to be declared an alluvial
10 valley floor in order to make the permit application
11 technically adequate?

12 A. They do not if no affect is going to take place.
13 One of the things we'll have in that permit will be a
14 condition that if at any point in time they're going to
15 affect an AVF in any way, shape or form, we will halt
16 mining in that direction, if necessary, and do a full AVF
17 evaluation study prior to any kind of disturbance taking
18 place there. So one of the conditions of mining will be
19 to protect AVFs that are adjacent to the property.

20 Q. Thank you. You can close up that exhibit.

21 Now ask you to open up DEQ Exhibit 12. It may
22 be in the final box we have.

23 A. It looks like the final box.

24 Q. Hoping it's not in the bottom of the box.

25 A. It's actually --

1 Q. On the bottom?

2 A. -- on the bottom. Fire her.

3 All right.

4 Q. So you now have DEQ Exhibit 12 pulled up?

5 A. Yes, I do.

6 Q. Can you tell us what this document is?

7 A. This document is the mine plan. This is the
8 document that we'll utilize to enforce mining within that
9 permit boundary and enforce all the aspects of the law at
10 our disposal.

11 Q. Does the mine plan identify information about
12 the method of mining?

13 A. It does.

14 Q. Can you describe a little bit more information
15 about the highwall mining technique?

16 A. This is similar to auger mining. That was
17 something that took place 20 and 25 years ago. A couple
18 of the mines I worked at had considered doing it, but
19 decided not to because auger mining is very difficult to
20 keep the whole way straight. And as you're augering down
21 into that coal from the highwall, that hole can take off
22 in different directions, primarily based on the nature of
23 the coal, how fractured is it, how soft or hard is it, and
24 they wander away and have a tendency to cross each other.
25 When they cross each other like that, they start building

1 voids down there. They start building rooms and then you
2 get subsidence.

3 This process is totally different than that
4 particular process, other than they come in from the
5 highwall. Once the coal has been mined out of that
6 trench, they'll set the highwall miner up on one end of
7 the pit. They have these series of 40-foot rails that
8 come in that have a conveyor on them. Right in front of
9 it it has -- there's continuous miner head. It will mine
10 approximately 12 foot wide and 11 feet high. It can go
11 down into the coal bed 2,000 feet with every 40 feet being
12 a new conveyor attached to it and move down into it again.

13 And these are directionally intelligent. They
14 know where they are at in the particular mining sequence.
15 They know where they're at in the coal. They know
16 latitude, longitude, everything else. There are sensors
17 in place in these mining heads that will move it depending
18 on what the nature of the material is. They're looking
19 for coal at all times. They can determine that with a
20 special gamma probe. And they are advertised at least to
21 be accurate to 4 inches in a thousand feet. And so we get
22 away from a lot of those interference you used to get with
23 the auger mining, where they intersect each other. These
24 do not intersect each other. These obey the mine plan,
25 for example, and the -- the mining potential, it's there,

1 and builds a system that is as close to nonsubsiding as
2 possible, and yet can be accessed from the highwall safe.

3 And so, by and large, this new technology has
4 made this possible so it's safe and effective and
5 nonsubsiding.

6 Q. Is highwall mining an improvement on auger
7 mining?

8 A. Significant improvement on auger mining. Very
9 similar from the surface aspect of it. It's still sitting
10 in a bottom of the trench, going into a highwall, but
11 that's about the only similarity.

12 Q. Do both techniques leave ribs between the holes
13 that they dig?

14 A. There are a series of pillars or webs or
15 whatever you want to call them between the shafts that
16 are -- that are dug by the continuous miners. So it may
17 be 12 foot wide shaft and 12-foot wide web, 12-foot-wide
18 shaft, 12-foot web. So there are just intervening
19 pillars.

20 Q. So did DEQ apply the regulations for auger
21 mining to highwall mining technique?

22 A. We did.

23 Q. Through the highwall mining, is there anyone who
24 goes underground?

25 A. No. At no time. I'm sure MSHA would have a lot

1 to say about that.

2 Q. Does highwall mining remove all the coal in the
3 mine coal seam?

4 A. It does not.

5 Q. Does the application identify what percentage of
6 the coal in the mine coal seams that Brook Mining is
7 expected to be able to recover?

8 A. It does.

9 Q. Do you know what that number is?

10 A. The number average is 50 percent recovery, and
11 it varies from place to place, depending on the nature of
12 the material they'll be -- they'll be moving into. The
13 nature of the roof rock and floor.

14 Q. What does the coal that's left unmined do after
15 mining is over?

16 A. It serves to buttress the webs that they put in
17 there, and essentially works as a placeholder -- I should
18 say as a holder for the overburden not to subside in those
19 particular cavities in there in those openings. The idea
20 here is you may be able to come back sometime in the
21 future and get that coal with some other technology that
22 doesn't exist right now. Considering how things changed
23 in the last 20 years, it's quite realistic.

24 Q. I'm going to ask you to turn to page DEQ 12-028.

25 A. Okay. I have it.

1 Q. Okay. Can you describe generally the -- or, I
2 guess, what does this section discuss?

3 A. This particular section discusses the mining
4 methodology, the scheduling of the mining tools and
5 equipment, and the assessments that are made during the
6 mining process.

7 Q. Does that address the mining sequence?

8 A. It does.

9 Q. Can you describe generally the mining sequence
10 for the Brook Mine?

11 A. I'm not quite sure if you want -- where the cuts
12 will be or the nature of the sequential excavations, where
13 they're going to be or what they are.

14 Q. Can you describe the geographic sequence of the
15 mining?

16 A. I can. At present geographically they were
17 planning on starting in what they call TR-1, trench TR-1,
18 immediately south of the Big Horn Coal shop and warehouse
19 facility. And that particular mine trench was to be
20 opened up through an old mining area, Pit 1 that Big Horn
21 Coal had. And they would establish not only coal out of
22 that area, the mine out in that area, but establish a
23 long-term sump. Because, like I said, that is the bottom
24 of the bathtub. What they need to do, in order to have
25 water for their mining and continued water throughout the

1 mining life, they got to have a place to get it.

2 So the water is so deficient farther to the
3 west, they put a sump in at RT-1 and use that for mining
4 water. Again, moving to the west end at that point, very
5 gradually place trenches, remove the overburden sequence,
6 put it off to the side, remove coal, and we cut, do
7 highwall mining, back out of the trench, put overburden
8 back in the hole again, put topsoil on top of it. And
9 they'll do that moving east to west, trench after trench
10 after trench until they go get all the way to the western
11 side of the permit boundary. That will take about 13
12 years.

13 Q. Have you turn to DEQ page 12-129. It's going to
14 be a map.

15 A. Oh. There it is. I have it open.

16 Q. Can you tell us what this document is?

17 A. Okay. This shows the sequence of disturbance
18 that's going to happen on the surface. Obviously being a
19 highwall mine, there will be surficial disturbance in and
20 around the trench area and other areas that will need to
21 utilize overburden materials at. So this shows the
22 sequence under which that material will be moved, where it
23 will be placed and the approximate scheduling of that.

24 Q. How does the -- does the map indicate where the
25 trenches are located?

1 A. It does.

2 Q. How does it indicate those?

3 A. They have a number, TR-1, TR-2, TR-3. Those are
4 the trenches.

5 Q. Okay. What are the other shaded areas on the
6 map? What do those describe?

7 A. Those are the total disturbances that will take
8 place in a lot of areas. They can disturb up to permit
9 boundary. And so we're estimating in this first year
10 there will be quite a bit of disturbance. Probably a
11 topsoil condition. But ensure that they cover enough
12 topsoil in this particular area to take care of the lands
13 that are there at this time.

14 Q. Are there any areas that are indicated to not be
15 disturbed?

16 A. Yes, there are. The areas that don't have
17 coloration or a pattern on them will not be disturbed.

18 Q. Okay. Is there an area shaded in green or a
19 pattern of green?

20 A. Well, there are several.

21 Q. Okay. Is there -- there's a large patterned
22 area of green that's --

23 A. This.

24 Q. -- just on the right-hand side of the center of
25 the map.

1 A. This one here?

2 Q. Yes.

3 A. Okay.

4 Q. Can you describe what that indicates?

5 A. That is an area no mining activity will take
6 place. It is along the Padlock pastures, for example.
7 They -- I don't know if they winter in there, but they
8 utilize these as pastures for their livestock. And a
9 surface use agreement with Padlock has isolated that area,
10 saying there will be no mining in that area. And there
11 will be fencing to ensure that nothing crosses the
12 boundary between the mine and the pasturage. So that area
13 is going to have a special use.

14 It also is a walk-in area for hunting, and some
15 of that will still be utilized as walk-in area. Not the
16 entire section as it used to be in the past, but parts of
17 it will be suitable for walk-in hunting.

18 Q. Thank you.

19 Okay. Can you turn to page 12-134? This is
20 another map.

21 CHAIRMAN BAGLEY: Mr. Kuhlmann, will you be
22 at a good stopping point here soon?

23 MR. KUHLMANN: Yes, after we discuss this
24 page.

25 CHAIRMAN BAGLEY: Okay. Great.

1 THE WITNESS: Okay.

2 Q. (BY MR. KUHLMANN) Can you describe what this
3 document is?

4 A. Yes. This is what we call the coal removal
5 sequence that has to be planned five years in advance.
6 And so we have the sequences that the panels will take
7 place in. And we've got systems of mining that will be
8 taking place in here that are timed to a very specific
9 point in time. Month one, month two, month three, like
10 that, during year one, year two, year three, year four,
11 year five. The first five years has been engineered all
12 way down to what month you're going to be in that
13 particular part of the mine.

14 Q. Does the map indicate the location of the pits?

15 A. It does.

16 Q. Okay. How does it show those?

17 A. It locates the trenches diagonal to the actual
18 panels that we put in place for longwall miners. So
19 they're indicated as kind of long oblong shapes with a
20 TR-1, TR-2-type designation in script on that.

21 Q. You mentioned panels. Can you describe what
22 those are?

23 A. Longwall panels is the system that are being
24 developed as the longwall miners works its way down into
25 the coal and then it backs out, offsets. Those systems

1 are called panels, as they're being mined down into the
2 end of the miner's capacity. So this is the entire area
3 that will be mined, realizing 50 percent recovery will
4 take place.

5 Q. So in those areas -- I guess we'll call them
6 rainbow areas because of the colors.

7 A. Skittles.

8 Q. Is that --

9 A. I call it the Skittles map.

10 Q. Okay. Does the -- the boundaries where those
11 areas are, the rainbow areas are, what does that show?

12 A. That shows the -- the outside disturbance areas
13 that they will undermine, that they mine to. So it shows
14 the total outline of the area that will be subject to
15 highwall mining.

16 Q. So where the patterns end, that is where the
17 highwall mining will end?

18 A. Yes. There is no mining in those areas. Even
19 though they're within the permit boundary, they're areas
20 that will not be mined.

21 Q. Have the shapes of the panels changed over the
22 course of the permit review process?

23 A. They have changed a little bit from the very
24 first iteration we got to the last.

25 Q. Regarding a pit you described as TR-1 --

1 A. Okay.

2 Q. -- and that is the pit on the Big Horn Coal
3 property, correct?

4 A. Correct.

5 Q. Has the mine panels on that pit changed over the
6 course of the permit application?

7 A. They have. They've been shifted to the south
8 about 1700 feet.

9 Q. Okay. Do you recall when that change occurred?

10 A. I don't. I'd be guessing. I would say it was
11 in, I think, Round 1, but it could be Round 2. I don't
12 know exactly.

13 Q. So does that make the mine panel shorter than it
14 was?

15 A. It does.

16 Q. Okay.

17 A. In that area.

18 Q. Okay. All right. This is the most -- is this
19 the most recent version?

20 A. This is the most recent version. This is the
21 one that's inside the permit application now.

22 Q. So these would be the mine panels that council
23 and DEQ would be approving if they approve the permit?

24 A. Yes, they would. Yep. For the first five
25 years.

1 MR. KUHLMANN: Okay. That is my last
2 question on that map. I think this is a good breaking
3 point, Mr. Chairman.

4 CHAIRMAN BAGLEY: All right. Thank you
5 very much.

6 So we will recess now until 9 a.m. tomorrow
7 morning. Everybody have a good evening.

8 (Hearing proceedings recessed

9 6:19 p.m., May 22, 2017.)

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C E R T I F I C A T E

I, KATHY J. KENDRICK, a Registered Professional
Reporter, do hereby certify that I reported by machine
shorthand the foregoing proceedings contained herein,
constituting a full, true and correct transcript.

Dated this 5th day of June, 2017.


KATHY J. KENDRICK
Registered Professional Reporter



From: Shannon Anderson
To: [Jim Ruby](#); [Jay Gilbertz](#); [andrew kuhlmann](#); [Jeffrey S. Pope](#); [Lynne Boomgaarden](#); [Isaac Sutphin](#); [James LaRock](#); [cgregersen@crowleyfleck.com](#)
Subject: RE: Dates for Final days in Final Hearing for Brook Mine LLC
Date: Wednesday, May 31, 2017 12:01:48 PM

Thanks, Jim – and thanks to everyone for being flexible. See you next week. Shannon

Shannon Anderson
Powder River Basin Resource Council
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From: Jim Ruby [mailto:jim.ruby@wyo.gov]
Sent: Wednesday, May 31, 2017 9:19 AM
To: Jay Gilbertz; andrew kuhlmann; Jeffrey S. Pope (JSPope@hollandhart.com); Lynne Boomgaarden; Shannon Anderson; Isaac Sutphin; James LaRock
Subject: Dates for Final days in Final Hearing for Brook Mine LLC

Dear Counsel:

The final dates for the Brook Final Hearing will be June 7th and 8th 2017. The hearing will start at 9:00 a.m. on the 7th and will be held in Elk Room, Game and Fish Commission, 5400 Bishop Boulevard, Cheyenne WY.

Travel safe.

Jim Ruby

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From: Joe Girardin
To: pat@sheridanmedia.com; [Eric Brandjord](mailto:Eric.Brandjord); chelsea.coli@thesheridanpress.com; [Jill Morrison](mailto:Jill.Morrison); dbrown@eenews.net; [Madelyn Beck](mailto:Madelyn.Beck); [Randall Atkins](mailto:Randall.Atkins); [Isaac Sutphin](mailto:Isaac.Sutphin); [Jeffrey S. Pope](mailto:Jeffrey.S.Pope); [Anderson, Shannon](mailto:Anderson.Shannon); jgilbertz@yonkeetoner.com; cgregersen@crowleyfleck.com; [Lynne Boomgaarden](mailto:Lynne.Boomgaarden); [andrew kuhlmann](mailto:andrew.kuhlmann); [Alan Edwards](mailto:Alan.Edwards); [Jim Ruby](mailto:Jim.Ruby)
Subject: Continuation of the EQC Docket 17-4802 Brook Hearing YouTube Links
Date: Wednesday, May 31, 2017 10:16:33 AM

Brook hearing the dates are June 7th and 8th. The hearing will be held in the Elk Room of Game and Fish Commission, 5400 Bishop Boulevard. Below are the YouTube links.

June 7 Morning <https://www.youtube.com/watch?v=TPZ9qkf-gAY>

June 7 Afternoon <https://www.youtube.com/watch?v=NFQLYuYLjmY>

June 8 Morning <https://www.youtube.com/watch?v=ipTZpiS4jsQ>

June 8 Afternoon <https://www.youtube.com/watch?v=sVCEN44vYk0>

The main EQC Web YouTube link is https://www.youtube.com/channel/UCrddy_KWdtViC7GcUJ6r3Tjw

--

Joe Girardin, Paralegal

Environmental Quality Council

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From: Jim Ruby
To: [Jay Gilbertz](#); [andrew kuhlmann](#); [Jeffrey S. Pope \(JSPope@hollandhart.com\)](#); [Lynne Boomgaarden](#); [Shannon Anderson](#); [Isaac Sutphin](#); [James LaRock](#)
Subject: Dates for Final days in Final Hearing for Brook Mine LLC
Date: Wednesday, May 31, 2017 9:19:29 AM

Dear Counsel:

The final dates for the Brook Final Hearing will be June 7th and 8th 2017. The hearing will start at 9:00 a.m. on the 7th and will be held in Elk Room, Game and Fish Commission, 5400 Bishop Boulevard, Cheyenne WY.

Travel safe.

Jim Ruby

From: Andrew Kuhlmann
To: [Jim Ruby](#)
Cc: [Shannon Anderson](#); [Lynne Boomgaarden](#); [Clayton Gregersen](#); [Jay Gilbertz](#); [James LaRock](#); [Isaac Sutphin](#); [Thomas Sansonetti](#); [Jeffrey S. Pope](#)
Subject: Re: Hearing Part 2
Date: Tuesday, May 30, 2017 5:12:45 PM

Jim,

June 7-8 will also work for DEQ. However, not all of the DEQ staff who attended the hearing in Sheridan will be available to attend the hearing next week.

Thanks,
Andrew

--

Andrew J. Kuhlmann
Senior Assistant Attorney General
Water & Natural Resources Division
Wyoming Attorney General's Office
2320 Capitol Avenue
Cheyenne, WY 82002
307-777-3537 - Phone
307-777-3542 - Fax

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From: Thomas Sansonetti
To: [Shannon Anderson](#)
Cc: [Lynne Boomgaarden](#); cgregersen@crowleyfleck.com; jgilbertz@yonkeetoner.com; andrew.kuhlmann@wyo.gov; james.larock@wyo.gov; [Isaac Sutphin](#); [Jeffrey S. Pope](#); [Jim Ruby](#)
Subject: Re: Hearing Part 2
Date: Tuesday, May 30, 2017 1:56:45 PM

Shannon,

You missed the point of my question.

You have multiple names listed as "may call". Your email stated that you are "likely to have one 'may call' witness prior to Brook's rebuttal".

I merely was asking you to identify which one will likely be testifying. Tom

Sent from my iPhone

On May 30, 2017, at 1:44 PM, Shannon Anderson <sanderson@powderriverbasin.org> wrote:

Tom, our witness list has not changed since the May 17th filing. Thanks,
Shannon

Shannon Anderson
Powder River Basin Resource Council
934 N. Main St., Sheridan, WY 82801
307-672-5809 cell: 307-763-0995
sanderson@powderriverbasin.org
Join us at www.powderriverbasin.org
Follow us at <https://twitter.com/PRBResCouncil>

From: Thomas Sansonetti [mailto:TLSansonetti@hollandhart.com]
Sent: Tuesday, May 30, 2017 9:43 AM
To: Shannon Anderson; Lynne Boomgaarden; cgregersen@crowleyfleck.com; jgilbertz@yonkeetoner.com; andrew.kuhlmann@wyo.gov; james.larock@wyo.gov; Isaac Sutphin; Jeffrey S. Pope
Cc: Jim Ruby
Subject: RE: Hearing Part 2

Hi Shannon!

When will you be able to identify the "may call" witness, so that we can prepare? Tom

From: Shannon Anderson [mailto:sanderson@powderriverbasin.org]
Sent: Tuesday, May 30, 2017 8:13 AM
To: Lynne Boomgaarden; cgregersen@crowleyfleck.com; jgilbertz@yonkeetoner.com; andrew.kuhlmann@wyo.gov; james.larock@wyo.gov; Isaac Sutphin; Thomas Sansonetti; Jeffrey S. Pope
Cc: Jim Ruby
Subject: Hearing Part 2

Counsel:

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Thanks for your flexibility here.
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Cc: [Jim Ruby](#)
Subject: RE: Hearing Part 2
Date: Tuesday, May 30, 2017 1:44:12 PM

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From: Jeffrey S. Pope
To: [Jim Ruby](#); [Shannon Anderson](#)
Cc: [Lynne Boomgaarden](#); [Clayton Gregersen](#); [Jay Gilbertz](#); [andrew kuhlmann](#); [James LaRock](#); [Isaac Sutphin](#); [Thomas Sansonetti](#)
Subject: RE: Hearing Part 2
Date: Tuesday, May 30, 2017 10:18:01 AM

Mr. Ruby,

The 7-8 will work for Brook.

Thanks,

Jeff

From: Jim Ruby [mailto:jim.ruby@wyo.gov]
Sent: Tuesday, May 30, 2017 9:46 AM
To: Shannon Anderson <sanderson@powderriverbasin.org>
Cc: Lynne Boomgaarden <lboomgaarden@crowleyfleck.com>; Clayton Gregersen <cgregersen@crowleyfleck.com>; Jay Gilbertz <jgilbertz@yonkeetoner.com>; andrew kuhlmann <andrew.kuhlmann@wyo.gov>; James LaRock <james.larock@wyo.gov>; Isaac Sutphin <INSutphin@hollandhart.com>; Thomas Sansonetti <TLSansonetti@hollandhart.com>; Jeffrey S. Pope <JSPope@hollandhart.com>
Subject: Re: Hearing Part 2

Dear Counsel:

If there is no objection we can hold the hearing starting at 9:00 a.m. on the 7th of June, 2017 at the Game and Fish offices here in Cheyenne. Please let me know by the end of today if that is ok with each of you.

Jim

On Tue, May 30, 2017 at 9:35 AM, Shannon Anderson <sanderson@powderriverbasin.org> wrote:

Jim, Would June 7-8 be an option? Thanks, Shannon

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To: 'Lynne Boomgaarden'; cgregersen@crowleyfleck.com; jgilbertz@yonkeetoner.com; andrew.kuhlmann@wyo.gov; james.larock@wyo.gov; 'Isaac Sutphin'; tsansonetti@hollandhart.com; 'Jeffrey S. Pope'
Cc: 'Jim Ruby'
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From: Lynne Boomgaarden
To: [Jim Ruby](#); [Shannon Anderson](#)
Cc: [Clayton Gregersen](#); [Jay Gilbertz](#); [andrew kuhlmann](#); [James LaRock](#); [Isaac Sutphin](#); [Thomas Sansonetti](#); [Jeffrey S. Pope](#)
Subject: RE: Hearing Part 2
Date: Tuesday, May 30, 2017 10:14:45 AM

I believe June 7-8 will work for Big Horn, but have asked my client to confirm as soon as possible.

Regards,

Lynne

Lynne Boomgaarden



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From: Jim Ruby [mailto:jim.ruby@wyo.gov]

Sent: Tuesday, May 30, 2017 9:46 AM

To: Shannon Anderson <sanderson@powderriverbasin.org>

Cc: Lynne Boomgaarden <lboomgaarden@crowleyfleck.com>; Clayton Gregersen <cgregersen@crowleyfleck.com>; Jay Gilbertz <jgilbertz@yonkeetoner.com>; andrew kuhlmann

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From: Jim Ruby
To: [Shannon Anderson](#)
Cc: [Lynne Boomgaarden](#); [Clayton Gregersen](#); [Jay Gilbertz](#); [andrew kuhlmann](#); [James LaRock](#); [Isaac Sutphin](#); [Thomas Sansonetti](#); [Jeffrey S. Pope](#)
Subject: Re: Hearing Part 2
Date: Tuesday, May 30, 2017 9:46:27 AM

Dear Counsel:

If there is no objection we can hold the hearing starting at 9:00 a.m. on the 7th of June, 2017 at the Game and Fish offices here in Cheyenne. Please let me know by the end of today if that is ok with each of you.

Jim

On Tue, May 30, 2017 at 9:35 AM, Shannon Anderson <sanderson@powderriverbasin.org> wrote:

Jim, Would June 7-8 be an option? Thanks, Shannon

From: Shannon Anderson [mailto:sanderson@powderriverbasin.org]
Sent: Tuesday, May 30, 2017 8:13 AM
To: 'Lynne Boomgaarden'; cgregersen@crowleyfleck.com; jgilbertz@yonkeetoner.com; andrew.kuhlmann@wyo.gov; james.larock@wyo.gov; 'Isaac Sutphin'; tsansonetti@hollandhart.com; 'Jeffrey S. Pope'
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sanderson@powderriverbasin.org

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From: Thomas Sansonetti
To: [Shannon Anderson](#); [Lynne Boomgaarden](#); cgregersen@crowleyfleck.com; jgilbertz@yonkeetoner.com; andrew.kuhlmann@wyo.gov; james.larock@wyo.gov; [Isaac Sutphin](#); [Jeffrey S. Pope](#)
Cc: [Jim Ruby](#)
Subject: RE: Hearing Part 2
Date: Tuesday, May 30, 2017 9:42:54 AM

Hi Shannon!

When will you be able to identify the “may call” witness, so that we can prepare? Tom

From: Shannon Anderson [mailto:sanderson@powderriverbasin.org]
Sent: Tuesday, May 30, 2017 8:13 AM
To: Lynne Boomgaarden; cgregersen@crowleyfleck.com; jgilbertz@yonkeetoner.com; andrew.kuhlmann@wyo.gov; james.larock@wyo.gov; Isaac Sutphin; Thomas Sansonetti; Jeffrey S. Pope
Cc: Jim Ruby
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From: Jim Ruby
To: [Shannon Anderson](#)
Cc: [Lynne Boomgaarden](#); [Clayton Gregersen](#); [Jay Gilbertz](#); [andrew kuhlmann](#); [James LaRock](#); [Isaac Sutphin](#); [Thomas Sansonetti](#); [Jeffrey S. Pope](#)
Subject: Re: Hearing Part 2
Date: Tuesday, May 30, 2017 9:40:18 AM

The hearing officer is ok with the 7th and 8th. We cannot use room 1699 on the 7th so I am trying to find a different room. I will let you know as soon as possible. Does anyone have a problem with holding the hearing on the 7th and 8th.

Jim

On Tue, May 30, 2017 at 9:35 AM, Shannon Anderson <sanderson@powderriverbasin.org> wrote:

Jim, Would June 7-8 be an option? Thanks, Shannon

From: Shannon Anderson [mailto:sanderson@powderriverbasin.org]
Sent: Tuesday, May 30, 2017 8:13 AM
To: 'Lynne Boomgaarden'; cgregersen@crowleyfleck.com; jgilbertz@yonkeetoner.com; andrew.kuhlmann@wyo.gov; 'James LaRock'; james.larock@wyo.gov; 'Isaac Sutphin'; tsansonetti@hollandhart.com; 'Jeffrey S. Pope'
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To: [Shannon Anderson](#)
Cc: [Lynne Boomgaarden](#); [Clayton Gregersen](#); [Jay Gilbertz](#); [andrew kuhlmann](#); [James LaRock](#); [Isaac Sutphin](#); [Thomas Sansonetti](#); [Jeffrey S. Pope](#)
Subject: Re: Hearing Part 2
Date: Tuesday, May 30, 2017 9:38:22 AM

I did not see this email before I sent out the one setting the date as the 8th, 9th.

Jim

On Tue, May 30, 2017 at 9:35 AM, Shannon Anderson <sanderson@powderriverbasin.org> wrote:

Jim, Would June 7-8 be an option? Thanks, Shannon

From: Shannon Anderson [mailto:sanderson@powderriverbasin.org]
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From: Jim Ruby
To: [Lynne Boomgaarden](#); [Jeffrey S. Pope \(JPope@hollandhart.com\)](mailto:JPope@hollandhart.com); [Isaac Sutphin](#); [Jay Gilbertz](#); [Shannon Anderson](#); [andrew kuhlmann](#); [James LaRock](#)
Bcc: [Dave Bagley](#)
Subject: Final two days Brook Mine
Date: Tuesday, May 30, 2017 9:37:22 AM

Dear Counsel:

The final two days of the hearing will be held in room 1699 of the Herschler Building in Cheyenne on the 8th and 9th of June. It will begin at 9:00 a.m. on the 8th.

If you are unable to have any witnesses personally present but they can attend either by video or telephone please let me know so we can get that set up.

Any motions to change the hearing date should be filed no later than Friday June 3, 2017. A hearing on any motions to change the date will be heard on Monday June 5 at 10:00 a.m..

Sincerely,

Jim Ruby

From: Shannon Anderson
To: [Lynne Boomgaarden](#); cgregersen@crowleyfleck.com; jgilbertz@yonkeetoner.com; andrew.kuhlmann@wyo.gov; james.larock@wyo.gov; [Isaac Sutphin](#); tlsansonetti@hollandhart.com; [Jeffrey S. Pope](#)
Cc: [Jim Ruby](#)
Subject: RE: Hearing Part 2
Date: Tuesday, May 30, 2017 9:35:16 AM

Jim, Would June 7-8 be an option? Thanks, Shannon

From: Shannon Anderson [mailto:sanderson@powderriverbasin.org]
Sent: Tuesday, May 30, 2017 8:13 AM
To: 'Lynne Boomgaarden'; cgregersen@crowleyfleck.com; jgilbertz@yonkeetoner.com; andrew.kuhlmann@wyo.gov; james.larock@wyo.gov; 'Isaac Sutphin'; tlsansonetti@hollandhart.com; 'Jeffrey S. Pope'
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Cc: [Jim Ruby](mailto:Jim.Ruby)
Subject: Hearing Part 2
Date: Tuesday, May 30, 2017 8:12:51 AM

Counsel:

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From: Shannon Anderson
To: [Jim Ruby](#)
Cc: [Jill Morrison](#)
Subject: FW: New hearing dates
Date: Friday, May 26, 2017 11:55:59 AM

FYI on Dr. Marino's availability

Mr. Wireman is unavailable June 20-26 and July 12- Aug 2

Sorry – these are pre-existing commitments that cannot be adjusted for our witnesses.

From: Erin Williams [mailto:ewilliams@meacorporation.com]
Sent: Friday, May 26, 2017 11:36 AM
To: 'Shannon Anderson'
Subject: RE: New hearing dates

Hi Shannon,

Dr. Marino is presenting at a conference in Indianapolis on June 9th. He is generally unavailable on Fridays next month, but the beginning of the weeks look good. His schedule is below:

Unavailable:

May 30-31

June 8-9

June 15-16

June 19-23

June 26

June is a really busy month for us, sorry the low availability.

Please let me know if you need anything else!

Thanks,

Erin Williams

Administrative/Marketing Assistant

Marino Engineering Associates, Inc.

Corporate Office: 1370 McCausland Ave, St. Louis, MO 63117

Office: (314) 833-3189 | Fax: (314) 833-3448

Website: www.meacorporation.com



From: Shannon Anderson [<mailto:sanderson@powderriverbasin.org>]
Sent: Friday, May 26, 2017 12:23 PM
To: Erin Williams
Subject: New hearing dates

Hi Erin, in case Dr. Marino hasn't checked in with you yet, things took longer than anticipated and we'll need him to come back to WY for the rest of the hearing that has been continued. Could you check and see if he is available June 8-9, all day so travel a day before and then back late on the 9th if that works, if not the 10th (which is a Sat.) – it will be in Cheyenne so flying into Denver with a rental car should work. DIA to Cheyenne via a tollroad is about 1.5 hrs, so estimate about 2.5 from landing.

Thanks! Shannon

Shannon Anderson
Powder River Basin Resource Council
934 N. Main St., Sheridan, WY 82801
307-672-5809 cell: 307-763-0995
sanderson@powderriverbasin.org
Join us at www.powderriverbasin.org
Follow us at <https://twitter.com/PRBResCouncil>

From: Shannon Anderson
To: jgilbertz@yonkeetoner.com; lboomgaarden@crowleyfleck.com; [Jeffrey S. Pope](#); [Isaac Sutphin](#); cgregersen@crowleyfleck.com; tlsansonetti@hollandhart.com; andrew.kuhlmann@wyo.gov; james.larock@wyo.gov
Cc: [Jim Ruby](#); [Joe Girardin](#); [Carri Svec](#)
Subject: Late filed exhibits
Date: Tuesday, May 23, 2017 8:05:11 AM
Attachments: [Exhibit 91 - Brooke Collins House1.pdf](#)
[Exhibit 92 - Brooke Collins House2.pdf](#)

Counsel:

I have attached POW Exhibits 91 and 92, just filed on the EQC website. Brooke Collins has confirmed that she will be testifying this week, and these are photos of the home she lives in to go with that testimony.

Thank you,
Shannon

Shannon Anderson
Powder River Basin Resource Council
934 N. Main St., Sheridan, WY 82801
307-672-5809 cell: 307-763-0995
sanderson@powderriverbasin.org
Join us at www.powderriverbasin.org
Follow us at <https://twitter.com/PRBResCouncil>

Exhibit 91



Exhibit 92



From: Jim Ruby
To: [Shannon Anderson](#); [James LaRock](#); [Isaac Sutphin](#); [Lynne Boomgaarden](#); [Jay Gilbertz](#); [Jeffrey S. Pope \(JSPOpe@hollandhart.com\)](#); [andrew kuhlmann](#)
Subject: Fwd: EQC Docket Brook Hearing YouTube Links
Date: Monday, May 22, 2017 3:58:44 PM

----- Forwarded message -----

From: **Jim Ruby** <jim.ruby@wyo.gov>
Date: Mon, May 22, 2017 at 1:26 PM
Subject: Fwd: EQC Docket Brook Hearing YouTube Links
To: jsieving@osmre.gov

There is one for each session.

----- Forwarded message -----

From: **Jim Ruby** <jim.ruby@wyo.gov>
Date: Mon, May 22, 2017 at 11:57 AM
Subject: Fwd: EQC Docket Brook Hearing YouTube Links
To: Heather Richards [REDACTED]

----- Forwarded message -----

From: Joe Girardin <joe.girardin@wyo.gov>
Date: Fri, May 19, 2017 at 2:39 PM
Subject: Fwd: EQC Docket Brook Hearing YouTube Links
To: Tim Flitner [REDACTED] Jim Ruby <jim.ruby@wyo.gov>, Megan Degenfelder [REDACTED]

May 22 Monday Afternoon <https://www.youtube.com/watch?v=1OzxlpzQyiE>

May 23 Tuesday Morning <https://www.youtube.com/watch?v=XJgRqy7ZRow>

May 23 Tuesday Afternoon <https://www.youtube.com/watch?v=O5yDDgQhfuA>

May 24 Wednesday Morning <https://www.youtube.com/watch?v=gRRneQdjApc>

May 24 Wednesday Afternoon <https://www.youtube.com/watch?v=xBoM2SU76vo>

May 25 Thursday Morning <https://www.youtube.com/watch?v=uquafVIYVR4>

May 25 Thursday Afternoon <https://www.youtube.com/watch?v=-2xbVtvixjk>

May 26 Friday Morning <https://www.youtube.com/watch?v=WVPTEvNyut8>

May 26 Friday Afternoon <https://www.youtube.com/watch?v=QsPKyr1yMMM>

Joe Girardin, Paralegal

Environmental Quality Council

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E-Mail to and from me, in connection with the transaction of public business, is subject to the Wyoming Public Records Act and may be disclosed to third parties.

From: Jenny Wacker
To: ["andrew.kuhlmann@wyo.gov"](mailto:andrew.kuhlmann@wyo.gov); james.larock@wyo.gov; alan.edwards@wyo.gov; tlsansonetti@hollandhart.com; insutphin@hollandhart.com; jspope@hollandhart.com; jmkelly@hollandhart.com; csvec@hollandhart.com; bpcharlie@wbaccess.net; todd.parfitt@wyo.gov; sanderson@powderriverbasin.org; Jay.Gilbertz@wyo.gov; ["jim.ruby@wyo.gov"](mailto:jim.ruby@wyo.gov)
Cc: [Lynne Boomgaarden](#); [Clayton Gregersen](#); [Wendy Drake](#)
Subject: Big Horn Coal Company's Response to Brook's Objections and Proposal for Stipulation and Exhibit A
Date: Monday, May 22, 2017 9:43:12 AM
Attachments: [BHC Response to Brook Exhibit Objections.PDF](#)
[Exhibit A Response to Brook Objections \(2\).PDF](#)

Please find attached *Big Horn Coal Company's Response to Brook's Objections and Proposal for Stipulation and Exhibit A*. Both documents were filed with the EQC this morning.

Thank you,
Jenny



Jenny Wacker
Administrative Assistant to Lynne Boomgaarden and Keith Burron

OFFICES:
BILLINGS BISMARCK BOZEMAN BUTTE CASPER CHEYENNE HELENA KALISPELL MISSOULA SHERIDAN WILLISTON

Crowley Fleck PLLP
Direct Dial: 307-772-4843
237 Storey Boulevard, Suite 110
Cheyenne, WY 82009

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ATTORNEY FOR OBJECTORS
BIG HORN COAL COMPANY

IN RE BROOK MINE APPLICATION)
) **Docket Nos. 17-4802, 17-**
) **4803, and 17-4804**
TFN 6 2-025) **(Consolidated)**

Horn Exhibits 1, 3, 5, 6, 8, and 9. Brook objects to Big Horn's Exhibits 1, 3, 8 and 9 solely on the basis of hearsay. Brook objects to Exhibits 5 and 6 based on hearsay, but also alleges that Big Horn failed to produce Exhibit 5 in discovery and that Exhibit 6 lacks foundation and relevance.

The Council should summarily dismiss all of Brook's hearsay objections. The Wyoming Supreme Court has ruled on numerous occasions that hearsay evidence is admissible in administrative proceedings as long as the evidence meets the requirements of Wyo. Stat. Ann. § 16-3-108(a). *See e.g. Matter of Goddard*, 914 P.2d 1233, 1238 (Wyo. 1996); *Story v. Wyoming State Board of Medical Examiners*, 721 P.2d 1013, 1018 (Wyo.1986); *Lunde v. State ex rel. Wyo. Workers' Comp. Div.*, 6 P.3d 1256, 1260 (Wyo.2000). Wyo. Stat. Ann. § 16-3-108(a) requires that evidence offered and considered in a contested administrative proceeding not be "irrelevant, immaterial or unduly repetitious," and instead be "the type of evidence commonly relied upon by reasonably prudent men in the conduct of their serious affairs." Big Horn Exhibits 3, 4, 7, 8 and 9 are documents already part of the administrative record in this proceeding. Big Horn Exhibit 6 is comprised of documents of public record in Wyoming Department of Environmental Quality Land Quality Division files and are identified as such on the face of each page of the exhibit. These exhibits, as well as Big Horn Exhibit 1 (Big Horn witness Sweeney's CV) are, consistent with the Council's instructions to the parties and the intent of Wyo. Stat. Ann. § 16-3-108(a), offered in documentary form to expedite

the volume and duration of testimony required to be presented at hearing. For these reasons, Brook's hearsay objections lack merit. The appropriate evidentiary standard is whether the evidence is "probative, trustworthy and credible," which, if Brook won't stipulate to the exhibits, can be demonstrated by Big Horn and determined by the hearing examiner at the time the evidence is offered. *See Goddard*, 914 P.2d at 1238 (stating that the "[a]dmissibility of evidence is committed to the discretion of the hearing examiner").

Brook's allegation that Exhibit 5 was not produced in discovery is patently false. In delivering Exhibit 5 to the Council and to the parties, Big Horn expressly noted that the delivery of each exhibit, including Exhibit 5, constituted any necessary supplemental production to its discovery responses. *See Exhibit A*. Therefore the exhibit was appropriately produced in discovery.

Moreover, in its previous discovery responses, Big Horn noted the Council's specific deadline of May 17, 2017 for identifying exhibits and thus the ability to produce additional documents as exhibits at that time. This is exactly what Big Horn did in its delivery of Exhibit 5. Rule 26 of the Wyoming Rules of Civil Procedure makes clear that all discovery obligations of the rules may be superseded by court orders, and thus it is the Council's requirement from the Order of Consolidation and Schedule that dictates when exhibits must be provided to other parties.¹ Big Horn's

¹ Wyo. Stat. Ann. § 16-3-107(g) states that "In all contested cases the taking of depositions and discovery shall be available to the parties in accordance with the provisions of Rules 26, 28

prior discovery responses repeatedly referenced the Council's order and May 17, 2017 deadline for delivery of exhibits as the controlling deadline. Exhibit 5 is an important aspect of Big Horn's case, was continually being developed, was not completed until May 17, 2017, and could not have been provided earlier; therefore, Big Horn did not belatedly produce Exhibit 5.

As to Brook's additional objection to Big Horn Exhibit 6, foundation and relevancy are determinations that must be made at the time the exhibit is introduced and offered into evidence. The hearing officer has discretion to determine whether or not evidence is admissible at a contested case hearing. *Clark v. State ex rel. Wyoming Workers' Safety and Compensation Div.*, 968 P.2d 436 (Wyo. 1998). Big Horn Exhibit 6 cannot be excluded based on Brook's objection alone.

In sum, Brook's objections premised upon various rules of evidence are red herrings that disregard the nature of this case and this Council's discretion. Administrative hearings are governed by the Wyoming Administrative Procedure Act, not the rules of evidence. "Administrative agencies acting in a judicial or quasi judicial capacity are not bound by the rules of evidence that govern trials by courts or juries." *Griffin v. State ex rel. Dept. of Transp.*, 2002 WY 82, ¶ 11 (Wyo. 2002).

through 37 (excepting Rule 37(b)(1) and 37(b)(2)(D) therefrom) of the Wyoming Rules of Civil Procedure in effect on the date of the enactment of this act and any subsequent rule amendments thereto. All references therein to the "court" shall be deemed to refer to the appropriate 'agency'["]

Rather it is Wyo. Stat. Ann. § 16-8-108(a) and the discretion of the hearing officer which set the standard for the admission of evidence.

II. Stipulations and Judicial Notice

In order to expedite the presentation of evidence at the hearing, Big Horn would also like to put on the record its stipulation to various exhibits and request that the Council take judicial (official) notice of certain exhibits.

Big Horn will stipulate to the admissibility of any document kept in the records of DEQ and publicly available, including DEQ Exhibits 1-13, 22-27, 29, and 31-35. Big Horn will stipulate to additional DEQ Exhibits and Brook Exhibits to the extent that DEQ and/or Brook affirmatively represents that any such additional exhibit is kept in the records of DEQ and publicly available. Big Horn also has no objection and will stipulate to the admissibility of all exhibits proposed by PRBRC and the Fishers.

As with its Prehearing Memorandum, and to avoid consuming time at hearing establishing unnecessary foundation and offering as exhibits, Big Horn requests, pursuant to Wyo. Stat. Ann. § 16-23-108(d), that the Council take judicial (official) notice of all **current versions** of applicable statutes, rules and regulations, and official, governmental guidance documents. This would include DEQ Exhibits 22-24 and Exhibits A and B to Big Horn's Prehearing Memorandum. In this vein, Big Horn objects that Brook has proposed as Exhibits copies of inapplicable, outdated versions of Wyoming law. Specifically, Big Horn objects to Brook's

Exhibits 3-5 and requests that the Council prohibit admission of those exhibits into evidence and instead take judicial notice of current law.

DATED: May 22, 2017.

By 

Lynnette Boomgaarden (WSB # 5-2837)

Clayton H. Gregersen (WSB # 7-5677)

Crowley Fleck PLLP

237 Storey Boulevard, Suite 110

Cheyenne, WY 82009

(307) 426-4100

Attorney for Objectors

Big Horn Coal Company

CERTIFICATE OF SERVICE

I hereby certify that on May 22, 2017, a true and correct copy of the foregoing was served by email to the following:

Andrew Kuhlmann
James LaRock
Wyoming Attorney General's Office
Andrew.kuhlmann@wyo.gov
James.larock@wyo.gov
Attorneys for DEQ

Alan Edwards
Deputy Director, DEQ
Alan.edwards@wyo.gov

Thomas L. Sansonetti
Isaac N. Sutphin
Jeffrey Pope
TLSansonetti@hollandhart.com
INSutphin@hollandhart.com
JSPope@hollandhart.com
jmkelley@hollandhart.com
csvec@hollandhart.com
Attorneys for Brook Mining Co., LLC

Brook Collins
38 Monarch Rd.
Ranchester, WY 82839
bpcharlie@wbaccess.net

Todd Parfitt
Director, DEQ
Todd.Parfitt@wyo.gov

Shannon Anderson
Powder River Basin Resource Council
sanderson@powderriverbasin.org

Jay Gilbertz
jGilbertz@yonkeetoner.com
*Attorney for Mary Brezik-Fisher and
David Fisher*

Jim Ruby
Environmental Quality Council
Jim.ruby@wyo.gov



Clayton

Exhibit A

From: Clayton Gregersen
To: Andrew Kuhlmann; james.larock@wyo.gov; Alan Edwards; Thomas Sansonetti; Isaac Sutphin; Jeffrey S. Pope; bpcharlie@wbaccess.net; todd.parfitt@wyo.gov; "Shannon Anderson"; "Jay Gilbertz"; Jim Ruby
Cc: Lynne Boomgaarden; Jenny Wacker; Wendy Drake; "Carri Svec"; Jan Kelley
Subject: EQC Dkt 17-4802 Big Horn's Hearing Exhibits (email 2 of 2)
Date: Wednesday, May 17, 2017 11:15:54 AM
Attachments: [BHC 5.pdf](#)
[BHC 19.pdf](#)
[BHC 18.pdf](#)
[BHC 17.pdf](#)
[BHC 16.pdf](#)
[BHC 15.pdf](#)
[BHC 14.pdf](#)
[BHC 13.pdf](#)
[BHC 12.pdf](#)
[BHC 11.pdf](#)
[BHC 10.pdf](#)
[BHC 9.pdf](#)
[BHC 8.pdf](#)
[BHC 7.pdf](#)
[BHC 6.pdf](#)
[BHC 4.pdf](#)
[BHC 3.pdf](#)
[BHC 2.pdf](#)
[BHC 1.pdf](#)

All,

Please find attached Big Horn's exhibits, BHC 1 through BHC 19, from its Exhibit List disclosed in my prior email and filed with the EQC today. This production will also constitute any necessary supplemental production of Big Horn's discovery responses as to documents and information that Big Horn believes support its objections in this matter as well as documents that Big Horn may use to support its position. Again, please let me know if you have any questions or concerns.

Clayton Gregersen
Crowley Fleck PLLP
490 N 31st Street, Suite 500 TW2
Billings, MT 59101
406-255-7335
cgregersen@crowleyfleck.com

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From: Shannon Anderson
To: [Jay Gilbertz](#); [Jeffrey S. Pope](#); [Isaac Sutphin](#); lboomgaarden@crowleyfleck.com; cgregersen@crowleyfleck.com; todd.parfitt@wyo.gov; andrew.kuhlmann@wyo.gov; james.larock@wyo.gov; alan.edwards@wyo.gov; [Jim Ruby](#)
Cc: [Thomas Sansonetti](#); [Carri Svec](#)
Subject: RE: Brook Mine Application - Brook's Objections to Admissibility of Objectors' Witness and Exhibits
Date: Monday, May 22, 2017 8:52:24 AM
Attachments: [2017 5-22 exhibits and witnesses.pdf](#)

Jeff,

We second those stipulations and objections.

Additionally, there are some dual exhibits between the parties that we should clear up. One I am particularly thinking about is the OSMRE course materials on subsidence. We have included the complete version of the course materials in our exhibits and request that we use that version. There are some other overlaps that I am happy to stipulate to use the other parties' exhibit number and remove them from our list. In terms of the emails from our exhibit list that are also part of Brook's Exhibit 6, for the reasons that they we object to Exhibit 6 and its voluminous production that is not carefully tailored to the proceeding, nor will it be easy to use by the parties at the hearing, we request that our version of those emails remain on our exhibit list even if Exhibit 6 is ultimately admitted.

Also, please see the attached just filed with the EQC.

Thanks,
Shannon

Shannon Anderson
Powder River Basin Resource Council
934 N. Main St., Sheridan, WY 82801
307-672-5809 cell: 307-763-0995
sanderson@powderriverbasin.org
Join us at www.powderriverbasin.org
Follow us at <https://twitter.com/PRBResCouncil>

From: Jay Gilbertz [mailto:JGilbertz@yonkeetoner.com]
Sent: Monday, May 22, 2017 8:17 AM
To: Jeffrey S. Pope; Shannon Anderson; Isaac Sutphin; lboomgaarden@crowleyfleck.com; cgregersen@crowleyfleck.com; todd.parfitt@wyo.gov; andrew.kuhlmann@wyo.gov; james.larock@wyo.gov; alan.edwards@wyo.gov; Jim Ruby
Cc: Thomas Sansonetti; Carri Svec
Subject: RE: Brook Mine Application - Brook's Objections to Admissibility of Objectors' Witness and Exhibits

Jeff: The Fishers are willing to stipulate to the admissibility of those documents Brook and DEQ has identified which constitute aspects of the *formal* and official DEQ public file on the mine application (for example the mine plan and its appendixes).

I cannot advance stipulate to the entirety of things like Exhibit 6 which appears to constitute 8,000 plus pages of emails. It is hard to believe each and every email has some relevance and importance to the issues in the proceeding. If there are specific emails that you or others plan

to use, I guess we would need to take them as they come. I am also a bit perplexed at the desire to offer as exhibits copies of the law, rules and regulations. I understand this is an administrative proceeding, but it seems the law is the law and evidence is evidence. Law is not evidence.

This is not to suggest the law cannot be talked about or even shown and talked about during the hearing.

Jay A. Gilbertz

Yonkee & Toner, LLP
P.O. Box 6288
Sheridan, WY 82801
(307) 674-7451 (Phone)

From: Jeffrey S. Pope [<mailto:JSPope@hollandhart.com>]

Sent: Saturday, May 20, 2017 11:54 AM

To: Shannon Anderson <sanderson@powderriverbasin.org>; Isaac Sutphin <INSutphin@hollandhart.com>; lboomgaarden@crowleyfleck.com; cgregersen@crowleyfleck.com; todd.parfitt@wyo.gov; andrew.kuhlmann@wyo.gov; james.larock@wyo.gov; Jay Gilbertz <JGilbertz@yonkeetoner.com>; alan.edwards@wyo.gov; Jim Ruby <jim.ruby@wyo.gov>

Cc: Thomas Sansonetti <TLSansonetti@hollandhart.com>; Carri Svec <CSvec@hollandhart.com>

Subject: RE: Brook Mine Application - Brook's Objections to Admissibility of Objectors' Witness and Exhibits

Shannon,

We will stipulate to the admissibility of the exhibits to which we did not object. Assuming no one else has objections to exhibits, we can prepare a list of the stipulated exhibits.

Jeff

From: Shannon Anderson [<mailto:sanderson@powderriverbasin.org>]

Sent: Friday, May 19, 2017 7:16 PM

To: Isaac Sutphin <INSutphin@hollandhart.com>; lboomgaarden@crowleyfleck.com; cgregersen@crowleyfleck.com; todd.parfitt@wyo.gov; andrew.kuhlmann@wyo.gov; james.larock@wyo.gov; jgilbertz@yonkeetoner.com; alan.edwards@wyo.gov; Jim Ruby <jim.ruby@wyo.gov>

Cc: Thomas Sansonetti <TLSansonetti@hollandhart.com>; Jeffrey S. Pope <JSPope@hollandhart.com>; Carri Svec <CSvec@hollandhart.com>

Subject: RE: Brook Mine Application - Brook's Objections to Admissibility of Objectors' Witness and Exhibits

Well then. I guess that answers Jim's request as to whether the parties will be able to stipulate to a set of exhibits.

See you all Monday.
Shannon

Shannon Anderson
Powder River Basin Resource Council
934 N. Main St., Sheridan, WY 82801
307-672-5809 cell: 307-763-0995
sanderson@powderriverbasin.org
Join us at www.powderriverbasin.org
Follow us at <https://twitter.com/PRBResCouncil>

From: Jan Kelley [mailto:JMKelley@hollandhart.com] **On Behalf Of** Isaac Sutphin
Sent: Friday, May 19, 2017 4:59 PM
To: lboomgaarden@crowleyfleck.com; cgregersen@crowleyfleck.com; todd.parfitt@wyo.gov;
sanderson@powderriverbasin.org; andrew.kuhlmann@wyo.gov; james.larock@wyo.gov;
jgilbertz@yonkeetoner.com; alan.edwards@wyo.gov; Jim Ruby
Cc: Thomas Sansonetti; Isaac Sutphin; Jeffrey S. Pope; Carri Svec
Subject: Brook Mine Application - Brook's Objections to Admissibility of Objectors' Witness and Exhibits

Attached please find Brook Mining Company, LLC's Objections to Admissibility of Objectors' Witness and Exhibits (with Exhibits 1-5)

Jan Kelley

*Assistant to Isaac Sutphin, JoAnna DeWald,
and Sami Falzone*

Holland & Hart LLP
2515 Warren Avenue, Suite 450
Cheyenne, WY 82001
Phone (307) 778-4233
Fax (307) 778-8175
E-mail: jmkelley@hollandhart.com

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Shannon Anderson (Wyo. Bar # 6-4402)
Powder River Basin Resource Council
934 N. Main St., Sheridan, WY 82801
(307) 672-5809
sanderson@powderriverbasin.org

**BEFORE THE ENVIRONMENTAL QUALITY COUNCIL
STATE OF WYOMING**

IN RE BROOK MINE APPLICATION)
)
 TFN 6 2-025) **DOCKET 17-4802**

**POWDER RIVER BASIN RESOURCE COUNCIL’S RESPONSE TO BROOK MINING
COMPANY, LLC’S OBJECTIONS TO ADMISSIBILITY OF WITNESSES AND
EXHIBITS**

Late on the day on Friday, May 19, 2017 Brook Mining Company, LLC (“Brook” or “Applicant” or “Company”) filed a series of far-reaching objections to the witnesses and exhibits of Powder River Basin Resource Council (“Resource Council”) and other parties.

The Company wishes to exclude the vast majority of the Resource Council's and other parties' exhibits and seeks to exclude four fact witnesses named by the Resource Council. The fact witnesses are members of the Resource Council and they are represented by the Resource Council for purposes of these proceedings.

Based on instructions from Dr. Bagley, through Mr. Ruby, the Resource Council was prepared to meet with the parties in advance of the hearing to discuss stipulations and objections to witnesses and exhibits. However, the Company circumvented this discussion and filed its objections before the parties had the opportunity to meet.

Given the late hour, and the far-reaching scope of the Company's objections, the Resource Council requests the opportunity to provide its responses through oral argument at the

hearing today. Our responses will show that the Environmental Quality Council should summarily dismiss the objections and let the parties proceed to the hearing.

The Resource Council also requests the right to object to certain exhibits of the Company and the Department of Environmental Quality, as needed. Again, the Resource Council was prepared to discuss these objections with the parties in advance of the hearing, but such discussion was circumvented by the Company.

Dated this 22nd day of May, 2017.

/s/ Shannon Anderson
Shannon Anderson
Powder River Basin Resource Council
934 N. Main St., Sheridan, WY 82801
(307) 672-5809
sanderson@powderriverbasin.org

CERTIFICATE OF SERVICE

I hereby certify that on May 22, 2017, I served a copy of the foregoing **RESPONSE TO BROOK MINING COMPANY, LLC'S OBJECTIONS TO ADMISSIBILITY OF WITNESSES AND EXHIBITS** on the following parties by electronic mail, and through the EQC's electronic filing system, which will send a notice of electronic filing to all counsel and parties of record.

Andrew Kuhlmann
James LaRock
Wyoming Attorney General's Office
andrew.kuhlmann@wyo.gov
james.larock@wyo.gov
Attorneys for DEQ

Todd Parfitt
Director, DEQ
todd.parfitt@wyo.gov

Jeff Pope
Isaac Sutphin
Thomas Sansonetti
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JSPope@hollandhart.com
INSutphin@hollandhart.com
TLSansonetti@hollandhart.com
Attorneys for Brook Mining Co., LLC

Lynne Boomgaarden,
Clayton Gregersen
Crowley Fleck PLLP
lboomgaarden@crowleyfleck.com
cgregersen@crowleyfleck.com
Attorneys for Big Horn Coal Co.

Jay Gilbertz
Yonkee & Toner, LLP
jgilbertz@yonkeetoner.com
Attorney for Mary Brezik-Fisher & David Fisher

/s/Shannon Anderson
Shannon Anderson

From: Jay Gilbertz
To: [Jeffrey S. Pope](mailto:Jeffrey.S.Pope); [Shannon Anderson](mailto:Shannon.Anderson); [Isaac Sutphin](mailto:Isaac.Sutphin); lboomgaarden@crowleyfleck.com; cgregersen@crowleyfleck.com; todd.parfitt@wyo.gov; andrew.kuhlmann@wyo.gov; james.larock@wyo.gov; alan.edwards@wyo.gov; [Jim Ruby](mailto:Jim.Ruby)
Cc: [Thomas Sansonetti](mailto:Thomas.Sansonetti); [Carri Svec](mailto:Carri.Svec)
Subject: RE: Brook Mine Application - Brook's Objections to Admissibility of Objectors' Witness and Exhibits
Date: Monday, May 22, 2017 8:16:54 AM

Jeff: The Fishers are willing to stipulate to the admissibility of those documents Brook and DEQ has identified which constitute aspects of the *formal* and official DEQ public file on the mine application (for example the mine plan and its appendixes).

I cannot advance stipulate to the entirety of things like Exhibit 6 which appears to constitute 8,000 plus pages of emails. It is hard to believe each and every email has some relevance and importance to the issues in the proceeding. If there are specific emails that you or others plan to use, I guess we would need to take them as they come. I am also a bit perplexed at the desire to offer as exhibits copies of the law, rules and regulations. I understand this is an administrative proceeding, but it seems the law is the law and evidence is evidence. Law is not evidence.

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Yonkee & Toner, LLP
P.O. Box 6288
Sheridan, WY 82801
(307) 674-7451 (Phone)

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Sent: Saturday, May 20, 2017 11:54 AM
To: Shannon Anderson <sanderson@powderriverbasin.org>; Isaac Sutphin <INSutphin@hollandhart.com>; lboomgaarden@crowleyfleck.com; cgregersen@crowleyfleck.com; todd.parfitt@wyo.gov; andrew.kuhlmann@wyo.gov; james.larock@wyo.gov; Jay Gilbertz <JGilbertz@yonkeetoner.com>; alan.edwards@wyo.gov; Jim Ruby <jim.ruby@wyo.gov>
Cc: Thomas Sansonetti <TLSansonetti@hollandhart.com>; Carri Svec <CSvec@hollandhart.com>
Subject: RE: Brook Mine Application - Brook's Objections to Admissibility of Objectors' Witness and Exhibits

Shannon,

We will stipulate to the admissibility of the exhibits to which we did not object. Assuming no one else has objections to exhibits, we can prepare a list of the stipulated exhibits.

Jeff

From: Shannon Anderson [<mailto:sanderson@powderriverbasin.org>]
Sent: Friday, May 19, 2017 7:16 PM

To: Isaac Sutphin <INSutphin@hollandhart.com>; lboomgaarden@crowleyfleck.com; cgregersen@crowleyfleck.com; todd.parfitt@wyo.gov; andrew.kuhlmann@wyo.gov; james.larock@wyo.gov; jgilbertz@yonkeetoner.com; alan.edwards@wyo.gov; Jim Ruby <jim.ruby@wyo.gov>

Cc: Thomas Sansonetti <TLSansonetti@hollandhart.com>; Jeffrey S. Pope <JSPope@hollandhart.com>; Carri Svec <CSvec@hollandhart.com>

Subject: RE: Brook Mine Application - Brook's Objections to Admissibility of Objectors' Witness and Exhibits

Well then. I guess that answers Jim's request as to whether the parties will be able to stipulate to a set of exhibits.

See you all Monday.
Shannon

Shannon Anderson
Powder River Basin Resource Council
934 N. Main St., Sheridan, WY 82801
307-672-5809 cell: 307-763-0995
sanderson@powderriverbasin.org
Join us at www.powderriverbasin.org
Follow us at <https://twitter.com/PRBResCouncil>

From: Jan Kelley [mailto:JMKelley@hollandhart.com] **On Behalf Of** Isaac Sutphin
Sent: Friday, May 19, 2017 4:59 PM
To: lboomgaarden@crowleyfleck.com; cgregersen@crowleyfleck.com; todd.parfitt@wyo.gov; sanderson@powderriverbasin.org; andrew.kuhlmann@wyo.gov; james.larock@wyo.gov; jgilbertz@yonkeetoner.com; alan.edwards@wyo.gov; Jim Ruby
Cc: Thomas Sansonetti; Isaac Sutphin; Jeffrey S. Pope; Carri Svec
Subject: Brook Mine Application - Brook's Objections to Admissibility of Objectors' Witness and Exhibits

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*Assistant to Isaac Sutphin, JoAnna DeWald,
and Sami Falzone*

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Cc: [Thomas Sansonetti](#); [Carri Svec](#)
Subject: RE: Brook Mine Application - Brook's Objections to Admissibility of Objectors' Witness and Exhibits
Date: Saturday, May 20, 2017 11:54:09 AM

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Cc: [Thomas Sansonetti](#); [Jeffrey S. Pope](#); [Carri Svec](#)
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Cc: [Thomas Sansonetti](#); [Isaac Sutphin](#); [Jeffrey S. Pope](#); [Carri Svec](#)
Subject: Brook Mine Application - Brook's Objections to Admissibility of Objectors' Witness and Exhibits
Date: Friday, May 19, 2017 4:59:19 PM
Attachments: [2017-05-19 Brook's Objections to Admissibility of Objectors' Witness and....pdf](#)
[Exhibit 1.pdf](#)
[Exhibit 2.pdf](#)
[Exhibit 3.pdf](#)
[Exhibit 4.pdf](#)
[Exhibit 5.pdf](#)

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ATTORNEYS FOR PERMIT APPLICANT
BROOK MINING COMPANY, LLC

**BEFORE THE ENVIRONMENTAL QUALITY COUNCIL
STATE OF WYOMING**

IN RE BROOK MINE APPLICATION)	
	)	Civil Action No. 17-4802
TFN 6 2-025)	

**BROOK MINING COMPANY, LLC' OBJECTIONS TO ADMISSIBILITY OF OBJECTORS' WITNESS
AND EXHIBITS**

Pursuant to the Council's May 17, 2017 request, Brook Mining Company, LLC (Brook) hereby files its objections to the admissibility of witnesses and exhibits listed by Powder River Basin Resource Council (PRBRC), Big Horn Coal Company and the Fishers.

I. PRBRC Witnesses

Brook objects to PRBRC witnesses Anton Bocek, John Buyok, Gillian Malone, and Brooke Collins testifying. Each of them filed an individual objection letter but did not request a contested case hearing. As a result, they are not parties to this action and should not get to present testimony about their objections. Likewise, none of them took part in preparing the PRBRC's objections. Discovery in this case showed that PRBRC's attorney, Shannon Anderson, and Executive Director, Jill Morrison, prepared the objections and have personal knowledge about those objections. (See Answer to Interrogatory, attached as Ex. 1; excerpt from Ms. Morrison's deposition transcript, attached as Ex. 2; excerpt from Ms. Malone's deposition

transcript, attached as Ex. 3; excerpt from Mr. Bocek's deposition transcript, attached as Ex. 4; and excerpt from Mr. Buyok's deposition transcript, attached as Ex. 5.)

II. Exhibits

Exhibit No.¹	Description	Brooks' Specific Objection by Wyoming Rule of Evidence
1.	Objections to the coal mining permit application filed by the Resource Council	Exhibit is hearsay (WRE 802)
2.	Objections to the coal mining permit application filed by Anton Bocek	Exhibit lacks relevance because Mr. Bocek did not request a contested case hearing and this letter does not contribute facts or law in support of PRBRC's objections (WRE 401-403); Exhibit is hearsay (WRE 802)
3.	Objections to the coal mining permit application filed by Jane Buyok	Exhibit lacks relevance because Ms. Buyock did not request a contested case hearing and this letter does not contribute facts or law in support of PRBRC's objections (WRE 401-03); Exhibit is hearsay (WRE 802); Exhibit lacks foundation because no listed PRBRC witness has personal knowledge to testify about this exhibit (WRE 602)
4.	Objections to the coal mining permit application filed by Joan Tellez	Exhibit lacks relevance because Ms. Tellez did not request a contested case hearing and this letter does not contribute facts or law in support of PRBRC's objections (WRE 401-03); Exhibit is hearsay (WRE 802); Exhibit lacks foundation because no listed PRBRC witness has personal knowledge to testify about this exhibit (WRE 602)

¹ Exhibit Nos. 1-90 are PRBRC's exhibits.

Exhibit No.¹	Description	Brooks' Specific Objection by Wyoming Rule of Evidence
5.	Objections to the coal mining permit application filed by John & Vanessa Buyok	Exhibit lacks relevance because neither Mr. nor Mrs. Buyock requested a contested case hearing and this letter does not contribute facts or law in support of PRBRC's objections (WRE 401-03); Exhibit is hearsay (WRE 802).
6.	Objections to the coal mining permit application filed by Bill Bense	Exhibit lacks relevance because Mr. Bense did not request a contested case hearing (WRE 401-03); Exhibit is hearsay (WRE 802); Exhibit lacks foundation because no listed PRBRC witness has personal knowledge to testify about this exhibit (WRE 602)
7.	Objections to the coal mining permit application filed by Wendy Condrat	Exhibit lacks relevance because Ms. Condrat did not request a contested case hearing and this letter does not contribute facts or law in support of PRBRC's objections (WRE 401-03); Exhibit is hearsay (WRE 802); Exhibit lacks foundation because no listed PRBRC witness has personal knowledge to testify about this exhibit (WRE 602)
8.	Objections to the coal mining permit application filed by Sadie Clarendon	Exhibit lacks relevance because Ms. Clarendon did not request a contested case hearing and this letter does not contribute facts or law in support of PRBRC's objections (WRE 401-03); Exhibit is hearsay (WRE 802); Exhibit lacks foundation because no listed PRBRC witness has personal knowledge to testify about this exhibit (WRE 602)

Exhibit No.¹	Description	Brooks' Specific Objection by Wyoming Rule of Evidence
9.	Objections to the coal mining permit application filed by Gillian Malone	Exhibit lacks relevance because Ms. Malone did not request a contested case hearing and this letter does not contribute facts or law in support of PRBRC's objections (WRE 401-03); Exhibit is hearsay (WRE 802).
10.	Objections to the coal mining permit application filed by Brooke Collins	Exhibit lacks relevance because Ms. Collins did not request a contested case hearing and this letter does not contribute facts or law in support of PRBRC's objections (WRE 401-03); Exhibit is hearsay (WRE 802).
11.	Power Point presentation prepared by Dr. Marino to use as a demonstrative exhibit at the hearing. This exhibit was finalized May 16, 2017 and may be slightly adjusted prior to the hearing	No OBJECTION
12. -14.	Dr. Marino's expert report separated into three files given size. This report was attached to the Resource Council's objections to the coal mining permit application filed with DEQ on January 27, 2017 and was also provided as a part of the expert disclosures filed in the docket to these proceedings	Exhibit is hearsay (WRE 802)
15.	A copy of the Academy of Geo-Professionals website providing information on board certified experts. The website copied is http://www.geoprofessionals.org/board-certifiedexperts/diplomate-categories	Exhibit lacks relevance (WRE 401-403); Exhibit is hearsay (WRE 802)
16.	A copy of the website listing board certified experts certified by the Academy of Geo-Professionals, including Dr. Marino. The website copied is http://www.geoprofessionals.org/board-certified-experts/diplomate-directory	Exhibit is hearsay (WRE 802)
17.	Mr. Wireman's expert report provided as a part of the expert disclosures filed in the docket to these proceedings	Exhibit is hearsay (WRE 802)

Exhibit No.¹	Description	Brooks' Specific Objection by Wyoming Rule of Evidence
18.	CVs of experts Mr. Wireman and Dr. Marino	Exhibit is hearsay (WRE 802)
19.	Biography of Sue Ann Spencer from her company's website	Exhibit is hearsay (WRE 802)
20.	Attachments included with the Resource Council's objections to the coal mining permit application filed with DEQ on January 27, 2017	Exhibit is hearsay (WRE 802)
21.	Brook's answers to the Fishers to discovery questions	Exhibit lacks relevance (WRE 401-403)
22.	Brook's answers to the Resource Council to discovery questions	Exhibit lacks relevance (WRE 401-403)
23.	DEQ's answers to the Fishers to discovery questions	Exhibit lacks relevance (WRE 401-403)
24.	DEQ's answers to the Resource Council to discovery questions	Exhibit lacks relevance (WRE 401-403)
25.	Brook Mine Overview from Ramaco, downloaded from their website, dated May 2014	Exhibit lacks relevance (WRE 401-403); Exhibit is hearsay (WRE 802)
26.	February 27, 2017 Sheridan Press article entitled "Ramaco Carbon plans research, manufacturing facility for coal products"	Exhibit lacks relevance (WRE 401-403); Exhibit is hearsay (WRE 802)
27.	April 4, 2017 NPR radio story from the program <i>Here and Now</i> entitled "Coal CEO Looks For New Ways To Revive the Industry"	Exhibit lacks relevance (WRE 401-403); Exhibit is hearsay (WRE 802)
28.	October 16, 2015 electronic mail correspondence between Thomas Sansonetti and Jeffrey Pope (Brook attorneys) and Andrew Kuhlmann (DEQ attorney) regarding the proposed "Sheridan Industrial Park" associated with the proposed coal mine permit	Exhibit lacks relevance (WRE 401-403); Exhibit is hearsay (WRE 802)
29.	Air Quality Permit No. P0019732 issued to Wyoming Ramaco Coal Company, LLC on January 25, 2016	No Objection
30.	June 04, 2015 electronic mail correspondence between BJ Kristiansen and Deanna Hill	No Objection

Exhibit No.¹	Description	Brooks' Specific Objection by Wyoming Rule of Evidence
31.	January 31, 2017 electronic mail correspondence between Mark Rogaczewski and Jim Ruby discussing "proposed mining operations within 100 feet of a public road"	Exhibit lacks relevance (WRE 401-403); Exhibit contains hearsay (WRE 802)
32.	May 19, 2014 electronic mail correspondence between Justin Douthat and Jeff Barron regarding "surface mining beneath the county road"	Exhibit lacks relevance (WRE 401-403)
33.	May 15, 2014 electronic mail correspondence between Jeff Barron and Justin Douthat regarding an "affected county road"	Exhibit lacks relevance (WRE 401-403)
34.	July 25, 2014 Google Earth picture identifying a county road to relocate	No Objection
35.	February 24, 2016 DEQ alluvial valley floor determinations for the Brook Mine	No Objection
36.	February 08, 2016 electronic mail correspondence between BJ Kristiansen and Jeff Barron regarding alluvial valley floor determinations	No Objection
37.	December 14, 2016 electronic mail correspondence between BJ Kristiansen and Shannon Anderson regarding alluvial valley floor determinations	Exhibit lacks relevance (WRE 401-403); Exhibit contains hearsay (WRE 802)
38. -40.	April 3, 2009 Contract Documents and Specifications for AML Project 17J, Carney Mine Subsidence Mitigation, submitted by PHC Reclamation, Inc. (This exhibit was split into thirds given its size)	Exhibit lacks relevance (WRE 401-403); Exhibits are hearsay (WRE 802)
41.	May 12, 2010 AML Contract Processing Slip, submitted by Earth Work Solutions, for the AML Project 17J, Carney Mine project	Exhibit lacks relevance (WRE 401-403); Exhibit is hearsay (WRE 802)
42.	May 12, 2009 information associated with AML Project 17J, Carney Mine Rd. Subsidence Abatement	Exhibit lacks relevance (WRE 401-403); Exhibit is hearsay (WRE 802)
43.	April 22, 2008 information associated with AML Project 17J, Acme No. 1 fire subsidence	Exhibit lacks relevance (WRE 401-403); Exhibit is hearsay (WRE 802)

Exhibit No.¹	Description	Brooks' Specific Objection by Wyoming Rule of Evidence
44.	June 29, 2015 information associated with AML Project 17J, Old Monarch Mine subsidence	Exhibit lacks relevance (WRE 401-403); Exhibit is hearsay (WRE 802)
45.	December 12, 2016 electronic mail correspondence between Melissa Bautz and BJ Kristiansen regarding AML's study of subsidence risk in the permit area	Exhibit lacks relevance (WRE 401-403)
46.	Figure 5 from the Sheridan County Land Use Plan documenting "hazardous areas" including "Known Subsidence Area[s]"	Exhibit lacks relevance (WRE 401-403); Exhibit is hearsay (WRE 802)
47.	USGS Paper 1164, "Effects of Coal Mine Subsidence in the Sheridan, Wyoming Area," 1980	Exhibit lacks relevance (WRE 401-403); Exhibit is hearsay (WRE 802)
48.	October 07, 2015 electronic mail correspondence between BJ Kristiansen and Jeff Barron regarding removal of a rail loadout facility from the permit application	NO OBJECTION
49.	July 9, 2014 electronic mail correspondence between Ron Destefano and Jeff Barron regarding coal handling facilities and an associated spur track for review by WYDOT	Exhibit lacks relevance (WRE 401-403); Exhibit contains hearsay (WRE 802)
50.	Handwritten notes from Mark Rogaczewski produced by DEQ during discovery discussing a conversation with Jeff Barron regarding rail facilities inside the permit boundary	Exhibit lacks relevance (WRE 401-403)
51.	June 07, 2015 electronic mail correspondence between Brian Wood and Doug Emme regarding subsidence control plans/highwall mining requirements (and snow)	NO OBJECTION
52.	October 21, 2015 electronic mail correspondence between Mark Rogaczewski and David Schellinger regarding overburden sampling analyses	NO OBJECTION
53.	July 05, 2016 electronic mail correspondence between Matthew Kunze and BJ Kristiansen regarding CHIA requirements	NO OBJECTION

Exhibit No.¹	Description	Brooks' Specific Objection by Wyoming Rule of Evidence
54.	June 03, 2014 electronic mail correspondence between Matthew Kunze and BJ Kristiansen the permit and the CHIA	NO OBJECTION
55.	December 10, 2015 electronic mail correspondence between BJ Kristiansen and LQD staff regarding the permit application review	NO OBJECTION
56.	February 23, 2015 electronic mail correspondence between BJ Kristiansen and Andrew Kuhlmann regarding permit application review	NO OBJECTION
57.	March 16, 2015 electronic mail correspondence between BJ Kristiansen and Andrew Kuhlmann regarding permit application review	NO OBJECTION
58.	January 12, 2016 electronic mail correspondence between BJ Kristiansen and Andrew Kuhlmann regarding permit application review	NO OBJECTION
59.	January 14, 2016 electronic mail correspondence between BJ Kristiansen and Andrew Kuhlmann regarding permit application review	NO OBJECTION
60.	November 17, 2015 electronic mail correspondence between BJ Kristiansen and Kyle Wendtland regarding permit application review	NO OBJECTION
61.	March 24, 2016 electronic mail correspondence between BJ Kristiansen, Kyle Wendtland, and Alan Edwards regarding permit application review	NO OBJECTION
62.	April 12, 2016 electronic mail correspondence between Alan Edwards and Mark Rogaczewski (copying Kyle Wendtland) regarding permit application review	NO OBJECTION
63.	March 15, 2017 letter from Tony Wendtland to Joan Tellez	Exhibit lacks relevance (WRE 401-403); Exhibit is hearsay (WRE 802)

Exhibit No.¹	Description	Brooks' Specific Objection by Wyoming Rule of Evidence
64.	April 5, 2000 OSMRE Directive 882, Handbook for Calculation of Reclamation Bond Amounts	Exhibit lacks relevance because DEQ standards govern this case not OSM (WRE 401-403); Exhibit contains hearsay (WRE 802)
65.	Brook draft reclamation bond calculation, provided through discovery	NO OBJECTION
66.	Another draft of a reclamation bond calculation	NO OBJECTION
67.	Brook Mine 2015 Bond	NO OBJECTION
68.	OSMRE 2013 Annual Evaluation Report for the Wyoming Regulatory Program, October 2013, excerpts related to evaluation of blasting	Exhibit lacks relevance because DEQ standards govern this case not OSM (WRE 401-403); Exhibit contains hearsay (WRE 802)
69.	Supplemental OSMRE Special Study Topic Oversight Report on Blasting in Wyoming for the 2013 Annual Evaluation Report for the Wyoming Regulatory Program	Exhibit lacks relevance because DEQ standards govern this case not OSM (WRE 401-403); Exhibit contains hearsay (WRE 802)
70.	April 12, 2016 electronic mail correspondence between Mark Rogaczewski and Kyle Wendtland regarding a meeting request from the Resource Council	Exhibit lacks relevance (WRE 401-403); Exhibit contains hearsay (WRE 802)
71.	April 27, 2016 electronic mail correspondence between Kyle Wendtland and Alan Edwards regarding a meeting request from the Resource Council	Evidence lacks relevance (WRE 401-03)
72.	April 7, 2017 presentation from Atlas Carbon on Advanced Carbon Products given in Gillette, Wyoming	Evidence lacks relevance (WRE 401-03); Exhibit is hearsay (WRE 802)
73.	Photo of Resource Council member home in the area, provided by John Buyok	NO OBJECTION
74.	Photo of recreation use on the Tongue River near the mine site provided by the Sheridan Community Land Trust	NO OBJECTION
75. -78.	Photos of the Bocek property, provided by Joan Tellez and Anton Bocek	NO OBJECTION
79.	Aerial photo of the area of Resource Council member properties, provided by the Sheridan Community Land Trust	NO OBJECTION

Exhibit No.¹	Description	Brooks' Specific Objection by Wyoming Rule of Evidence
80. -82.	Photos of subsidence on the Buyok property, provided by John Buyok	NO OBJECTION
83.	Game & Fish Department Map of Sheridan County Walk-in Areas 1, 6, and 7	NO OBJECTION
84.	OSMRE subsidence course training materials provided by OSMRE to DEQ	NO OBJECTION
85.	March 6, 2017 electronic mail correspondence between Jeff Barron and BJ Kristiansen regarding a Sheridan County Board of County Commissioners meeting	Evidence lacks relevance (WRE 401-03)
86.	July 22, 2014 information on AML project 17.32 relating to the Buyok-Monarch mine fire	Evidence lacks relevance (WRE 401-03); Exhibit is Hearsay (WRE 802)
87.	July 31, 2014 information on AML project 17.32 for mine subsidence abatement at the Carney Mine	Evidence lacks relevance (WRE 401-03); Exhibit is Hearsay (WRE 802)
88.	September 2, 2016 information on AML project 17.32 for portal closures at the Acme, Kooi, and Old Monarch Mines	Evidence lacks relevance (WRE 401-03); Exhibit is Hearsay (WRE 802)
89.	Jan 30, 2017 electronic mail correspondence between LQD staff, Todd Parfitt, and Alan Edwards	NO OBJECTION
90.	Letter from the Tongue River Water Users regarding concerns with the proposed mine	Evidence lacks relevance because the Tongue River Water Users did not request a contested case or file a timely objection (WRE 401-03); Exhibit is Hearsay (WRE 802); Exhibit lacks foundation because no listed PRBRC witness has personal knowledge to testify about this exhibit (WRE 602)
FISHER 1	Aerial Photo of portion of Tongue River Valley	NO OBJECTION

Exhibit No.¹	Description	Brooks' Specific Objection by Wyoming Rule of Evidence
FISHER 2	Photos of Fishers' house and property 2-A: Old Photo of House 2-B: Old Rock Barn Structure 2-C: Initials carved on rock barn: L.S. July 26, '13 2-D: Old Rock Building/Dwelling on Property 2-E: Fisher house at time of purchase in 1996 2-F: Phase 1 depiction of house remodel 2-G: Current depiction of Fisher house 2-H: Mature fruit trees and pine trees with new fence 2-I: Landscape photo of Fisher property from frontage road 2-J: Landscape photo of Fisher property from I-90	NO OBJECTION
FISHER 3	Photos of Boceks' property adjacent to Fishers 3-A: Bocek property view along frontage road 3-B: Bocek property view along frontage road	NO OBJECTION
FISHER 4	Photo of Mine Subsidence in Sheridan County	NO OBJECTION
FISHER 5	Letter from Todd Parfitt dated 01/30/17 denying informal conference	Evidence lacks relevance (WRE 401-03)
FISHER 6	Letter from Fishers to BKS Environmental Associates, Inc. dated 07/03/13	Exhibit is Hearsay (WRE 802)
FISHER 7	Email chain between BKS and Niles Veal (July, 2013) regarding trespass on Fisher property (<i>Brook 041660-041662</i>)	Evidence lacks relevance (WRE 401-03); Exhibit is Hearsay (WRE 802)
FISHER 8	Article dated 12/15/14 entitled "Feds To Boost Mine Blasting Emissions Rules" (Cheyenne (AP))	Evidence lacks relevance (WRE 401-03); Exhibit is Hearsay (WRE 802)
FISHER 9	Internet Blog posted on 02/04/14 entitled: "Photos: Hazardous Gas Clouds From Coal Mine Blasting In Southeastern Montana"	Evidence lacks relevance (WRE 401-03); Exhibit is Hearsay (WRE 802)
FISHER 10	WyoFile Article by Bleizeffer dated 02/22/13: "There's \$428M in Unfunded Abandoned Mine Reclamation Work in Wyoming"	Evidence lacks relevance (WRE 401-03); Exhibit is Hearsay (WRE 802)

Exhibit No.¹	Description	Brooks' Specific Objection by Wyoming Rule of Evidence
FISHER 11	Sheridan Media Web Content Article dated 02/09/17 (<i>produced by Fishers in discovery</i>)	Evidence lacks relevance (WRE 401-03); Exhibit is Hearsay (WRE 802)
FISHER 12	Gerlach-Map (C-1 Objection Exhibit C) from Expert Report	NO OBJECTION
FISHER 13	<i>Brannaman vs. Paxton Resources, LLC</i> .Judgment	Evidence lacks relevance (WRE 401-03)
FISHER 14	<i>Sorenson vs. High Plains Gas, Inc., et al.</i> Judgment	Evidence lacks relevance (WRE 401-03)
FISHER 15	Email from Deanna Hill to BJ Kristiansen dated 11/21/14 (<i>part of DEQ document production</i>)	NO OBJECTION
FISHER 16	Email from Kim Pandullo to Kyle Wendtland dated 08/12/15 (DEQ Emails pg. 6298)	Evidence lacks relevance (WRE 401-03)
FISHER 17	Emails from/to Morrison and DEQ re meeting with landowners dated April, 2016 (DEQ Emails pg. 7756)	Exhibit is Hearsay (WRE 802)
FISHER 18	Emails between Page and Rogaczewski dated May 23-24, 2016 (DEQ Emails pgs. 8007-8008)	NO OBJECTION
FISHER 19	Email from Barron to Rogaczewski and Kristiansen dated 06/21/16 (DEQ Emails pg. 8123)	NO OBJECTION
FISHER 20	Email from Kristiansen to Barron dated 02/13/17 with attached Memorandum: Brook Mine A VF Determination, Slater Creek dated 01/07 /16	NO OBJECTION
FISHER 21	DEQ Emails regarding mine subsidence plan dated 01/03/14	NO OBJECTION
FISHER 22	Email from BJ. Kristiansen to Tanya King re underground mine plan dated 01/02/14	NO OBJECTION
FISHER 23	Email from BJ. Kristiansen to Robin Jones re underground mine permits dated 01/02/14	NO OBJECTION
FISHER 24	Email from Matt Kunze to Shannon Anderson re CHIA for Brook Mine dated 03/20/15	NO OBJECTION
FISHER 25	Letter dated 02/24/16 from B.J. Kristiansen to Randall Atkins re AVF	NO OBJECTION
FISHER 26	Fishers' Objection Lt. dated 01/22/17 (already filed and part of record)	Exhibit is Hearsay (WRE 802)

Exhibit No.¹	Description	Brooks' Specific Objection by Wyoming Rule of Evidence
BHC 1	Sweeney CV	Exhibit is Hearsay (WRE 802)
BHC 2	Map of BH and BM Permit Boundaries	NO OBJECTION
BHC 3	Big Horn 1-25-2015 Objection Letter	Exhibit is Hearsay (WRE 802); Hearsay within Hearsay (WRE 805);
BHC 4	Email to DEQ Requesting Informal Conference	NO OBJECTION
BHC 5	List of Requested Conditions	Exhibit was not produced in discovery (WRCP 26); hearsay (WRE 802)
BHC 6	Cordero Rojo and Buckskin Permit Provisions	Exhibit is Hearsay (WRE 802); Exhibit lacks relevance (WRE 401-03); Exhibit lacks foundation (WRE 901, 602)
BHC 7	Brook Mine RP .12 and MP .22	NO OBJECTION
BHC 8	Gerlach CV	Exhibit is Hearsay (WRE 802)
BHC 9	Gerlach Expert Report	Exhibit is Hearsay (WRE 802)
BHC 10	Gerlach Report, C-1 Objection Exhibit A	NO OBJECTION
BHC 11	Gerlach Report, C-1 Objection Exhibit B	NO OBJECTION
BHC 12	Gerlach Report, C-1 Objection Exhibit C	NO OBJECTION
BHC 13	Gerlach Report, C-1 Objection Exhibit D	NO OBJECTION
BHC 14	Gerlach Report, C-1 Objection Exhibit E	NO OBJECTION
BHC 15	Gerlach Report, C-1 Objection Exhibit F	NO OBJECTION
BHC 16	Gerlach Report, C-2 Objection Exhibit A	NO OBJECTION
BHC 17	Gerlach Report, C-2 Objection Exhibit B	NO OBJECTION
BHC 18	Gerlach Report, C-3 Objection Exhibit A	NO OBJECTION
BHC 19	ATC-Ramaco Termination of Services Letter	NO OBJECTION

DATED: May 19, 2017.



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BROOK MINING COMPANY, LLC

CERTIFICATE OF SERVICE

I hereby certify that on May 19, 2017, I served a true and correct copy of the foregoing by email to the following:

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Exhibit 1

Interrogatory No. 3: Please identify the individuals who helped you prepare your objections to Brook Mining Co., LLC's Coal Mining Permit Application.

Answer: As discussed in the response to Interrogatory No. 1 above, Ms. Anderson consulted with Mr. Wireman, Dr. Marino, and Mr. Levit to prepare objections to the permit application. The objections were written by Ms. Anderson, and a draft was reviewed by Ms. Morrison and Bob LeResche, Powder River Basin Resource Council Board Chair.


Interrogatory No. 4: Please state the names, addresses, telephone numbers and places of occupation of all persons known to you to have any knowledge of any fact concerning the objections submitted by PRBRC, and for such person, please set forth the subject matter to which they are believed to have knowledge.

Answer: The facts relied upon in preparation of our objections were almost exclusively facts contained in the permit application, correspondence with DEQ staff about the permit application, and statements or representations made by Ramaco/Brook agents in the press or via the company's website, all of which are already known to Brook, its counsel, and its agents. Our objections were also based on personal knowledge of our staff, Shannon Anderson and Jill Morrison, about subsidence and coal fire issues in the area, landowner use of the area known to Ms. Anderson, landowner member concerns known to Ms. Anderson, and the recreation interests of our members known to Ms. Anderson. Our experts reviewed the permit application and correspondence between Brook and DEQ in developing their opinions. They also reviewed DEQ regulations and guidance documents related to coal mine permits. We have previously disclosed the scope of the expert review and the likely substance of their testimony at the hearing.

Certification

I have reviewed Powder River Basin Resource Council's responses to interrogatories provided to Brook Mining Co., LLC, and I attest to their truthfulness to the best of my information and belief.

Executed at Sheridan, WY, this 21 day of April, 2017.


Jill Morrison

On Behalf of Powder River Basin Resource Council

STATE OF WYOMING)
)
COUNTY OF SHERIDAN)

This document was signed and sworn to before me on April 21, 2017 by






Notary Public

My appointment expires: May 28, 2019

Exhibit 2

****SIGNATURE
REQUESTED****

**BEFORE THE ENVIRONMENTAL QUALITY COUNCIL
STATE OF WYOMING**

Civil Action Number: 17-4802

IN RE BROOK MINE
APPLICATION
TEN6 2-025

DEPOSITION OF JILL MORRISON

Taken on behalf of Brook Mine

12:25 p.m., Monday
May 8th, 2017

PURSUANT TO AGREEMENT, the Deposition of
JILL MORRISON was taken in accordance with the
applicable Rules of Civil Procedure in the Jury
Room of the Sheridan County Courthouse, 224 South
Main Street, Sheridan, Wyoming, before Carol A.
O'Bryan, Certified Court Reporter, and a Notary
Public in and for the State of Wyoming.

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A P P E A R A N C E S

(Continued)

ALSO PRESENT: Carri Svec
Jeff Barron
Niles Veal
Butch Jellis
Mary Fisher
Gillian Malone

I N D E X

P A G E

DEPOSITION OF JILL MORRISON:
Examination by Mr. Pope..... 5

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(Via telephone)

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EXHIBIT INDEX

MARKED FOR
IDENTIFICATION

P A G E

Deposition Exhibit 2.....35
Comments filed by PRBRC,
1/27/17 re: Brook Mine

Deposition Exhibit 9.....50
E-mail chain, Tuesday, 11/22/16
Copied to Jill Morrison

Deposition Exhibit 10.....55
Suggested template for response
by Powder River Basin Resource
Council members regarding
objections to Brook Mine's permit

Deposition Exhibit 11.....59
E-mail from Jill Morrison,
1/18/17, subject line, Publication
on white collar crime and engineers
- Orin Atkins.

Deposition Exhibit 12.....62
E-mail from Morrison, 3/6/17
sent various members of the PRBRC

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1 documents from the Environmental Quality Council
2 hearing on that matter?

3 **A Some of them.**

4 **Q** Did you happen to notice in those
5 documents that Big Horn Coal mentioned a rail
6 maintenance facility that it intended to
7 construct?

8 **A I don't remember seeing that.**

9 **Q** So with that example in mind, what other
10 places in these comments did you help gather facts
11 to support these comments?

12 **A The next section on impact of**
13 **conservation easements and recreation areas.**
14 **Yeah.**

15 **I mean, and every one of these issues,**
16 **you know, I had some sort of fact-gathering in**
17 **terms of reading and reviewing the permit, looking**
18 **at the maps, discussing it with our members, our**
19 **experts.**

20 **I would say, yes, I'm familiar with**
21 **every single area and pulled information related**
22 **to a lot of it.**

23 **Q** Given the facts that you gathered and
24 your knowledge of these comments, will you be
25 providing testimony to the Environmental Quality

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1 Council in support of these comments and
2 objections?

3 **A I don't plan to. We haven't determined**
4 **our final witness list, but we're relying**
5 **primarily upon our expert witnesses and our fact**
6 **witnesses with our landowners.**

7 **Q** That's what I'm driving at. What land
8 owners helped you prepare or gather the facts in
9 support of these comments?

10 **A Well, John Buyok, Anton Bocek. We've**
11 **had conversations with Mary and David Fisher,**
12 **Brook Collins, other members of ours that recreate**
13 **in the area, numerous members of ours that**
14 **recreate in the area.**

15 **Q** Besides landowners --

16 **A And then our experts Gerry Marino and**
17 **Mike Wireman.**

18 **Q** Fair enough. Besides the landowners you
19 just identified, who else that's employed by the
20 Council, so not a member, an employee, helped
21 gather facts that support the comments in
22 Exhibit 2?

23 **A Well, my colleague Shannon who is our**
24 **attorney.**

25 **Q** To your knowledge, does Ms. Anderson --
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1 did Ms. Anderson gather any facts that appear in
2 these comments or support these comments that are
3 known only to her?

4 **A The legal facts as a lawyer.**

5 **Q** Anything besides this?

6 **A I don't think so.**

7 **Q** If you would look back to Page Number 2,
8 Ms. Morrison, the top of Page 2, there's a Number
9 1 that says, General objections for the mine plan.
10 Do you see that?

11 **A Uh-huh.**

12 **Q** Under this section it's a discussion of
13 alleged varying estimates in the annual production
14 from the Brook Mine; is that a fair
15 characterization?

16 **A Yes.**

17 **Q** To your knowledge, does the Brook Mine
18 Permit Application list an estimate of annual coal
19 production?

20 **A What is listed in these comments is**
21 **Table MP-1-2. That looks like estimated annual**
22 **production.**

23 **Q** Do you know if that came from Brook
24 Mine's permit application?

25 **A I believe it did.**

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1 **Q** Now, you go on in here to -- the
2 comments go on to discuss that there have been
3 differing estimates The Press. And I see there's
4 a hyper link to an article, and I'm looking at
5 Page 3. I'm sorry, Ms. Morrison.

6 Are you aware of any changes that Brook
7 has made to its permit application in regard to
8 estimated annual production?

9 **A Well, I think as a question we have.**
10 **We've heard many different variations of what the**
11 **production is going to be.**

12 **And there's a few different places that**
13 **have been mentioned or listed, and so there's**
14 **conflicting information.**

15 **Q** My question, Ms. Morrison, is focused on
16 the permit application.

17 Are you aware of any changes that Brook
18 has made to the estimated annual production that
19 is listed in its permit application?

20 **A That's listed in the permit application,**
21 **I don't think so.**

22 **Q** All right. Would you turn with me to
23 Page Number 4 in Exhibit 2, please.

24 **A (Witness complies.)**

25 **Q** I'd like to talk to you about the bold
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1 MR. POPE: We can go off the record
 2 now. Thank you.
 3
 4
 5 (Whereupon Deposition Proceedings
 6 were concluded at 3:07 p.m. on
 7 Monday, May 8, 2017.)
 8
 9 (SIGNATURE REQUESTED.)
 10
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70

1 REPORTER'S CERTIFICATE
 2
 3 I, CAROL A. O'BRYAN, a Certified Court
 4 Reporter and a Notary Public of the State of
 5 Wyoming, do hereby certify that JILL MORRISON was
 6 by me first duly sworn to testify to the truth,
 7 the whole truth, and nothing but the truth;
 8
 9 That the foregoing transcript, consisting
 10 of 69 typewritten pages, is a true record of the
 11 testimony given by the said deponent, together
 12 with all other proceedings herein contained.
 13
 14 IN WITNESS WHEREOF, I have hereunto set
 15 my hand and affixed my Notarial Seal this 10th day
 16 of May, 2017.
 17
 18 _____
 19 Carol A. O'Bryan
 20 Certified Court Reporter
 21
 22
 23 My Commission Expires:
 24 October 13th, 2020
 25

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71

1 DEPONENT'S CERTIFICATE
 2
 3 I, JILL MORRISON, do hereby certify that
 4 I have read the foregoing transcript of my
 5 testimony consisting of 69 pages taken on Monday,
 6 May 8th, 2017, and that the same is a full, true
 7 and correct record of my deposition.
 8
 9 _____
 10 JILL MORRISON
 11
 12 () No changes () Changes attached
 13
 14 Subscribed and sworn to before me this,
 15 _____ day of _____, 2017.
 16
 17 _____
 18 Notary Public
 19
 20 My Commission Expires:
 21 _____
 22
 23
 24
 25

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72

1 SIGNATURE PAGE
 2 I, JILL MORRISON, the aforementioned
 3 witness, have read my deposition transcript; and
 4 have made the following corrections:
 5
 6 REASONS -1- Clarify the Record
 7 FOR CHANGES: -2- Conform to Facts
 8 -3- Correct transcription error
 9
 10 Use 1, 2, 3
 11 Correction As Reason for
 12 Page Line (Change from) (Change to) Change
 13 _____
 14 _____
 15 _____
 16 _____
 17 _____
 18 _____
 19 JILL MORRISON
 20 SUBSCRIBED AND SWORN TO before me this _____
 21 day of _____, 2017 by _____.
 22
 23 _____
 24 Notary Public
 25 My Commission Expires: _____

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From: Jan Kelley
To: lboomgaarden@crowleyfleck.com; cgregersen@crowleyfleck.com; todd.parfitt@wyo.gov; andrew.kuhlmann@wyo.gov; james.larock@wyo.gov; sanderson@powderriverbasin.org; jgilbertz@yonkeetoner.com; alan.edwards@wyo.gov; [Jim Ruby](#)
Cc: [Thomas Sansonetti](#); [Isaac Sutphin](#); [Jeffrey S. Pope](#); [Carri Svec](#)
Subject: Brook Mine Application - Notice of Filing Amended Exhibit
Date: Friday, May 19, 2017 4:26:59 PM
Attachments: [2017-05-19 Notice of Filing Amended Exhibit.pdf](#)
[Brook 7- Compiled Round 1 Comment Responses 1.pdf](#)
[Brook 8 - Compiled Round 2 Comment Responses.pdf](#)
[Brook 9 - Compiled Round 3 Comment Responses.pdf](#)

Attached please find a Notice of Filing Amended Exhibit with Exhibits 7, 8, and 9

Jan Kelley

*Assistant to Isaac Sutphin, JoAnna DeWald,
and Sami Falzone*

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ATTORNEYS FOR PERMIT APPLICANT
BROOK MINING COMPANY, LLC

**BEFORE THE ENVIRONMENTAL QUALITY COUNCIL
STATE OF WYOMING**

IN RE BROOK MINE APPLICATION)
) Civil Action No. 17-4802
 TFN 6 2-025)

NOTICE OF FILING AMENDED EXHIBIT

Brook inadvertently filed Round 1 Comments, identified as Exhibit 7; Round 2 Comments, identified as Exhibit 8; and Round 3 Comments, identified as Exhibit 9, rather than Comments with Brook's responses, as indicated in its list of exhibits. Attached are the correct Exhibits 7, 8 and 9 that will replace the current Exhibits 7, 8 and 9.

DATED: May 19, 2017.

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BROOK MINING COMPANY, LLC

CERTIFICATE OF SERVICE

I hereby certify that on May 19, 2017, I served a true and correct copy of the foregoing by email to the following:

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Brook 7

Adjudication

Comment AG 1

Please also provide copies of the complaint and the answer. If there are any motions that the court has ruled on limiting or deciding any of the claims or factual or legal questions originally at issue in the case, please also provide copies of the orders, the motions, the responses to the motions, and any supporting memoranda.

Response AG 1

The Applicant's position with regard to any surface interests that may be claimed by Padlock Ranch Company and/or Big Horn Coal Company is that the Applicant alone owns the sole dominant present property right to use these surface lands for the coal mining operation described in the application, as that application has been submitted and supplemented. Applicant's sole dominant surface ownership and use interest in the relevant lands derives directly from the 1954 Deed (Attachment B) and its express reservation language. Pursuant to the controlling Wyoming Supreme Court authority set out in *WYMO Fuels, Inc. v. Edwards*, 723 P.2d 1230 (Wyo. 1986) (Attachment C), when the Applicant already owns the dominant surface use rights for coal mining on the property, then the Applicant consents to its own use pursuant to its application by submitting the application and no other surface consents can or should be required under W.S. § 35-11-406(b)(xi). As the Land Quality Division is aware, to the extent that Padlock Ranch Company incorrectly claims some surface rights on any lands described in the 1954 Deed, it necessarily could only attempt to do so fully subject to the Applicant's sole dominant surface rights to mine coal. Under the *WYOMO Fuels, Inc.* decision, no consent from Padlock can be required. To the extent that Big Horn Coal incorrectly claims some surface use right in this area at this time, the Applicant is proceeding with quiet title litigation (Fourth Judicial District Court, Sheridan County, Wyoming Civil No. CV 2014-372) against Big Horn Coal on this issue and has asserted its sole dominant reserved surface right to use the surface described in the 1954 Deed to mine coal there without any consent from Big Horn Coal pursuant to the *WYOMO Fuels, Inc.* case decision. Accurate copies of the Applicant's pending summary judgment motion arguments on this issue are enclosed with this response (attachment D and E). The Applicant can and will supplement these pleadings with further documentation that is described in the pleadings upon request.

Comment AG 2

Therefore, the Division requests the Applicant to provide sufficient information and supporting documents for the Division to determine whether Padlock Ranch Company and Big Horn Coal Company are or are not "residential or agricultural landowners" under the statutory definition in W.S. § 35-11-406(b)(xi).

Response AG 2

Please see response AG 1.

Comment DM 1

Adjudication – Appendix B2 – Groundwater Rights – There is a groundwater well that is missing in this volume. The listing is as follows:

Barbula #2

Permit No. 85631W

Location: SW NW Section 21, T57N R84W

Please add this entry to the table and to any corresponding maps.

Response DM 1

Adjudication text page WR-12 has been updated to include Barbula # 2 (P85631W) as well as Adjudication Exhibits 5 & 8.

Appendix D1

Comment BJ 1

Appendix D1, Land Use, Table D1. 3-1; It is unnecessary to list the Expired Permit category of gas well permits. Since these APDs have expired without completion there is no related activity to the site. Listing of a non-event is not required. This also applies to the NO category since this indicates that the APD was refused, thus never became permitted through WOGCC.

Response BJ 1

Revised Table D1.3-1 as requested.

Comment SP 1

Appendix D-1. Exhibit D1.1-1. The landuses defined in Chapter 1 should be used on this Exhibit. Not the entire Brook Mine Permit falls neatly into these definitions so the following comments provide guidance:

- a) The railroad, primary roads, oil and gas wells, and the facilities for Taylor Quarry would be considered Industrial commercial and may be shown with the vertical line stippling. The rest of the vertical stippling should be removed.
- b) The 4.5 acres of Agricultural lands would have the Land use of Cropland. This small acreage will not show up well on this map but is listed in Tables D.8-2 and RP.6-1 so no changes are needed to the map for this land use.

- c) The 12.8 acres of water might be listed under multiple landuses such as Grazingland, Fish and Wildlife habitat or Recreational. This small acreage will not show up well on this map but is listed in Tables D.8-2 and RP.6-1 so no change is needed to the map for this land use.
- d) The 4,421.8 acres remaining should be shown as Grazingland and Fish and Wildlife habitat. The legend on the map should have Fish and Wildlife Habitat added to Past and Present Grazingland landuse. The stippled area on the map will stay the same.
- e) No changes are needed to the areas identified as Recreational.

Response SP 1

Revised Exhibit D1.1-1 as requested.

Comment SP 2

Appendix D-1. Text that refers to the areas mined as Industrial commercial should be revised to remove the mining. A reference to Section 1.6 on historic mining can be made in Section D1.3.1. Grazingland. The reclaimed mined lands are now being used as Grazingland. The difference between the mined and never been mined is defined as the vegetation community that is called Reclaimed. Section D1.6 discusses the historic mining of the area and the discussion on coal mining in Industrial commercial (D1.4.3) can be removed.

Response SP 2

Revised text as requested.

Appendix D2

Comment BJ 2

Appendix D2, History, There are no comments for this section of the application. The narrative is well written and comprehensive.

Response BJ 2

No response is necessary.

Appendix D3

No comments were received regarding Appendix D3.

Appendix D4

Comment BJ 3

Appendix D4, Climatology, General comment – Is there no data for climatology that is more recent than 1990? It exists, therefore needs to be represented. Please locate and include the most recent climatological data. Twenty year-old data bears little resemblance to Sheridan County climate today so characterization of the present climate with a 20 year gap is problematic. Please reevaluate the data in light of locating and use more recent information.

Response BJ 3

Revised wind, relative humidity, and degree day data to reflect period between 1990 and 2013. Note, as can be observed by updated data, little change occurred in averages reported for wind, relative humidity, and degree days. Therefore, the wind rose provided in Figure D4.2-6 is deemed to still be representative of the Sheridan area. Revised Figure D4.2-1, Figure D4.2-11, Table D4.1-1, Table D4.2-2, Table D4.2-3, and Table D4.2-7 in response to this comment.

Comment BJ 4

Appendix D4, Climatology, Section D4.2.6, Why was 65°F used as the baseline temperature? Also, why were the high and low temperatures set to 86°F and 50°F respectively? Please clarify.

Response BJ 4

Revised text to clarify the choice of high and low temperatures.

Comment BJ 5

Appendix D4, Climatology, Figure 4.2-11, Are the degree days the total number of days that match the data points for the entire period from 1961 through 1990? This indicates that the data represented along the Y axis covers a period of 30 years on a daily basis. Please clarify.

Response BJ 5

Revised text with definitions of heating, cooling, and growing degree days to clarify Figure 4.2-11. Degree days are essentially a unit of measure like temperature, velocity, etc. A degree day signifies the number of degrees per day to heat or cool to a specified base temperature (most commonly 65°F). Each degree day is summed over the course of a month to estimate the total number of degree days that month. For example, July may have 0 heating degree days because all days are over 65°F, but will have cooling degree days nearly every day of the month. Figure 4.2-11 shows the average monthly degree days over the specified periods of data.

Appendix D5

Comment BJ 6

Appendix D5, Topography, Geology, and Overburden Assessment, Section D5.4.1, Paragraph 2 refers to "marginally suitable Selenium levels" as defined in LQD Guideline No.1. Guideline 1 has two separate sets of chemical quality criteria tables. Appendix 1 occurs on pages 17-21 as well as on pages 38-43. The first set of tables have been superseded by the second set of tables. Please use the tables on pages 38-43 when determining material suitability. The first Appendix 1 is being removed from the guideline.

The newer tables define the Selenium target as follows:

Suitable < 0.3 ppm

Marginal 0.3 – 0.8 ppm

Unsuitable > 0.8 ppm (dependent on premining water quality and overburden quality)

These values are established for uplands and ephemeral drainages unless it can be shown that Selenium impregnated materials will be buried above the groundwater potentiometric surface and below the reclaimed surface root zone. Other quality criteria have not changed.

Response BJ 6

Revised text as requested to reflect the revised LQD Appendix 1.

Comment BJ 7

Appendix D5, Topography, Geology, and Overburden Assessment, Figure D5.3-2, What units are expressed in the figure as the %g? Please include a footnote clarifying the measurement parameter.

Response BJ 7

Updated Figure D5.3-2 as requested.

Comment BJ 8

Appendix D5, Topography, Geology, and Overburden Assessment, Addendum D5-1, Are the Northings and Eastings in State Plane coordinates? It is assumed that they are but please verify this. The title at the top of the page could read Drill Hole Tabulations (State Plane Coordinates)

Response BJ 8

Updated as requested.

Comment BJ 9

Appendix D5, Topography, Geology, and Overburden Assessment, Addendum D5-2, Please rearrange the Lithologic and Electric logs in such a way that the Electric log immediately follows the Lithologic log. This allows for a more comprehensive examination of the data.

Response BJ 9

Rearranged logs as requested.

Comment BJ 10

Appendix D5, Topography, Geology, and Overburden Assessment, Holes R12-000 through R12-020 have the Northings and Eastings reversed. Please correct.

Response BJ 10

Updated as requested.

Comment BJ 11

Appendix D5, Topography, Geology, and Overburden Assessment, The Lithologic logs with the AMBRE designation 02, 03, and 04 do not have coordinates or elevations. Please provide coordinates and elevations for these three holes.

Response BJ 11

Updated as requested.

Comment BJ 12

Appendix D5, Topography, Geology, and Overburden Assessment, Hole R13-018 appears to have erroneous coordinates. The Northing is listed as 11,941,802. It should probably be 1,941,802. The elevation is shown as 43,887.9, where it should probably be closer to 3,887.9. Please verify and correct.

Hole R13-024 has a very high Northing at 61,941,541 and elevation at 73,885.4. These may be 1,941,541 and 3,885.4, respectively. Please verify and correct

Response BJ 12

Updated as requested.

Comment BJ 13

Appendix D5, Topography, Geology, and Overburden Assessment, A suggestion for future exploration: Ask the geophysical logger to reduce the gain on the gamma logs. The readjustment bounce on the logs makes them a bit difficult to read and interpret.

Response BJ 13

No response required.

Comment BJ 14

Appendix D5, Topography, Geology, and Overburden Assessment, Addendum D5-5, Pg. D5-5-4, The splitting tensile strength tests were run on four (4) samples from two (2) holes representing roof, coal, and floor conditions.

- a) Why were these locations used as representative of the lithologies encountered during mining?
- b) Are these few samples representative of all conditions expected to be encountered by the continuous miner (CM)?

Please elaborate and clarify the narrative. A statement must be made that strength testing will be performed on at least one set of samples per mining panel prior to use of the CM to insure that conditions are favorable for roof retention without subsidence. Lithology in this area is inconsistent and rock strength can vary accordingly. Using the data provided on the four samples tested indicates that some of the overburden from hole R13-19 is unsuitable for highwall mining, based on the CAT® Site Evaluation Tool For Highwall Miners;

(<http://webtools.cat.com/globalmining/highwallminers/index.html>).

Response BJ 14

Appendix D5 Section D5.3.3.2 has been updated as requested.

Comment BJ 15

Appendix D5, Topography, Geology, and Overburden Assessment, Addendum D5-4, Exhibits 1 – 7, Please include the drill hole locations on these isopach maps.

Response BJ 15

Updated as requested.

Comment BJ 16

Appendix D5, Topography, Geology, and Overburden Assessment, Exhibit 8, The map labeled as the isopach map of the Lower Masters bed is a contour of a surface. Please replace the contour map with the appropriate isopach map

Response BJ 16

Updated as requested.

Comment BJ 59

EXHIBITS, Addendum D5-4, Exhibit 1, The title on the map declares that this is an overburden isopach, but the bed name is missing. Please indicate which bed this map pertains to.

Response BJ 59

Updated Exhibit 1 of Addendum D5-4 as requested.

Comment BJ 60

EXHIBITS, Addendum D5-4, Exhibit 8, The name of the PDF file for this exhibit indicates that this is an isopach map of the Masters Lower coal bed. The title in the map indicates that this is the contour of the base of the Masters coal seam. Please correct the title of the PDF file.

Response BJ 60

The title of Exhibit 8 of Addendum D5-4 will be revised in the electronic copy, as requested.

Comment BJ 61

EXHIBITS, Addendum D5-6, Exhibit 1, We commend RAMACO for sampling overburden locations on 80 acre spacing. There are some gaps in the sampling plan, however, that need to have core holes drilled to fill them. The underground Coal Rules and Regulations in Chapter 7, Section 1(a)(i) are specific on ensuring that overburden geology is characterized in all locations where overburden will be removed or subsidence may occur. This essentially means that all areas above the planned coal panels need representative cores drilled to a sufficient density, approximately one hole for every quarter section of affected area. Based on that, the following locations still need to be characterized by overburden sampling:

NE1/4, sec.22, T.57N., R.84W.

NW1/4, sec.15, T.57N., R.84W.

NW1/4, sec.14, T.57N., R.85W.

SE1/4, sec.10, T.57N., R.85W.

Response BJ 61

A drilling rig was not able to enter the areas NW1/4, Sec.14, T.57N., R.85W and SE1/4, Sec.10, T.57N., R.85W. due to the steepness of the terrain, therefore no samples were obtained. Sampling data for drill holes BH 166-78 and BE 326-78 have been incorporated into Addendum D5-2 and Addendum D5-7 to characterize the overburden in Sections 15 and 22.

Comment BJ 62

EXHIBITS, Addendum D5-6, Exhibit D5.1-1, Kudos to the staff member that created this slope analysis map. It is clear and concise and the histogram is very informative. Good job.

Response BJ 62

Thank you for this comment.

Comment DS 1

Appendix D5, The Coal Rules and Regulations, Chapter 7, Section 1(a)(i)(A) states that information required for the geological description pursuant to Chapter 2, shall be as follows: for areas where surface operations and facilities will cause removal of overburden down to a level of the coal seam, all information outlined in Chapter 2. Overburden sampling has not been performed in many of the locations where overburden will be removed during the mining operations. Additional sampling will be required to assess overburden chemistry in all areas where overburden removal will occur. The intensity of sampling should be 1 core per 160 acres (per quarter section). The LQD requests sampling every 1,900 linear feet on longer proposed disturbance areas or, at minimum, two cores within shorter disturbances separated sufficiently to provide a representative characterization of the proposed disturbance.

a. Not all overburden has been characterized during analysis. Several lenses of shallow coal mixed with partings or narrow coal seams that will not be mined were not characterized. Because all overburden must be handled so as not to negatively affect surface water, groundwater or vegetation, all overburden must be adequately characterized. Therefore, the LQD requests additional characterization of all overburden that will be backfilled into disturbed areas. It must also be stated that special handling and/or identification and use of topsoil/subsoil replacement may be required if unsuitable backfill or soil is placed within 4 feet of the surface on upland areas or within 10 feet of the surface in stream channels.

Response DS 1

Please see response to BJ 61.

Comment DS 2

Appendix D5, Section D5.4. – documentation of protocols that differ from those approved by the Administrator in Guideline 1 typically require a signed document by LQD staff, not a request for different procedure signed by the company. This issue has been discussed with other mining companies and it has been determined that documentation of approval by LQD staff will be required if sampling/analytical protocols differ from those required by standing LQD policy. Please provide documentation of LQD staff approval for the 10-ft. overburden sampling interval.

Response DS 2

See Attachment A to this response package. This has also been added to Addendum D5-6 pages 4 and 5.

Comment DS 3

Appendix D5, Table D5.4-1 and Table D5.4-2 do not provide the current approved selenium concentration limits of 0-3 ppm (suitable), 3-8 ppm (marginal) and > 8 ppm (unsuitable). Please be sure to include the current approved suitability criteria as shown in Guideline 1, page 42. This will change the conclusions of the discussion provided in the Appendix D5 text. Also, in Table D5.4-2, please provide the correct units for analytical results in mg/Kg, not mg/L.

Response DS 3

Please refer to BJ 6 response. Appendix D5 text, Table D5.4-1, and Table D5.4-2 are updated as requested.

Comment DS 4

Appendix D5, The permit application provided to LQD staff for review has duplicated data provided after the map identified as Exhibit 1 which should be deleted. The exhibit should also be better identified as Exhibit D5-1 or something similar to clarify placement in the permit application should it become separated from the document in the future.

Response DS 4

The electronic copies were provided to LQD staff for review purposes. The hard copy on file is the official version. Also, please see response to Comment DS 5.

Comment DS 5

Appendix D5, Comparisons were made between Exhibit 1, the soils map and the Mine Plan map. Distinct differences in the affected area and permit boundaries were observed. Please be sure that correct boundaries for the proposed affected area and permit area are provided on all maps. Please also provide the contour interval on this exhibit.

Response DS 5

Addendum D5-6 is a copy of the overburden sampling plan as presented to WDEQ on 8/26/2013, which referenced Exhibit 1. Therefore, no changes to the exhibit will be made.

Comment KM 2

Appendix D5, Page D 5-9 refers to samples collected from roof and floor from “many” locations throughout the permit area. However, supporting documentation appeared to be from only two borings and included two roof and one floor sample. In addition, the laboratory noted the floor sample did not have sufficient length and a correction factor was used to determine unconfined compressive strength. Additional structural analysis of the overburden, interburden and floor is required.

Response KM 2

During preparation of the MSHA Ground Control Plan additional coring of the coal and overburden will occur, data gathered from this activity will be supplied to WDEQ/LQD when it is received. Please see response to BJ 14.

Comment KM 3

Appendix D5, Please provide a discussion of the structural analysis of the overburden and interburden. The discussion shall address the potential for subsidence during and after mining.

Response KM 3

Structural analysis of the overburden, interburden, floor, and roof must be conducted for the MSHA Ground Control Plan. Information gathered for this plan will be provided when it is received. No text was updated in response to this comment. Please see response to BJ 14.

Comment KM 4

Appendix D5, Please discuss the aquifer(s) below the lowest coal seam and the potential for mining to impact these aquifer(s).

Response KM 4

The lowest coal seam targeted for mining is largely dry and is also confined by a clay layer. The underburden is not considered an aquifer therefore no impacts will occur.

Comment Muk 1

Appendix D5, Section D5.3.3.2 Overburden and Interburden, 1. This section provides a discussion of the thickness of interburden and not overburden. Please provide a discussion (or a reference) on the thickness of the overburden. (MK)

Response Muk 1

A reference to the geologic cross-sections Addendum D5-3 has been added to Section D5.3.3.2.

Comment Muk 2

Appendix D5, Section D5.3.3.3 Coal, 2. On Page D5-10, there is a good discussion about the thickness of the two coal seams. Please provide a description on the depth from land surface to these coal seams. (MK)

Response Muk 2

A reference to the geologic cross-sections Addendum D5-3 has been added to Section D5.3.3.3.

Comment Muk 3

Appendix D5, Section D5.3.3.3 Coal, 3. Page D5-10 states, "Monarch seam exist within isolated portions of the mine areas as shown on the geologic cross sections in Addendum D5-3 and may present a secondary target." However, Table D5.3-2 does not provide the coal quality characteristics for Monarch coal seam. If monarch seam is part of the mine plan, please include the coal quality characteristics of Monarch coal seam in Table D5.3-2 and a description of thickness and depth from land surface.

Response Muk 3

Table D5.3-2 has been updated with the coal quality characteristics for the Monarch seam. The overburden and seam thickness are included on the geologic cross-sections located in Addendum D5-3 referenced in the text.

Comment Muk 4

Appendix D5, Section D5.3.3.3 Coal, 4. Please include a discussion on Dietz (1, 2, 3) coal seams, if they are present in the mine permit boundary. If they are part of the mine plan, please include the coal quality characteristics in Table D5.3-2. (MK)

Response Muk 4

Discussion about the Dietz seams has been added in Section D5.3.3.3. These coal seams are not part of the currently proposed Mine Plan. Therefore, the quality data were not included in the table.

Comment Muk 5

Appendix D5, Section D5.3 Geology of Mine Area, 5. Please provide a description of the stratigraphic units below the Masters coal seam. (MK)

Response Muk 5

Section D5.3.3.4 has been added to discuss the underburden.

Comment Muk 6

Appendix D5, Addendum D5-3 Geologic Cross Sections, 6. Several of the geologic cross sections show UNK – unknown coal seam (Stringer). Please include a brief discussion about this stringer in Section D5.3.3.3 (MK)

Response Muk 6

Discussion about the stringers with unknown names has been added to Section D5.3.3.3.

Comment Muk 7

Appendix D5, Addendum D5-4 Isopachs, 7. Please include the wells/drill holes (control points) used to interpret the isopachs and elevation contours in the maps. In addition, label all the control points with names and the thickness (or elevation, as appropriate). This comment is applicable to Addendum D5-4, Exhibits 1 through 8. (MK)

Response Muk 7

Addendum D5-4 Exhibits 1 to 8 have been updated with drill hole locations as requested. A reference to Addendum D5-2 has been added to the exhibits for seam name and thickness.

Comment Muk 8

Appendix D5, Addendum D5-5 Overburden, Roof and Floor Sample Analysis Table, 8. Please describe these analyses, methodology, results and provide an interpretation of their applicability to the mine/reclamation plan. (MK)

Response Muk 8

Please see response to BJ 14.

Appendix D6

Comment BJ 17

Appendix D6, Hydrology, Section D6.2.3, Pg. D6-20, Narrative in the last paragraph – why were no samples taken in Hidden Water Creek? Please explain.

Response BJ 17

No flow was observed in Hidden Water Creek during baseline sampling, so no samples were taken. The text has been revised to reflect that there were no flows observed.

Comment BJ 18

Appendix D6, Hydrology, Table D6.1-8, Regarding the HEC-RAS modeling results – The values for Hidden Water Creek and Slater Creek are identical. Is this accurate or is it a typographical error? Please clarify.

Response BJ 18

Updated table to remove typographical error.

Comment BJ 19

Appendix D6, Hydrology, Addendum D6-7, The well construction summary sheets need to have the coal bed names listed on the well lithology sections to the right of the well diagrams. Please label accordingly.

Response BJ 19

Updated as requested.

Comment BJ 20

Appendix D6, Hydrology, Attachment D6-8-A, Pg. D6-8-20, A statement is made that water within both coal seams is expected to be "high quality" and "good" water. Please define the meaning of those characterizations. Are these judgments based on MCLs or some other value? Are they being classified by some constituent values? Or is there another metric being used? Please clarify.

For example; referencing WQD R&R, Chapter 8, Table I, Class I,II, or III would better define the essential characteristics of the water quality. Numerical values of critical constituents, such as TDS, could also serve to define the quality as "good". More descriptive qualifiers are needed to judge the water quality.

Response BJ 20

Revised text as requested.

Comment BJ 21

Appendix D6, Hydrology, Attachment D6-8-E, Hydrographs, The x parameter, time, is depicted in days. It appears that this scale should have been adjusted to show time in hours due to the rapid changes seen in the hydrographs. Please use a finer scale for the x axis.

Response BJ 21

The hydrographs were originally set up with the x axis in days to allow the reader to review recovery data. Rather than modifying the original hydrographs, additional hydrographs, each of which depict the time axis in hours, were developed and included as pages D6-8-36a and D6-8-37a. These additional hydrographs detail the water level changes over the portion of the pumping test period where the water level changes in the wells were the most rapid.

Comment BJ 22

Appendix D6, Hydrology, Attachment D6-8-F, The above mentioned comment can also be applied to the Carney well hydrographs. Please adjust the x axis to hours.

Response BJ 22

The hydrographs were originally set up with the x axis in days to allow the reader to review recovery data as well. Rather than modifying the original hydrographs, additional hydrographs, each of which depict the time axis in hours, were developed and included as pages D6-8-39a and D6-8-40a. These additional hydrographs detail the water level changes over the portion of the pumping test period where the water level changes in the wells were the most rapid.

Comment BJ 23

Appendix D6, Hydrology, Addendum D6-9, Pg. D6-9-2, Please include a column in Table D6-1 that indicates the elevation of the bottom of the well or TD. The total water column is important when assessing groundwater characteristics. Please correct.

Response BJ 23

Table D6-1 has been revised as requested.

Comment BJ 24

Appendix D6, Hydrology, Addendum D6-10, Pgs. D6-10-28 through D6-10-53, On the sample analysis reports, Please provide a brief narrative at the beginning of the lab results to give context to the data. Footnotes on the pages refer to MCLs or other parameters of water quality used for classification. However, the context that is used to define these parameters is missing. The assumption is made that these quality values are derived from the WQD R&R, Chapter 8, Table I definitions. But that is

uncertain as no frame of reference is given. A brief sentence or two at the beginning of the section would clarify the numerical standards used in the report. Please adjust the narrative accordingly.

Response BJ 24

Page D6-10-27a was added to provide the requested narrative.

Comment BJ 25

Appendix D6, Hydrology, Please include the lithology of the sampled zone, either in the sampling information sheets, or on the sample analysis reports. Identification of the lithology sampled needs to be readily available with the analysis. This applies to all increments sampled. The sampled zones do have identification on the sample sheets with a shorthand nomenclature but persons unfamiliar with the lithology of the prospect area would be at a disadvantage when evaluating the sample results. A simple reference table at the beginning of the section would be sufficient. For example; MST=Masters, CRN=Carney, AL=Alluvium. Non-geologists need some frame of reference. Please create a clarifying narrative.

Response BJ 25

Reference text with abbreviations defined has been added on page Addendum D6-10-27a, as requested.

Comment DM 2

Appendix D6-Hydrology, D6.1x – The drainage basin description and surface water quantity sections are lacking detail. As mentioned in M. Kunze's comments, the data from the terminated Slater Creek USGS gauge, and historical monitoring data from Big Horn Mine (permit no. 213) should be included.

The data collected at the monitoring stations that is presented in Addendum D6-4 does not appear to agree with the statement that Slater Creek is a "predominantly ephemeral" stream. Please reconcile the text with the data.

Response DM 2

Peak flow data from the USGS gage station on Slater Creek has been provided. See response to MK 30. The text in Section D6.1.5.2 has been updated to clearly indicate that Slater Creek is an ephemeral stream.

Comment DM 3

Appendix D6-Hydrology, D6.2.4 States that Groundwater Rights are in Appendix E2 of the Adjudication Volume. Groundwater Rights are actually listed in Appendix B2. Please Correct.

Response DM 3

Text revised as requested.

Comment KM 5

Appendix D6, 2. The pre-mining potentiometric map for the Masters coal seam shows the elevation of the groundwater at a higher elevation than the surface elevation in Sections 11 and 12 (in the vicinity of Slater Creek outside of the permit area). Either show the potentiometric surface as dotted across this area or revise the potentiometric lines such that the groundwater elevation is below the ground surface elevation. Issue addressed by BJ Kristiansen. Please see comment No. 65.

Response KM 5

Exhibits D6.2-2 and D6.2-3 have been revised as requested.

Comment KM 6

Appendix D6, 3. The groundwater elevation for the Carney coal seam in monitor well 578417-CRN was given as 3795.59. The potentiometric contour for 3800 is drawn south of this monitor well. Please correct the contour line to be consistent with the groundwater elevation shown for monitor well 578417-CRN. Correction of this contour line may also adjust how the contour lines for 3780 and 3760 are drawn, such that they may be drawn consistent with other contour lines.

Response KM 6

Contours in Exhibit D6.2-3 have been revised as requested.

Comment KM 7

Appendix D6, 4. Page D6 8-8: The text refers to the pump test in the Carney coal seam. According to the procedures in the previous section, transducers were placed in CRN and CRN-OB; however on the referenced page, it states transducers remained in MST and MST-OB after pumping. LQD believes this to be a typographical error.

Response KM 7

LQD is Correct, this is a typographical error. The sentence should read "After the pumping period, the transducers remained in CRN1 and CRN-OB until 8:00AM on November 16, 2013. Page D6-8-8 has been updated with the typographical error corrected and a replacement page is included.

Comment KM 8

Appendix D6, 5. Please discuss why the water levels rose in the Carney coal seam during the pump test in the Masters coal seam.

Response KM 8

This comment is addressed in comment 19 from Muthu Kuchanur.

Comment KM 9

Appendix D6, 6. What effect would a leaking pump have on the results of the pump test in the Masters coal seam?

Response KM 9

This comment is assumed to originate from the note on page Addendum D6-8-30. This note is in reference to activities that occurred immediately after the pumping test was shut off. The pump used for the pumping test did not have a foot valve. Therefore, after the pump was shut off, water in the discharge pipe immediately began to drain back into the well. The pump and piping was pulled out of the well as fast as possible and not all of the water in the pipe drained back into the well. However, the personnel conducting the pumping test were concerned that the water draining into the well would result in a rapid rise in the water level in the well and wanted to note it for the record on the field data sheet. It is estimated that less than 2 gallons of water actually drained out of the line into the well while the pump was being pulled which would result in a water level rise in the well of less than 0.25 foot. Given that the water level recovery in the well was very rapid immediately upon cessation of the pumping test (approximately 2 feet in the first ten minutes after the pumping test ended) and the early time recovery data was largely ignored for the purposes of doing the aquifer characterization evaluations, the leaking pump would not have had an impact on the results of the pumping test.

Comment KM 10

Appendix D6, 7. Please make sure all maps that are stamped are also signed and dated by the engineer, as required by regulation.

Response KM 10

All maps that are stamped will be signed and dated by the engineer as required by law. This does not include digital versions. The digital copies have been provided for WDEQ review. The hard copy is the official copy.

Comment MK 29

Appendix D6-Hydrology, Section D6.1.2 Drainage Basin Description, 3. On Page D6-2 it is stated that Slater Creek is an ephemeral stream. Aerial imagery shows a riparian area with trees and subirrigation occurring along much of the channel. PEM wetlands are also present as documented in Appendix D10. It would seem that an ephemeral stream may not be able to support these features. Please provide the justification why Slater Creek is considered an ephemeral stream, and that the stream does not contain

intermittent characteristics where it is not below the local water table for a portion of the year. (MDK)

Response MK 29

Please see response to DM2.

Comment MK 30

Appendix D6-Hydrology, Section D6.1.3.2 Flood Studies, 4. The USGS operated a peak flow gage on Slater Creek from 1967 to 1981 (Station No. 06299900, http://nwis.waterdata.usgs.gov/wy/nwis/inventory/?site_no=06299900&agency_cd=USGS). The gage was located just downstream of the proposed permit boundary near the confluence with the Tongue River. Please incorporate the annual peak flow data from this station into the permit application to illustrate the range of peak flows that might be expected from Slater Creek. (MDK)

Response MK 30

The text and Tables D6.1-2 and D6.1-3 have been revised to include peak flow data for USGS Station No. 06299900.

Comment MK 31

Appendix D6-Hydrology, Section D6.1.3.2 Flood Studies, 5. Some of the U.S. Army Corps of Engineers references cited in the text (2000, 2001) do not appear in the References Section (Section D6.3). Please add these to the references list. (MDK)

Response MK 31

The text edits have been made as requested.

Comment MK 32

Appendix D6-Hydrology, Section D6.1.3.2 Flood Studies, 6. Please add the year to the Miller reference within the text (2003) and add this citation to the references list in Section D6.3. (MDK)

Response MK 32

The text edits have been made as requested.

Comment MK 33

Appendix D6-Hydrology, Section D6.1.3.2 Flood Studies, 7. Please explain in the text if the existing impoundments (stock reservoirs, old mine pits, etc.) in both the Slater Creek and Hidden Water Creek drainages were considered in the routing functions for

the HEC-HMS runoff estimates. These features would likely have an effect on attenuating peak flows. (MDK)

Response MK 33

The text has been revised to clarify the impoundments are not included the HEC-HMS model. As described, peak flow estimates should be conservatively high without attenuation of storm events by impoundments.

Comment MK 34

Appendix D6-Hydrology, Section D6.1.3.2 Flood Studies, 8. As the text states on Page D6-5, the HEC-HMS runoff estimates in Table D6.1-7 are higher than the Miller (2003) equation estimates. Please provide a discussion in the text as to the reasonableness of the HEC-HMS estimates and why the HEC-HMS estimates are so much higher than the Miller (2003) equation estimates.

The Miller (2003) equation for this region used, in part, data from the USGS peak flow gage on Slater Creek, so it would seem that the Miller (2003) estimates may be more reasonable. For example, compared to the HEC-HMS estimates, the 15-year record from the peak flow gage on Slater Creek would not register at anything greater than a five-year event. Furthermore, the May 18, 1978 event on Slater Creek resulted in a peak flow of 1,100 cfs, which according to the HEC-HMS estimates would only be around a 2-year event. USGS studies have shown that the May 1978 flood event was estimated to be a 100-year event on some parts of the Tongue River in this area (<http://pubs.usgs.gov/pp/1244/report.pdf>). (MDK)

Response MK 34

A discussion in the text has been included that speaks to why the HEC-HMS results are higher than the Miller results. Additionally, a discussion acknowledges the report by the USGS on the May 1978 flood. The Miller analysis does appear to more closely estimate the peak flowrates for flood events for the short data record on Slater Creek. However, hydraulic calculations will continue to use the HEC-HMS results because of the conservative results and the ease in comparing to the postmining hydrologic environment. HEC-HMS provides a way to change the properties of the drainage basins to reflect what will be present postmining, and the comparison between the premining and postmining HEC-HMS models quantifies the magnitude of the impact the Brook Mine will have on the hydrologic balance.

Comment MK 35

Appendix D6-Hydrology, Section D6.1.5.1 Monitoring Stations, 9. Please add the northing/easting State Plane coordinates for the four Brook Mine surface water monitoring stations to Table D6.1-11. (MDK)

Response MK 35

The locations of the surface water monitoring sites have been reported to the quarter-quarter, which is an adequate level of accuracy to report the monitoring locations.

Comment MK 36

Appendix D6-Hydrology, Section D6.1.5.1 Monitoring Stations, 10. On Page D6-8, it is not necessary to mention the State of Montana water quality classifications of the Tongue River, as only State of Wyoming classifications and standards would apply. Please remove reference to the Montana standards. (MDK)

Response MK 36

The text has been revised as requested.

Comment MK 37

Appendix D6-Hydrology, Section D6.1.5.1 Monitoring Stations, 11. On Page D6-8, second paragraph, it states that increased E.Coli from samples collected in 2006 were attributable to high flows in May-June 2010. Were the samples also collected in 2010 and not 2006? Please revise this sentence. (MDK)

Response MK 37

The sentence was revised to read more clearly. The sentence was saying that samples taken in 2010 experienced an increase in E.Coli bacteria compared to the samples collected in 2006.

Comment MK 38

Appendix D6-Hydrology, Section D6.1.5.1 Monitoring Stations, 12. On Page D6-8, second paragraph, it would be informative to add that, in addition to the SCCD, other entities such as the Big Horn Mine, USGS, and WDEQ/WQD have collected water quality data on the Tongue River and Goose Creek near the proposed mine. It may also be informative to mention that sections of the Tongue River in the vicinity of the proposed mine are on the State's 303(d) list since certain uses are not supported due to impaired water quality. Goose Creek has also been on the 303(d) list in the past and a TMDL has been prepared. Information can be found at: <http://deq.wyoming.gov/wqd/water-quality-assessment/resources/reports/> and <http://deq.wyoming.gov/wqd/tmdl/>. (MDK)

Response MK 38

The text has been revised as requested. Refer to Section D6.1.5.1.

Comment MK 39

Appendix D6-Hydrology, Section D6.1.5.2 Surface Water Quantity, 13. The Big Horn Mine (WDEQ/LQD Permit 213) operated a station on Hidden Water Creek (HWC1-79) from 1979 to 1998. This station was located approximately ¼ mile upstream from station SM578415-SW-1 that was installed by the Brook Mine. The LQD Hydrology Database contains mean daily flow data from this station from 1982 to 1997, although several years are missing data. Baseline water quantity characterization of Hidden Water Creek in the Brook Mine permit application would be strengthened if these data were incorporated and discussed. The LQD can provide these data in electronic format upon request or a more complete dataset may be available if requested from the Big Horn Mine. (MDK)

Response MK 39

Please see response to DM 2 and MK 30.

Comment MK 40

Appendix D6-Hydrology, Section D6.1.5.3 Surface Water Quality, 14. Please briefly discuss in the text the water quality results from Slater Creek in the context of WQD Surface Water Quality Standards for Class 3B waters (see Chapter 1 of WQD Rules and Regulations). This would reveal whether or not designated uses were being met prior to mining. The two samples from Slater Creek indicate no exceedences of Class 3B criteria, indicating uses are supported. (MDK)

Response MK 40

The text has been updated as requested.

Comment MK 41

Appendix D6-Hydrology, Section D6.1.5.3 Surface Water Quality, 15. It is understood that water was not flowing in Hidden Water Creek so the applicant could not collect a sample for baseline purposes. However, as previously mentioned, the Big Horn Mine operated a station on Hidden Water Creek (HWC1-79) from 1979 to 1998. The LQD Hydrology Database contains nine water quality samples collected at this site from 1979 to 1989. Baseline characterization of Hidden Water Creek in the Brook Mine permit application would be strengthened if these data were incorporated and discussed. The LQD can provide these data in electronic format upon request. (MDK)

Response MK 41

Request for information is pending. No update to the permit has occurred at this time in response to this comment.

Comment MK 42

Appendix D6-Hydrology, Section D6.1.5.4 Sediment Transport, 16. This section would be enhanced by including data from a single sediment sample collected on Slater Creek at USGS Station No. 06299900 (peak flow gage previously discussed in Comment No. 4). This sample was collected in June 1967 at a flow of 18 cfs. The TSS was 11,600 mg/L and the suspended sediment discharge was 564 tons/day. (MDK)

Response MK 42

The text has been revised to include the additional sediment sample as requested.

Comment MK 43

Appendix D6-Hydrology, Addendum D6-5 – Rating Curves, 17. A rating curve developed using only the Manning equation will provide only a rough estimate of flows given the uncertainty in the Manning's roughness coefficient. It is recommended that direct discharge measurements also be taken over time to help evaluate the rating curves developed for the four monitoring sites. (MDK)

Response MK 43

The rating curves were developed for ephemeral streams that flow infrequently enough that water measurements cannot be taken at regular intervals. Manning's equation provides a reasonable and widely accepted mathematic approximation of stream flow rates.

Comment MK 44

Appendix D6-Hydrology, Addendum D6-5 – Rating Curves, 18. Given the uncertainty in the Manning equation, the estimated flow rates provided in Table D6-3 and Attachment D6-5-A (Rating Tables) are reported at much too high a level of precision to be meaningful. Depending on the magnitude of the flow estimate, there should be only one or two significant figures provided. For example, 0.29 cfs = 0.3 cfs and 3,584.38 cfs = 3,600 cfs. Please revise these tables. (MDK)

Response MK 44

Summary Table D6-3 has been revised to engineering precision (no more than three significant figures). The values in Attachment D6-5-A are essentially raw data that are being reported to that magnitude to show the validity of calculations and to aid in curve development. Being raw data, the values were not revised from those previously reported.

Comment Muk 9

Appendix D6, Section D6.2.1 Regional Hydrogeology, 9. Page D6-12 states, "The potential groundwater in the formation as capable of yielding small quantities of water

for domestic and stock use”. Please consider providing a range of estimates for well yields based on literature review or from the baseline data collected by the Brook Mine. (MK)

Response Muk 9

The text has been revised to indicate that coal is the only regional shallow aquifer that has a sufficient quantity of water to support domestic and stock use.

Comment Muk 10

Appendix D6, Section D6.2.1 Regional Hydrogeology, 10. The description in this section discusses only about the Fort Union formation. Please provide a description of the overlying and underlying water-bearing formations (aquifers) and describe their hydrogeologic characteristics (flow direction, gradients, aquifer properties, general outcrop locations) on a regional context. It is noted that some of the overlying formations may be dry or discontinuous within the mine permit boundary. (MK)

Response Muk 10

Section D6.2.1 has been updated as requested.

Comment Muk 11

Appendix D6, Section D6.2.1 Regional Hydrogeology, 11. Page D6-12 states, “The overburden is comprised of sand lenses, clinker and alluvial that have the potential of water bearing bodies. Due to the topography in this area, the valley cut through these deposits. Therefore, they are discontinuous and would not hold large quantities of water.” It is noted that they are discontinuous and would not hold large quantities of water. Please provide additional justification for this statement by using the hydrogeologic data collected by the Brook Mine including any reference to the interpreted extent of dry zones based on drill holes, monitor wells and other applicable data. (MK)

Response Muk 11

Section D6.2.1.1 has been updated as requested.

Comment Muk 12

Appendix D6, Section D6.2.1 Regional Hydrogeology, 12. Please clarify if there were groundwater springs or seeps observed in the areas within or adjacent to the mine permit boundary. Include a discussion (or reference) on the surface water - groundwater interactions.(MK)

Response Muk 12

Section D6.2.2.5 has been updated as requested.

Comment Muk 13

Appendix D6, Section D6.2.2.1 Monitor Well Construction, Completion and Development, 13. Page D6-13 states, “No monitoring wells were completed in the overburden or interburden as no water was found in these units during drilling operations”. This information is critical in demonstrating the overlying units are dry. Therefore, for better documentation, please provide (or reference) a map with all the drill holes (both overburden and interburden) and their depths that were used to make this determination. (MK)

Response Muk 13

Section D6.2.2.1 has been updated as requested.

Comment Muk 14

Appendix D6, Section D6.2.2.1 Monitor Well Construction, Completion and Development, 14. Page D6-13 states, “Also one well 578409-MST-UB showed the presence of water in the underburden, while all the other wells drilled into the underburden were dry and therefore not completed as wells.” Similar to the previous comment, this information is critical in demonstrating the underlying units are dry. Therefore, for better documentation, please provide (or reference) a map with all the drill holes (underburden) and their depths that were used to make this determination. (MK)

Response Muk 14

Please see response to Muk 13.

Comment Muk 15

Appendix D6, Section D6.2.2.2 Aquifer Tests, 15. Page D6-15 states, “Alluvial materials were also not analyzed during the aquifer testing.” The alluvial aquifer materials are one of the key factors in determining any impacts caused by mining to the alluvial aquifer. Alluvial aquifer tests will be helpful in understanding any surface water – groundwater interactions. Please provide justification for not conducting any aquifer tests in the alluvial wells. (MK)

Response Muk 15

The text in Section D6.2.2.2 has been updated.

Comment Muk 16

Appendix D6, Section D6.2.2.2 Aquifer Tests, 16. Please provide justification for not observing the groundwater level responses in the alluvial aquifer during the two aquifer tests conducted by Brook mine. (MK)

Response Muk 16

No alluvial material was present in immediate vicinity of the clusters used for the pumping tests, hence there was no alluvial aquifer to monitor. Hidden water creek located to the east of the tested well cluster would be potentially the nearest location of alluvial material, however as noted in Appendix D11 the fill material in Hidden Water Creek is more colluvial than alluvial.

In addition, as shown on the well completion summary logs in Addendum D6-7, multiple claystone intervals are located between the Carney Coal and the surface at the well cluster where the pumping tests were conducted. The top of the Carney Coal is approximately 90 feet below ground surface at the cluster well location which is approximately 50 feet below the level of any colluvial/alluvial deposits in Hidden Water Creek. Similarly, the potentiometric head in the Carney coal is some 50 feet below the level of the colluvial/alluvial deposits in Hidden Water Creek and if there were a direct hydraulic connection, there would be no water in the Hidden Water Creek colluvium/alluvium. Given the confining intervals between and the significant difference in potentiometric head between the Carney Coal and the Hidden Water Creek colluvium/alluvium, additional shallow monitoring above the Carney Coal was not necessary.

Comment Muk 17

Appendix D6, Section D6.2.2.2 Aquifer Tests, 17. Page D6-16 states, "A report of these tests can be found in Addendum D6-8 and summary tabulation of the aquifer test results is included in Table D6.2.2". Please consider including a comparison of these estimated aquifer properties with the aquifer tests conducted in other similar coal seams in the Powder River Basin (Example: Bighorn Mine). Given the number of tests conducted by the mine, this will increase the robustness of the reported estimates from the two aquifer tests. (MK)

Response Muk 17

As requested aquifer test results from Big Horn Coal Company and from the Youngs Creek Mine were added to the text.

Comment Muk 18

Appendix D6, Section D6.2.2.2 Aquifer Tests, It is noted that the aquifer tests were conducted for ~640 minutes. Will an increased aquifer test duration change the observed lack of interaction between the coal seams and the underburden? Please clarify with a brief description. (MK)

Response Muk 18

Given the head differences between the static water levels in the Carney Coal, Masters Coal, and the underburden it is unlikely that additional pumping would have resulted

in any impacts to the water levels in the underburden. As shown on Table D6-2, (page Addendum D6-8-13) the initial water level in the Carney Coal was approximately 11.5 feet higher than the water level in the Masters Coal and the initial water level in the Masters Coal was approximately 9 feet higher than the initial water level in the underburden well. If there were a hydrologic connection between the aquifers, it is likely that the water levels in the aquifers would have already come into equilibrium.

Comment Muk 19

Appendix D6, Section D6.2.2.2 Aquifer Tests, 19. The referenced Addendum D6-8, Table D6-2 shows an increase in water levels in two of the Carney coal seam observation wells during the Masters coal seam well pumping test. Please provide an explanation for this increase in water levels during the aquifer test. (Noordbergum effect?). (MK)

Response Muk 19

Upon review of the raw data collected during the pumping test it was noted that the drawdowns reported in Tables D6-2 and D6-3 were incorrectly reported. Replacement tables are included with this round of comment responses. As shown on the updated version of Table D6-2, the water level in both Carney observation wells (CRN-1 and CRN-OB) increased by 0.23 feet during the Masters coal pumping test. While the Noordbergum effect or other natural phenomena such as earth tides could have potentially influenced the water levels in adjacent aquifers during the pumping test, the increase in water levels can be largely attributed to barometric pressure changes. Water levels in the Carney observation wells were monitored using hand held electric lines and there were no adjustments for barometric pressure reported in Table D6-2. No site specific barometric data was collected during the pumping test period. However, to evaluate how barometric pressure changes may have impacted water levels in the wells, barometric data from the automatic weather observing station (AWOS) at the Sheridan County airport was obtained from the National Oceanic and Atmospheric Administration (NOAA) database. Barometric data from the Sheridan County Airport AWOS site was compared to water level measurements in Attachment D6-8-K. The data in Attachment D6-8-K demonstrates a clear correlation between barometric pressure and water level variations in the Carney coal monitor wells during the Masters coal pumping test. Generally over the course of the Masters coal pumping test the barometric pressure went down (roughly 0.31 feet). A decrease in the barometric pressure is expected to result in an increase in water levels in a confined aquifer like the Carney coal aquifer which is what was observed.

Similar increases in water levels were also noted in the Masters Coal observation wells (MST-1 and MST-OB) during the Carney pumping test as noted on Table D6-3. Attachment D6-8-K demonstrates a clear correlation between decreasing barometric pressure and rising water levels in the Masters coal observation wells during the Carney Pumping test. In addition, during the Carney coal pumping test, water levels

in the Masters coal observation wells were still recovering from drawdowns induced during the Masters coal pumping test which may also have contributed to rising water levels in the Masters coal. The increase in water level measured in the Masters coal observation wells is attributed to a combination of continuing water level recovery and barometric effects.

Only very minor water level variations in the Masters underburden well (MST-UB) were noted during both pumping tests. As shown on the well completion form in Addendum D6-7, (Page D6-7-8) MST-UB was completed in an interval that was predominately claystone and the estimated yield is less than 2 gpm. Essentially the strata in which MST-UB is completed is more of an aquitard than an aquifer. As a result, it takes a lot longer for the water levels in the well to adjust to changing atmospheric pressure because water does not enter or discharge from the formation very fast. The lack of barometric responses in the MST-UB are attributed to the fact that the low yielding aquitard in which the well is completed has a lower barometric efficiency than the wells completed in the coal aquifers.

Vented transducers utilized to monitor water levels in the both the pumping and adjacent monitor wells during each pumping test, automatically compensated for the barometric pressure effects. Therefore, barometric pressure effects did not affect the aquifer analyses that were developed based on the pumping test data.

Comment Muk 20

Appendix D6, Section D6.2.2.2 Aquifer Tests, 20. Please provide a discussion (or reference) on the role of faults in the results of aquifer tests. (MK)

Response Muk 20

As noted in Addendum D6-8, (page D6-8-9) no hydrologic boundary conditions were observed in the pumping test data. As can be seen on Exhibit D6.2-2, the 578409 well cluster is located approximately 2,100 feet south and east of the nearest mapped fault. Since neither the Carney nor the Masters coal seams are very robust aquifers and have low transmissivity values, it is not surprising that the fault would not influence the pumping test results. For example, using Theis drawdown equations and the aquifer characteristics measured in the Masters coal (transmissivity of 3.2 ft²/day, storativity of 0.00025, and a pumping rate of 0.5 gpm) it is estimated that it would take over 70 days of continuous pumping for a water level response greater than 0.5ft to be observed 2,000 feet away. Therefore the likelihood that the faults would have influenced the pumping test results is very low.

Comment Muk 21

Appendix D6, Section D6.2.2.4 Premining Potentiometric Surface, 21. Please provide some additional discussion on the premining potentiometric surface maps, including

ranges of estimated hydraulic gradients and groundwater velocity in the different coal seams/aquifers. (MK)

Response Muk 21

As requested, additional discussion on the hydraulic gradients and groundwater velocity in the coal seams were added to Section D6.2.2.4.

Comment Muk 22

Appendix D6, Section D6.2.2.4 Premining Potentiometric Surface, 22. Please provide a discussion (or reference) on the hydrologic effects of any adjacent operations (including past coal mining activity by historic mines and Bighorn mine) on the premining information and data. (MK)

Response Muk 22

The last paragraph in Section D6.2.2.4 describes how CBNG production has affected water levels in the eastern side of the permit area. The drawdowns resulting from CBNG production have occurred since any historic coal mining activity and have superseded any drawdowns that may have occurred due to historic mining. Therefore, no lingering hydrologic effects from past coal mining activities are present. The text in the last paragraph in Section D6.2.2.4 has been updated to describe how CBNG impacts have superseded any impacts from historic coal mining activities.

Comment Muk 23

Appendix D6, Section D6.2.2.5 Recharge and Discharge Areas, 23. This section provides a good discussion on the recharge areas. However, please clarify if there are any discharges from the coal seams within the permit boundary. (MK)

Response Muk 23

Within the permit boundary there are no discharges from the coal seams with the possible exception of the Carney coal on the far west side of the permit area. As shown on Exhibit D6.2-3, the Carney coal outcrops in the far western side of the permit area along the ridge tops but has been eroded away in the stream valleys. As a result, the Carney coal is perched with no real source of recharge and is generally dry. However, on the down dip side of the outcrop the coal may discharge within the permit if there is water in the coal seam to discharge. As shown on Figures MP-3-4.7-1 and MP-3-4.7-2 it was determined during the groundwater modeling efforts that most of the Carney coal within the far western side of the permit area was dry. Therefore, there is minimal (if any) discharge from the Carney coal within the permit area. Section D6.2.2.5 has been updated to clarify where discharges from coal seams may occur within the permit boundary.

Comment Muk 24

Appendix D6, Section D6.2.2.5 Recharge and Discharge Areas, 24. Please provide a range of estimates for recharge from precipitation to the aquifers within the permit boundary. Also, provide a discussion if this is the primary recharge mechanism for the aquifers within the permit boundary. (MK)

Response Muk 24

The estimated recharge rates from precipitation are summarized in Section 4.2.2 of Addendum MP-3. Addendum MP-3 describes recharge within the permit area in more detail than Section D6.2.2.5. A reference to MP-3 was added in Section D6.2.2.5.

Comment Muk 25

Appendix D6, Section D6.2.2.5 Recharge and Discharge Areas, 25. Consider providing a description of the soil properties within the permit boundary and the use of these percent soil distributions in the discussion of infiltration within the permit boundary. (MK)

Response Muk 25

The soil properties within the permit boundary are described in detail within Appendix D7. While different soil types are expected to have variable infiltration rates, the only infiltration rate that is significant for the coal aquifers is the infiltration rate assigned to the strata near the outcrop of the coal seams. Throughout the permit area the strata overlying the coal aquifer are generally dry. Therefore the primary source of recharge occurs at the outcrops. Scoria, in particular, plays a significant role in recharge of the coal seams because it usually occurs near the coal outcrop. Because of its highly permeable characteristics most of the precipitation that falls on the scoria infiltrates into the scoria where it either infiltrates into the coal or discharges along a seep line at the base of the scoria. As noted in the response to BJ Kristiansen's comment number 57, ash material between the base of the scoria and the coal seams sometimes limits how much of the water in the scoria actually comes into direct contact with the coal. Nevertheless, because a large percentage of precipitation falling on the scoria actually infiltrates into it, the scoria does provide a consistent water source for recharge into the coal outcrops. As noted in Addendum MP-3 Section 4.2.2 the scoria areas were delineated and assigned their own recharge zone because they do play a significant role in recharging the coal seams. Within the permit area, there are several locations where the coal seams outcrop as well. These outcrop areas were also assigned their own recharge zone because they also have a hydrologic connection to the coals. Since the strata overlying the coal seams to be mined in the Brook Mine are generally dry, the recharge component from the overburden to the coal is very low away from the outcrop areas. Because of the limited hydrologic interaction between

the recharge at the surface and the coal in areas away from the outcrop, site specific changes in the recharge rates based on soil type will not impact the coal aquifers. For this reason additional analysis of the infiltration properties of the soils within the permit area represents a level of detail that is not necessary to describe the hydrologic impacts to the coal aquifers from the proposed mining operations.

Comment Muk 26

Appendix D6, Section D6.2.2.5 Recharge and Discharge Areas, 26. Page D6-18 states, “Collected groundwater elevation and hydrographs of the groundwater wells are found in Addendum D6-8”. Please revise this statement to reference the correct addendum - Addendum D6-9. (MK)

Response Muk 26

The text has been updated to read "Collected groundwater elevation and hydrographs of the groundwater wells are found in Addendum D6-9".

Comment Muk 27

Appendix D6, Section D6.2.3 Baseline Water Quality, 27. Page D6-20 states, “A piper diagram of the groundwater wells with measured values is presented in Figure D6.2-1. Please provide a discussion on the water quality types observed at each aquifer (Example: Is the water quality type variable within an aquifer? If yes, explain the potential reasons for this observed variability) based on the piper diagram. (MK)

Response Muk 27

Section D6.2.3 has been updated as requested.

Comment Muk 28

Appendix D6, Section D6.2.3 Baseline Water Quality, 28. Page D6-20 states, “The constituents that most frequently exceed the standard concentration limitations are ammonia, TDS, sulfate and manganese”. Please clarify if these constituents exceed the Chapter 8 standards at all the monitor wells. (MK)

Response Muk 28

Please refer to the Tables D6.2-8 thru D6.2-17 for exceedances of water quality based on Chapter 8 standards. Based on the tables, the concentrations are not exceeded at all monitor wells. No text edits were made in response to this comment.

Comment Muk 29

Appendix D6, Section D6.2.4 Groundwater Rights, 29. Page D6-20 states, “Adjacent and on-site groundwater rights are listed in Appendix E2 in the Adjudication Volume.” Cheyenne copy of the TFN does not have a sheet separator and a tab for Appendix E2 in the Adjudication volume. Please provide a sheet separator and tab for Appendix E2. (MK)

Response Muk 29

Refer to Comment DM3. Groundwater rights are provided in Appendix B of the Adjudication Volume. This text edit has been made in Section D6.2.4.

Comment Muk 30

Appendix D6, Section D6.2.4 Groundwater Rights, 30. Page D6-20 states, “Adjacent and on-site groundwater rights are listed in Appendix E2 in the Adjudication Volume.” Please provide a summary discussion/statistics on (i) total number of water rights, (ii) number of wells, (iii) aquifer, (iv) permitted water use and other relevant summary statistics. (MK)

Response Muk 30

Groundwater rights are listed in Appendix B of the Adjudication Volume. All of the aforementioned information is listed for each water right. Due to the constantly changing nature of water rights, a summary table is difficult to construct, and due to summary statistics not being required by WDEQ regulation, a summary statistics table has not been prepared.

Comment Muk 31

Appendix D6, Section D6.2.4 Groundwater Rights, 31. Please provide a discussion (or reference) on the premine groundwater use (including the uses reported to SEO) within the permit boundary and the adjacent areas. (MK)

Response Muk 31

The premine groundwater uses as reported to the SEO within the permit boundary and the adjacent 3 miles are listed with each individual water right in Appendix B of the Adjudication Volume.

Appendix D7

Comment DS 6

Appendix D7, Exhibit D7.3.-1 was compared with Exhibit MP.1-1. As required, it appears that the soil sampling was concentrated in areas where surface disturbance is to be expected. Please provide the contour interval on the soils map. For ease of review and to prevent misinterpretation, however, the map showing sampling locations should also clearly show the locations of proposed surface disturbances instead of providing these details on separate maps which may or may not present differing scale distances.

Response DS 6

The disturbance boundary can be found on Figure D7.1-1 and as the reviewer noted on Exhibit MP.1-1. No revision to exhibit D7.3-1 has occurred in response to this comment.

Comment DS 7

Appendix D7, Page D7-4. The second paragraph of this page contains text that should be deleted. It states "If for whatever reason overall sampling intensity.....was determined to not be enough, it is proposed that any additional sampling be deferred and included a stipulation of a future pre-stripping soil assessment program." The Mine Plan and Reclamation Plan soils handling and replacement is contingent on adequate baseline sampling of the proposed area that will be affected by mining operations (topsoil balance and stockpile location planning and bond calculation). Therefore, baseline sampling for soils must be adequate prior to approval of any permit application. Please remove the inappropriate language from the Appendix D7 text. If future changes to the Mine Plan require additional soil sampling the issue will be addressed at that time.

Response DS 7

As requested, the second sentence of the second paragraph on page D7-4 has been deleted.

Comment DS 8

Appendix D7, Page D7-9. Text appears in this section that upon NRCS declaration of prime farmlands occurring in the permit area, a letter will be provided to the DEQ. A letter from the NRCS has been received and inserted in the permit declaring no prime farmlands to exist. The text, therefore, is not appropriate and should be removed.

Response DS 8

As requested, the sentence about prime farmland (the last sentence of the first full paragraph on page D7-9) has been deleted. A new reference, citing the letter received

on October 31, 2015 (negative determination of prime farmland on Ramaco permit area) has been inserted on page D7-9 and the new reference has been added to the list of references on page D7-33.

Comment DS 9

Appendix D7, WS § 35-11-415(b)(iii) and the Coal Rules, Chapter 4, Section (c)(ix) state that if topsoil is virtually nonexistent or is not capable of sustaining vegetation then subsoil or a selected spoil material may be used as a topsoil or subsoil supplement. Additionally, due to the proximity of this mine to the Tongue River, a Class 2AB stream, limits for chemical contaminants will be imposed on discharges from the permit. Therefore, for areas where unsuitable or marginal topsoil chemistry is located (e.g. Wibaux channery loam, sample R13), an alternative soil replacement material should be identified and used in reclamation. Such a commitment must also be provided in the Mine Plan and Reclamation Plan to provide evidence that such issues that could affect the condition of reclamation and/or lead to off-site impacts will be addressed.

Response DS 9

No “alternate soil replacement material” is necessary for areas of Wibaux channery loam (Map Unit Wx). The lower soil material below 8 inches of Wibaux (any “C” horizon soil substratum below 8 inches, where existent) was not recommended for salvage and would be grouped with the overburden spoil for placement purposes. This lower material had an excessive volume of hard coarse fragments (>35%) and, based on one of the three Wibaux sample sites (R13), an “unsuitable” EC and SAR value for the 8 to 15 inch depth, EC=12.8 and SAR=17.3. Two new sentences, indicating no soil salvage of Wibaux below 8 inches in depth, has been added to the soils report on page D7-26, one sentence each for Map Unit Wx and Map Unit Wx-RO. Furthermore, the amount of suitable soil available for salvage across the entire proposed disturbance area is not limiting, with a calculated weight-average of 20.2 inches. Therefore, additional “alternate soil replacement material” is not necessary.

Comment DS 10

Appendix D7, The description of Map Unit G (Bauxson Loam, sample R-19) does not show marginal selenium that occurs between 22 – 48 inch depth range which could affect the salvage depth and may require special handling of the marginally suitable subsoil.

Response DS 10

Two new sentences have been added to the last paragraph on page D7-21 stating the presence of “marginal” rated Selenium values for lower material of Bauxson loam (Map Unit G) sample site R19. Strictly speaking, “marginal” rated soil material is not

“unsuitable” and does not need to be specially handled. This lower Bauxson material has been recommended for salvage as “Subsoil”, not “Topsoil”.

Appendix D8

Comment JJ 1

Appendix D8, 1. Please update the permit boundaries so that they are the same on Exhibit D8. 2-1 and Addendum D8 Map 1. I note specifically that lands should not be included within the permit boundary south of the interstate and that Section 10 TWN57N RNG85W displays different boundaries along the far west edge of the permit; it appears that the section lines are skewed between the two maps. The Addendum D8 Map 1 also is missing a sizeable amount of lands located in Section 21 TWN54N RNG84W which are included within the permit boundary of the Adjudication Exhibit 1 map. While comparing the maps I find that the maps display the same information in slightly different formats, please explain the necessity for two individual maps and at a minimum make them consistent against one another.

Response JJ 1

Baseline vegetation assessment maps have been updated to include the correct permit boundary. The discrepancy in the permit boundary is attributed to the difference in graphical representation between a USGS quad system and a PLSS system. The USGS quad system is now depicted. Exhibit D8.2-1 is a summary map for this Appendix and future updates made to this Appendix. This map will change throughout the life of the mine as future changes are incorporated. Addendum D8 Map 1 is for this Addendum and will not change throughout the life of the mine.

Comment JJ 2

Appendix D8, 2. Why does the study area not include all lands within the proposed permit boundary?

Response JJ 2

Portions of the proposed Brook Mine permit area not included within the study area were added during an October 2014 permit boundary change following completion of the baseline vegetation study. Additional studies were not conducted in these areas due to the limited size and similarity to areas within the study area. Section D8-1.1, page D8-1-5 text has been updated to explain the exclusion of these areas.

Comment JJ 3

Appendix D8, 3. The acreage displayed on Table D8.2-1 should equal that of the land permitted on the Form 11. The Form 11 displays 4,548.8 acres while the table shows 4,581.7 acres a difference of 32.9 acres. Please update either the Form 11 or Table

D8.2-1 to show the true permit acreage as it relates to the vegetation communities. Upon further review I find that Table D8-2 located on page Addendum D8-1-41 exhibits the proper acreages in relation to the Form 11, thus the values represented there may be more accurately displayed in Table D8.2-1.

Response JJ 3

Total acreage of the permit area is 4,548.8 acres as illustrated in Form 11 and Table D8-2. Table D8.2-1 has been updated to reflect the correct acreage.

Comment JJ 4

Appendix D8, 4. Table D8.2-1 states there are 56 acres of agricultural lands; however, I am unable to locate Agricultural lands north of the interstate. Please, discuss and edit the values to display true acreages in relation to the proposed permit boundary. (See comment 3 for more clarification and another table for utilization to update values.)

Response JJ 4

Agricultural Lands within the permit area total 4.5 acres and are located in Section 21 TWN54N RNG84W. Table D8.2-1 has been updated to reflect the correct acreage of Agricultural Lands and other vegetation communities within the permit boundary.

Comment SP 3

Appendix D-8 Vegetation Baseline, Page D8-3. Section D8.1.7. Guideline 2 is a non coal guideline. Please revise this sentence to reference the equation shown in Section D8-1.2.9 Sample Adequacy.

Response SP 3

Changed as requested. Additionally, Appendix D8 reference to Guideline 2 was replaced by reference for Chapter 2 in Section D8.1.1, page D8-1 and Section D8.3, page D8-4. Addendum D8 reference to Guideline 2 was replaced by reference for Chapter 2 in Section D8-1.2, page D8-1-5 and Section D8-1.9, page D8-1-38. Reference to Guideline 2 was removed from Section D8-1.2.9, page D8-1-12.

Comment SP 4

Appendix D-8 Vegetation Baseline, Page D8-4. Section D8.1.8. Please revise the second sentence to, "The EXREFA is all of the unaffected area for each native vegetation community."

Response SP 4

Changed as requested.

Comment SP 5

Appendix D-8 Vegetation Baseline, Page D8-1-8. Section D8-1.2.4. The last sentence in this section states that no sample locations occurred within the Brook Mine Permit Area. AG-13, 14, 17 and 25 are shown on Addendum: D8, Map 1 inside the permit area. Please correct this statement or the permit boundary on the Map.

Response SP 5

Baseline vegetation assessment maps have been updated to include correct permit boundary which illustrates AG-13, 14, 17, and 25 are not located within the permit boundary.

Comment SP 6

Appendix D-8 Vegetation Baseline, Page D8-1-11. Section D8-1.2.8. The last sentence of the first paragraph should be revised to, "Sample adequacy was not required for species diversity and composition."

Response SP 6

Changed as requested.

Appendix D9**Comment DM 4**

Appendix D9-Wildlife, Page D9-3 states that when a sage grouse confirmation letter is provided by WG&F, it will be provided to DEQ. It appears that the confirmation letter is already part of the package (Page D9-E3). Please reference the location of the letter.

Response DM 4

Page D9-3 was revised to reference Page D9-E3 as the location of the letter.

Comment WGF 1

(Appendix D9) , We recommend this report become part of the annual reporting which will ensue throughout the operation of the mine.

Response WGF 1

Discussion was added at the end of Addendum D9-1 Section D9-1.6 on Page Addendum D9-1-31 titled "Monitoring and Mitigation" that references the sections of the Mine Plan where the annual wildlife report commitments are contained.

Comment WGF 2

(Appendix D9), We suggest coordinating with the USFWS regarding raptor mitigation as needed through the mining process.

Response WGF 2

The commitments to coordinate with the USFWS regarding raptors as well as T&E and other species of federal concern are provided in Section MP.18, Addendum MP-8 and Addendum MP-9 of the Mine Plan. Discussion was added at the end of Addendum D9-1 Section D9-1.6 on Page Addendum D9-1-31 titled “Monitoring and Mitigation” that references these discussions.

Comment WGF 3

(Appendix D9), We recommend mining reclamation practices consider providing suitable habitat for existing wildlife within the specifications required by DEQ-LQD.

Response WGF 3

The commitments to reclaim wildlife habitats are provided in the Reclamation Plan in Section RP.7 Wildlife Restoration. Discussion was added at the end of Addendum D9 - 1 Section D9-1.6 on Page Addendum D9-1-31 titled “Monitoring and Mitigation” that references the Reclamation Plan.

Appendix D10

Comment BJ 63

EXHIBITS, Addendum D10, The permit boundary layer on all of the exhibits covering the aquatic resource boundaries is incorrect. Please correct the permit boundary layers.

Response BJ 63

Aquatic resource inventory maps have been updated to include the correct permit boundary.

Comment DM 5

Appendix D10-Wetlands, D10-1.4 – Please include a copy of the letter requesting concurrence and jurisdictional determination sent to the ACOE At the end of the text, and reference the letter in the text.

Response DM 5

BKS Environmental Associates, Inc., on behalf of RAMACO, requested concurrence and jurisdictional determination from the USACE on May 29, 2015. A copy of the

letter sent to the USACE has been included as Attachment D10-F. Section D10-4, page D10-10 text has been updated to reflect submittal of USACE request.

Comment MK 45

Appendix D10-Wetlands, Section D10.2 Results, 19. The text may want to state when (what date) RAMACO requested the jurisdictional determination from the USACE, and include this request letter as an Addendum to Appendix D10. This would provide documentation that the request was submitted, as receipt of the USACE determination may lag behind the LQD permitting process. (MDK)

Response MK 45

See response to DM5.

Appendix D11

Comment BJ 26

Appendix D11, Alluvial Valley Floor, Section D11.1, RAMACO has requested LQD to make a determination on the nature of the drainages as potential AVF within the permit boundary as well as within ½ mile of the permit boundary. This would then entail analysis of the following drainages (distances are approximations): • Hidden water Creek – all (4 mi.)

- East Fork Earley Creek – lower 1 mile
- Slater Creek – lower 3 miles
- Tongue River – ½ mi. east of Interstate 90 and 4 mi. west of Interstate 90 at the Acme exit.

Prior to such a declaration, LQD staff will have to perform a variety of assessments designed to assist us in making a declarative statement about AVF classification. An AVF declaration will be made after in-depth study of the drainages. Such investigation will consist of, but not be limited to:

1. Field evaluation of the geomorphic and lithologic character of the drainages in question;
2. Determination of the agricultural characteristics of the stream course;
3. Examination of available bore hole logs that can be used to characterize the subsurface materials beneath the valley floor;
4. Determination of groundwater and surface water characteristics, both quantitative and qualitative, within the drainages in question;

5. Other evaluation processes that may be deemed necessary should initial findings warrant further, in-depth analyses.

Response BJ 26

Revised D11 text throughout to expand discussion on the drainages mentioned above. Incorporated previous AVF studies into Appendix D11. Information satisfying each statement can be found in the following locations as well as many other locations throughout the document:

1. Borehole logs provided in Addendum D11-3. Hidden Water Creek test pits dug by Big Horn Mine and discussed in Section D11.3 “Stream Laid Deposits.”
2. Agricultural characteristics of the stream courses are discussed in Sections D11.4.2, D11.4.3, and D11.5, in particular.
3. Bore hole logs are provided in Addendum D11-3. Additional test pit and borehole information was analyzed from the Big Horn Mine Permit No. 213.
4. Groundwater and surface water characteristics are discussed extensively in Appendix D6. Potential impacts to surface water and groundwater are discussed in the Mine Plan. The water resources are generally discussed in Section D11.4.
5. Additional research has been incorporated from the Big Horn Mine Permit No. 213. Corrections and reevaluations of the AVF study have been made throughout Appendix D11.

Comment BJ 27

Appendix D11, Alluvial Valley Floor, Addendum D11-3, Some of the borehole and well logs indicate a damp or wet interval encountered during drilling. Was an attempt made to allow wet materials to produce water prior to continuation of the hole or was water noted after adding another drill steel and lowering the kelly to begin the next 20 feet of hole? Typically, after the steel has been added and the compressor is engaged, a small amount of water can be air-lifted before the rotary table begins to turn. If so, are there field notes indicating water was observed during the connection?

Response BJ 27

It is standard procedure during drilling operations to provide wet or damp intervals an opportunity to produce water. If the intervals had produced water, this would have been noted in the drilling logs provided in Addendum D11-3. There are no other separate field notes that would provide additional information. No changes to the text were made.

COMMENT MK 1

Appendix D11-AVF, Section D11.1 Introduction, 1. In the second paragraph on Page D11-1, the possible impacts of the proposed mining operation on the Tongue River

AVF are dismissed because the area is planned for facilities level disturbance only. However, the groundwater model (Mine Plan Addendum MP-3) predicts drawdown in the Tongue River alluvium, thereby possibly affecting the AVF. As discussed in subsequent comments, additional analysis and monitoring is needed to comply with LQD Coal Rules and Regulations regarding AVFs. (MDK)

RESPONSE MK 1

Revised text to reference Mine Plan Section MP.6 concerning the Brook Mine's effect on the Tongue River AVF.

COMMENT MK 2

Appendix D11-AVF, Section D11.2 Purpose and Scope, 2. On Page D11-2, please change "Wyoming Reclamation Act" to "Wyoming Environmental Quality Act". (MDK)

RESPONSE MK 2

Revised text to state "Wyoming Environmental Quality Act."

COMMENT MK 3

Appendix D11-AVF, Section D11.3 Stream Laid Deposits, 3. For identification of unconsolidated stream laid deposits, LQD Guideline No. 9 (AVF) lists two items that may be used to positively identify unconsolidated streamlaid deposits: (1) channel bars, splays, abandoned meanders, modern flood plains, or terraces, and (2) bedload or washload sediment deposited or transported in a nonbedrock channel bottom. Presumably, item (2) would be met at the streams identified within the AVF study area. However, the permit application does not address whether the channels contain geomorphic features from item (1). Please address in the text whether channel bars, splays, abandoned meanders, modern flood plains, or terraces are observed within the streams within the AVF study area. (MDK)

RESPONSE MK 3

Revised text to discuss the lack of channel bars, splays, abandoned meanders, modern flood plains, and terraces that qualify for AVFs in the Hidden Water Creek, Slater Creek, East Fork Earley Creek, and Earley Creek valleys.

COMMENT MK 4

Appendix D11-AVF, Section D11.3 Stream Laid Deposits, 4. On Page D11-5, the conclusion that the materials in Hidden Water Creek valley do not meet the definition of unconsolidated streamlaid deposits, is in conflict with the conclusion from the Big Horn Mine Permit. The Big Horn Mine Permit (Appendix D6, Pages D6-151 to D6-158) describes the evaluation of unconsolidated streamlaid deposits on lower Hidden Water Creek. The permit states: "The conclusion verified from the pit observations is that

these deposits are unconsolidated and stream laid. Small isolated patches of colluvium or bedrock can be found throughout the alluvial deposits, but these characteristics do not exclude the deposit from being stream laid.” Please evaluate the data and findings from the Big Horn Mine Permit before a conclusion is drawn about the absence of unconsolidated streamlaid deposits on Hidden Water Creek. (MDK)

RESPONSE MK 4

Revised text to discuss the findings of the Big Horn Mine from test pits in the Hidden Water Creek valley. Additionally, Exhibit D11.3-1 was revised to show the locations of the Big Horn Mine test pits in Hidden Water Creek in relation to both the Brook Mine permit area and the Big Horn Mine permit area. Added the Big Horn Mine Permit State Decision Document (SDD) 213-T2 to Addendum D11-2.

COMMENT MK 5

Appendix D11-AVF, Section D11.3 Stream Laid Deposits, 5. The Big Horn Mine Permit also describes subirrigation and flood irrigation studies on lower Hidden Water Creek and concludes: “Due to the lack of subirrigation and extremely low potential for flood irrigation, Hidden Water Creek is not an alluvial valley floor.” Although this is in the approved mine permit, it does not appear that an explicit AVF determination for Hidden Water Creek was ever issued by the LQD, and the AVF findings in the SDDs for the Big Horn Mine Permit do not mention Hidden Water Creek. The Brook Mine Permit application should incorporate these previous AVF studies on Hidden Water Creek into Appendix D11. (MDK)

RESPONSE MK 5

See response to comment MK 4. Additionally, while the Big Horn Mine State Decision Documents do not mention Hidden Water Creek, the SDD 213-T2 states that “No other drainages are of significant size or lack the stream laid deposits necessary to be an Alluvial Valley floor within the renewal and/or amendment areas.” Hidden Water Creek is located within the renewal area and was not included within the originally declared AVF area. Although it was not mentioned by name, it has been declared not to be an AVF within the Big Horn Permit Area. This SDD has been added to Addendum D11-2 and discussion added to the text in Section D11.3.

COMMENT MK 6

Appendix D11-AVF, Section D11.4.2 Extent of Subirrigation, 6. On Page D11-6 it is stated the three monitor wells were installed along the thalweg of Slater Creek. The transects in Exhibit D11.3-2 show that two of the wells (578513-AL and 578418-AL) are not along the thalweg but are rather upgradient of the channel. Please revise this description in the text. (MDK)

RESPONSE MK 6

Revised text to more accurately state that the monitor wells are along or near the thalweg.

COMMENT MK 7

Appendix D11-AVF, Section D11.4.2 Extent of Subirrigation, 7. It appears that from Exhibit D11.1-1 that subirrigation is occurring on Earley Creek within the AVF study area. Please explain why subirrigation was not mapped on Earley Creek. (MDK)

RESPONSE MK 7

Revised Exhibit D11.1-1 to show potentially subirrigated lands on Earley Creek. The text was revised in Section D11.4.2 to reflect that subirrigation potentially occurs along Earley Creek.

COMMENT MK 8

Appendix D11-AVF, Section D11.4.2 Extent of Subirrigation, 8. On Page D11-6, second paragraph, the alluvial/colluvial potentiometric surface is dismissed as a source of subirrigation along Slater Creek. However, the other hydrologic processes responsible for the subirrigation are not identified. Please discuss in the text why subirrigation is occurring along Slater Creek. (MDK)

RESPONSE MK 8

Revised text to discuss the presence of burn areas overlying residual coal ash bands that serve as aquacludes which prevent water from entering or escaping the coal below.

COMMENT MK 9

Appendix D11-AVF, Section D11.4.2 Extent of Subirrigation, 9. The cross-sections in Exhibit D11-3-2 would be improved if the active channel and any floodplains or terraces were shown. A description of the materials in the active channel bottom would also help identify unconsolidated streamlaid deposits. (MDK)

RESPONSE MK 9

Revised Exhibit D11.3-2 to show the 2-year, 24-hour flood inundation area and the location of the active channel. Data regarding the materials in the active channel bottom are presented in the borehole logs in Addendum D11-3.

COMMENT MK 10

Exhibit D11.4-1, the extent of irrigated lands shown in Sections 2 and 11 along Slater Creek may not be correct. According to the summary for the Hart Brothers Ditches

water right (permit 1317) in the SEO database, the land being irrigated under the water right has decreased to 23 acres:

THIS FACILITY IS MADE UP OF TWO DITCHES. THE WEST DITCH HAVING A POINT OF DIVERSION IN LOT 2 AND THE EAST DITCH HAVING A POINT OF DIVERSION IN THE SENE OF SECTION 3, T57N, R85W. T57N, AND 58N, R85W HAS BEEN DEPENDENTLY RESURVEYED. REQUEST FROM PADLOCK RANCH TO ELIMINATE 67 ACRES AS FOLLOWS: 32 ACRES IN THE SWSW OF SECTION 2 - 30 ACRES IN THE NENW AND 5 ACRES IN THE NWNW OF SECTION 11 ALL IN T57N, R85W, RECEIVED AND GRANTED. REQUEST OF ELIMINATION AND PROOF OF OWNERSHIP FILED IN MISCELLANEOUS NOTICES. ADJUDICATED WITH H.H. WILLIAMS AS APPROPRIATOR. PERMIT RECORD REFLECTS SOURCE AS SLATER CREEK AND WATER STORED IN THE HART BROTHERS RESERVOIR, P60R, XR7825A, HOWEVER CERTIFICATE RECORD REFLECTS .91 CFS FOR THE IRRIGATION OF 64 ACRES. BOC PETITION II 89-4-2 BY PADLOCK RANCH WAS GRANTED TO ISSUE AMENDED CERTIFICATE C77/290A TO REDESCRIBE LANDS WITHOUT CHANGING LAND TOTALS AND TO CHANGE POINT OF DIVERSION FROM THE RECORD POINT IN THE NWNE AND SENE OF SECTION 3, 57N, R85W AND PARTIAL MEANS OF CONVEYANCE FOR 41 ACRES (.59 CFS) TO THE WILLIAMS DITCH, P8710D, C77/289A DIVERTING WATER FROM SLATER CREEK IN THE SESW OF SECTION 34, T58N, R85W AS RECORDED IN ORDER RECORD BOOK 36, PAGES 385-390 AND RECEIVED ON CD3/578A. THIS LEAVES 23 ACRES STILL IRRIGATED UNDER THIS PERMIT. LANDS SHOWN BELOW AS "AME" AND "ELI" ARE THOSE ORIGINALLY DESCRIBED UNDER THIS DITCH.

Please clarify the irrigated acreage status for the Hart Brothers Ditches water right with the SEO and revise Exhibit D11.4-1 accordingly. (MDK)

RESPONSE MK 10

Exhibit D11.4-1 was revised to more accurately capture irrigated lands on Slater Creek in Sections 2 and 11 of Township 57 North, Range 85 West.

COMMENT MK 11

Appendix D11-AVF, Section D11.4.4 Water Quality, 11. On Page D11-7, it is not necessary to mention the State of Montana water quality classifications of the Tongue River, as only State of Wyoming classifications and standards would apply. Please remove reference to the Montana standards. (MDK)

RESPONSE MK 11

Removed text referencing State of Montana water quality standards.

COMMENT MK 12

Appendix D11-AVF, Section D11.4.5 Agricultural Practices, 12. On Page D11-8, second paragraph, it states that Exhibit D11.1-1 shows that sufficient water supply does not exist for consistent agricultural practices in East Fork Earley Creek. However, Exhibit D11.4.1 shows a point of diversion for Earley Creek Ditch No. 1 and several areas of irrigated lands less than 40 acres in East Fork Earley Creek. As documented in Addendum D11-4, there is an adjudicated water right for irrigation in this location. So there may be sufficient water supply for consistent agricultural practices. The text needs to further expand on this discussion of East Fork Earley Creek since there is an adjudicated water right for irrigation. (MDK)

RESPONSE MK 12

Revised text to include the Earley Creek Ditch No. 1 water right, but explained that subirrigation must not be prevalent in East Fork Earley Creek because no culvert or other conveyance structure is present beneath I-90. If subirrigation was prevalent and without a conveyance structure beneath I-90, substantial amounts of water would back up against the interstate.

COMMENT MK 13

Appendix D11-AVF, Section D11.4.5 Agricultural Practices, 13. On Page D11-8, last paragraph, it states that the hay meadows along Slater Creek in Sections 2 and 11 are not within the boundaries of subirrigation or natural flood irrigation.

(a) The areas symbolized as irrigated lands in Exhibit D11.4-1 do not necessarily correspond to hay meadows, as the imagery shows hay meadows in the SWNE, SENE, and NESE of Section 11, and the NWSW of Section 12. The hay meadows appear to correspond with the area mapped as “AG” in the Vegetation Map (Exhibit D8.2-1) in Addendum D8.

(b) The irrigated area shown in Exhibit D11.4-1 near the Landen Ditch does overlap with subirrigation mapped in Exhibit D11.1-1.

Please re-evaluate the area of hay meadows along Slater Creek and revise the text accordingly. Comments No. 15 and 16 below also relate to this issue. (MDK)

RESPONSE MK 13

The text was revised in Section D11.5 to reflect the presence of limited hay meadows and overlapping of irrigation with subirrigation on the upper reaches of Slater Creek in Sections 2, 3, 11, and 12 of Township 57 North, Range 85 West. Exhibit D11.4-1 was revised to show irrigation in Sections 2, 3, 11, and 12 of Township 57 North, Range 85 West.

COMMENT MK 14

Appendix D11-AVF, Section D11.4.5 Agricultural Practices, On Page D11-8, last paragraph, it states that, besides Hart Bros Ditches, the remaining portion of the Slater Creek valley does not contain SEO water rights. This is not the case as Exhibit D11.4-1 shows Landen Ditch in the NENW of Section 11. This water right (P11695) does not appear in Addendum D11-4. Please revise the text and add this water right to Addendum D11-4. (MDK)

RESPONSE MK 14

The text was revised in Section D11.5 to discuss the Landen Ditch water right (P11695). A copy of the Landen Ditch water right was added to Addendum D11-4.

COMMENT MK 15

Appendix D11-AVF, Section D11.4.5 Agricultural Practices, 15. The irrigated acreage for the Landen Ditch water right appears to be 18 acres for one point of use and 22 acres for a second point of use. Please add these areas to Exhibit D11.4-1. (MDK)

RESPONSE MK 15

Exhibit D11.4-1 was revised to more accurately reflect irrigated lands in the vicinity of the Landen Ditch.

COMMENT MK 16

Appendix D11-AVF, Section D11.4.5 Agricultural Practices, 16. The Hall Ditch (SEO Permit 5195), mapped in Section 11 of Exhibit D11.4.1, apparently provides irrigation water for hayfields in the NESE of Section 11 (30 acres) and the NWSW of Section 12 (22 acres). This water right does not appear in Addendum D11-4. Please add this water right to the Addendum and add the irrigated acreages to Exhibit D11.4-1. (MDK)

RESPONSE MK 16

A copy of the Hall Ditch water right (SEO Permit 5195) was added to Addendum D11-4. Exhibit D11.4-1 was revised to depict irrigated lands in Section 12, Township 57 North, Range 85 West. The text in Section D11.5 was revised to discuss the Hall Ditch water right.

COMMENT MK 17

Appendix D11-AVF, Section D11.6 Extent of Alluvial Valley Floor, 17. Portions of Earley Creek and East Fork Earley Creek are within the AVF study area yet the permit application does not attempt to conclude if these streams contain AVFs. Presumably, the LQD will need to make an AVF finding on these streams. (MDK)

RESPONSE MK 17

See response to Comment BJ 26. Additional discussion has been added to aid WDEQ in the AVF findings of East Fork Earley Creek and Earley Creek. Both valleys are upstream of mining activities proposed by RAMACO such that no material damages are expected to either valley.

COMMENT MK 18

Appendix D11-AVF, Section D11.6 Extent of Alluvial Valley Floor, 18. The first bullet for Slater Creek on Page D11-9 dismisses the positive identification of unconsolidated stream laid deposits because a layer of colluvial material was found over alluvial material. However, as stated in Appendix D5 on Page D5-8 and Page D5-9, sub-rounding of the clinker present in the cuttings suggests water driven deposition of limited extent. Also, as discussed in Comment No. 3, the application did not evaluate unconsolidated streamlaid deposits in a manner that is consistent with identification criteria listed in LQD Guideline No. 9. The application has not provided sufficient evidence that unconsolidated stream laid deposits are not present along Slater Creek. (MDK)

RESPONSE MK 18

See response to Comment MK 3. The discussion on the Slater Creek valley has been further expanded to include the absence of unconsolidated stream laid deposits such as channel bars, splays, abandoned meanders, modern flood plains, and terraces that qualify for AVFs. Exhibit D11.3-1 clearly indicates the presence of undifferentiated alluvium and colluvium (Qac) in the Slater Creek valley.

COMMENT MK 19

Appendix D11-AVF, Section D11.6 Extent of Alluvial Valley Floor, 19. The third bullet on Page D11-9 for Slater Creek should be clarified that the width of natural flood irrigation in the valley is generally insufficient to provide for economic agricultural practices. However, economic agricultural practices clearly occur immediately upstream of the proposed mine permit boundary because of artificial flood irrigation of hayfields adjacent to the channel. These practices are documented by existing water rights that are approximately 100 years old. Please revise this discussion. (MDK)

RESPONSE MK 19

The text in Section D11.6 of Slater Creek's third bullet was revised to include the irrigated hayfield upstream of the permit boundary.

COMMENT MK 20

Appendix D11-AVF, Section D11.6 Extent of Alluvial Valley Floor, 20. The fifth bullet for Hidden Water Creek on Page D11-9 seems to dismiss the positive identification of

unconsolidated stream laid deposits because of colluvial material with shallow bedrock. However, as previously noted, this conflict with information in the Big Horn Mine permit concerning unconsolidated stream laid deposits on Hidden Water Creek. (MDK)

RESPONSE MK 20

Refer to response of Comment MK 4. The Big Horn Mine permit boundary has been added to Exhibit D11.1-1. The text in Section D11.6 has been updated to include a summary of the discussion stating that the Big Horn Coal Permit No. 213-T2 SDD determined the limits of the AVF, and no portion of Hidden Water Creek was determined as being AVF.

COMMENT MK 21

Appendix D11-AVF, Section D11.7 Mining of Alluvial Valley Floor, Although the LQD has not yet issued its formal finding, the segment of the Tongue River adjacent to the proposed permit area, which was not declared under previous LQD findings, likely contains an AVF.

(a) If this AVF is significant to farming, the applicant must comply with LQD Coal Rules and Regulations Chapter 3, Section 2(d)(ii) and demonstrate that the proposed mining operations will not materially damage the quantity and quality of water that supplies the Tongue River AVF. The absence of direct mining on the Tongue River AVF does not relieve the requirement of assessing the probable hydrologic impacts of the proposed operation to the AVF, particularly since the groundwater model in Mine Plan Addendum MP-3 predicts drawdown in the Tongue River alluvium. (MDK)

(b) Regardless of the significance to farming, the applicant must also maintain and/or restore the essential hydrologic functions of the Tongue River AVF. The applicant must therefore identify the essential hydrologic functions of the Tongue River AVF and either (1) provide an analysis that the proposed operation will not hamper the essential hydrologic functions, or (2) demonstrate that the essential hydrologic functions will be restored. The essential hydrologic functions for another part of the Tongue River AVF are described in the Big Horn Mine Permit SDD (shown in Brook Mine Appendix D11 on Page Addendum D11-2-27), so this may be a good starting point to consider. (MDK)

(c) A monitoring system is also required to demonstrate the essential hydrologic functions are maintained, as per LQD Coal Rules and Regulations, Chapter 5, Section 3(b)(ii). Since the groundwater model (Mine Plan Addendum MP-3) predicts 2.5 feet of drawdown in the Tongue River alluvium, the monitoring

system may likely contain alluvial monitoring wells and periodic evaluation of color-infrared imagery. (MDK)

RESPONSE MK 21

Revised text as requested. Revised text by adding information regarding the essential hydrologic functions of the declared AVFs (Tongue River and Goose Creek) from the SDD in Addendum D11-2. Also, added portion of text to describe possible monitoring system and plan for the AVFs that may be affected.

COMMENT MK 22

Appendix D11-AVF, Section D11.7 Mining of Alluvial Valley Floor, 22. The essential hydrologic functions of the adjacent Goose Creek AVF must also be maintained during the proposed mining operation. The application needs to list these functions, as described in the Big Horn Mine Permit SDD (shown in Brook Mine Appendix D11 on Page Addendum D11-2-27). A monitoring system is also required to demonstrate that the essential hydrologic functions will be maintained. (MDK).

RESPONSE MK 22

See response to comment MK 21.

Mine Plan

Comment BJ 28

Volume 11, Mine Plan, Section MP.1.2.1, pg. MP-4, Tunnel and pillar widths are discussed in general terms. Please approximate a range for the widths, in feet, in the narrative to give context to the discussion.

Response BJ 28

Added text as suggested.

Comment BJ 29

Volume 11, Mine Plan, The fifth sentence, beginning with "To minimize the amount of exposure..." does not make sense. Please rewrite the sentence for clarity.

Response BJ 29

Added text as suggested.

Comment BJ 30

Volume 11, Mine Plan, The narrative also references figure MP.1-3 as a general schematic of the highwall mining operation. The figure depicts significant vertical

highwalls above the mining operation. The text mentions that the highwalls will be vertical where the Masters and Carney converge but the illustration depicts conditions where the coal seams appear to be separated by a considerable thickness of parting. It is our experience that vertical highwalls in the Powder River Basin are unstable and should be discourage wherever possible. What would the maximum thickness of burden approximate where the vertical highwalls will exist? Please include an average on the schematic as has been done for pit width and bench width.

Response BJ 30

The figure has been updated to include the average depths.

Comment BJ 31

Volume 11, Mine Plan, Pages MP-3 and MP-4, These pages describe the highwall mining operation in vague generalities. The narrative states that the continuous miner will advance into the working face to a depth of 2,000 feet. The manufacturer's specifications for the ADDCAR system state that the depth of a cut is 1,600 feet. Is this a discrepancy of 400 feet or is there a difference in mining tools and the ADDCAR system comes with multiple depth capacities. Please clarify.

Response BJ 31

Conversations with ADDCAR representatives indicates that they will be able to extend the range of the highwall mining system so cuts up to 2,000 feet can be achieved.

Comment BJ 32

Volume 11, Mine Plan, A general word of guidance – Ramps are mentioned in the narrative as designed to an 8% grade. The Cat 777 can generally handle this grade fairly well under most conditions. The Mack Titan trucks, however, may be problematic under certain conditions. Entering the pit on the ramp could be difficult for the Mack trucks with pups if the ramp has been watered to control dust. The overburden materials used for ramp systems are generally silty with a clay matrix and overwatering can create slipping hazards for vehicles. A truck with multiple trailers will have difficulty navigating these conditions. A 6% ramp under these situations is strongly advised.

Response BJ 32

Revised text as suggested.

Comment BJ 33

Volume 11, Mine Plan, The narrative describes the tunnel width as variable, depending on the cutting head chosen. Please indicate approximate footages of the tunnel widths. For example, Bucyrus and Joy manufacture continuous miners that

have heads ranging from 11 to 12 feet in width. A mention of those widths would clarify the narrative. Also the protective coal pillars are described but have no dimensions indicated. The pillar width to tunnel width is crucial so an approximation of the remnant pillars width in feet is required. Please include approximate widths for tunnel and pillar widths.

Response BJ 33

See response to Comment BJ 28. The text has been updated as requested.

Comment BJ 34

Volume 11, Mine Plan, Section MP.1.2.2, The dozer push method of overburden removal is not adequately described. Though Figure MP.1-4 does depict the dozer push materials to some extent, the overlapping nature of the multiple lift system can be confusing to some. The narrative on page MP-4 is too brief. Please elaborate further on the dozer push staging and overburden removal. Perhaps an illustration that depicts the dozer removal in stages would be more appropriate. This can be accomplished by creating a series of illustrations rather than only one. Please clarify the methodology.

Response BJ 34

Revised text as requested. Created Figure MP.1-5.

Comment BJ 35

Volume 11, Mine Plan, Section MP.1.4, Pg. MP-5, The last sentence does not make sense. Please rewrite the sentence.

Response BJ 35

Removed last sentence for clarity.

Comment BJ 36

Volume 11, Mine Plan, Section MP.4.2.3, Pg. MP-15, The discussion of temporary topsoil stockpiles describes creating a ring ditch around the topsoil pile if there is a potential for water erosion during the 2 week to 6 month life of the pile. Since the climate is unpredictable and subject to rapid changes, temporary topsoil stockpiles (2 weeks to 6 months) will be required to have ring ditches in all cases with no qualifiers. LQD writes more violations concerning inadequate topsoil practices than any other issue. Rewrite the narrative to indicate that all temporary topsoil stockpiles will have a ring-ditch and berm created for piles having a life of 2 weeks or more. Keep in mind that even a short-lived topsoil stockpile could generate a violation if a sudden rainstorm were to erode the soil and waste it on the surrounding terrain. RAMACO may want to allow for this as well

Response BJ 36

Updated text as requested.

Comment BJ 37

Volume 11, Mine Plan, Section MP.4.3.4, Pg. Mp-17, A swell factor of 16% is being used to convert bank cubic yards to loose cubic yards. The number was generated from information attained from Big Horn Coal (PT213). Where was this information located? Many of the coal mines in the northwestern corner of the Powder River Basin use a swell factor of 13% - 14% since the overburden material is finer grained, with a higher clay content than mines on the eastern margin of the basin. Please cite the use of a 16% swell factor.

Response BJ 37

Revised text as requested. Table MP.4-9 provides typical swell and load factors of materials.

Comment BJ 38

Volume 11, Mine Plan, Section MP.6.1, Pg. MP-39, The second paragraph discusses surface runoff attenuation during mine years 4 and 5. The peak flow rates for precipitation events will be attenuated by the mining trenches that lie perpendicular to the flow in the local drainages. What flow events are expected to be attenuated by the trenches? Will the 2 year, 10 year, or 100 year events be considered as an average event? Please modify the narrative, in general terms, to define which precipitation event will be used when designing the pit drainage plans.

Response BJ 38

Updated text as requested.

Comment BJ 39

Volume 11, Mine Plan, Section MP.8, Pg. MP-47, The narrative mentions that potable water will be hauled to the mine and placed in a cistern. Why is a cistern system being considered for potable water instead of a reverse osmosis unit? The local residents use such systems as do the mines. How large of a cistern will be used for water storage? Please modify the narrative to expand on the rationale behind using a cistern.

Response BJ 39

The text has been revised. The final potable water system has not been determined.

Comment BJ 40

Volume 11, Mine Plan, Section MP.9.9, Pg. MP-52, When pre-dug mud pits are to be used for exploration drilling, the topsoil must be protected from contamination by removal and stockpiling. The pit location must be stripped to the base of the soil with an areal extent that allows the pit materials to be stacked as spoil without encroaching on native surface. Reclamation shall occur in a manner that will best restore the surface to its pre-disturbance condition. These contingencies need to be better described in the narrative. Please modify the text to reflect the aforementioned conditions.

Response BJ 40

Revised text as suggested.

Comment BJ 41

Volume 11, Mine Plan, Section MP.18, Pg. MP-68, The second paragraph discusses the speed limits that will be set on haulroads to protect wildlife. Approximately what speed limits will be used?

Response BJ 41

Updated text with a 45 MPH Speed Limit.

Comment BJ 42

Volume 11, Mine Plan, Section MP.20, Pg. MP-69, The brief description of underground mining should state that no "conventional" underground mining will occur. Highwall coal recovery is an underground mining technique, but no personnel work underground. Thus the mining is modified underground mining.

Response BJ 42

Revised text as requested.

Comment BJ 43

Volume 11, Mine Plan, Section MP.24, Pg. MP-70, The word "Operation" is misspelled in the title (OPERTATION).

Response BJ 43

Revised text as requested.

Comment BJ 44

Volume 11, Mine Plan, Section MP.25, Pg. MP-71, The second paragraph, third sentence, discusses requiring additional permitting. The word "additional" is misspelled (addidntional).

Response BJ 44

Revised text as requested.

Comment BJ 45

Volume 11, Mine Plan, TABLE MP.1-1, The total disturbance should read 895 acres, not 775. Please correct the table.

Response BJ 45

Revised text as requested.

Comment BJ 46

Volume 11, Mine Plan, FIGURE MP.1-3, The average width of the pit floor and safety bench have average widths indicated on the drawing. Please insert the average heights of the vertical highwalls in these situations.

Response BJ 46

Revised Figure MP.1-3 requested.

Comment BJ 47

Volume 11, Mine Plan, FIGURE MP.1-4, The cross section, as drawn, is confusing. It would appear that dozer pushed, loose material significantly exceeds the bank material available in the highwall. The figure is not drawn to scale but a more accurate attempt to represent dirt volumes would be appreciated. Also, the cross section itself does not make sense in the way that operational steps are illustrated. A series of cross sections over time would be much more beneficial to define the appearance of the dozer push. Please modify the figure accordingly. A sample of an idealized schematic is attached. It is volumetrically accurate.

Response BJ 47

Figure MP.1-4 has been updated to add clarity.

Comment BJ 48

Volume 11, Mine Plan, FIGURE MP.4-3, Pg. MP-F7, What is the narrow, vertical rectangle located in the center of the coal stockpile coming from the stacker?

Response BJ 48

The figure MP.4-3 has been updated to remove the rectangle

Comment BJ 49

Volume 11, Mine Plan, Addendum MP-3, Pg. MP-3-2, The introductory paragraph states that the Brook Mine is approximately 6 miles northwest of Sheridan, Wyoming. However, in earlier narrative, the mine is said to be 6 miles south of the Montana border and 8 miles northwest of Sheridan. This passage is found in the Land Use Appendix D1-1. The distances should be uniform in all instances throughout the narrative.

Response BJ 49

Revised text as requested.

Comment BJ 50

Volume 11, Mine Plan, Addendum MP-3, Section 2.3, Figures 2.3-1 and 2.3-2 show the potentiometric surfaces for the Carney and Masters coal beds. The contours daylight and appear to be in mid-air over the Slater Creek drainage. Please adjust the contours so they terminate at the outcrop.

Response BJ 50

Revised Figures 2.3-1 and 2.3-2 in Addendum MP-3-17 as requested.

Comment BJ 51

Volume 11, Mine Plan, Addendum MP-6, Section MP-6.1, Pg. MP-6-3, The second to last paragraph indicates that the depth of the penetration by the continuous miner will be 2,000 feet. Is this an approximation since the listed depth for the ADDCAR device is 1,600 feet. Please clarify the discrepancy.

Response BJ 51

Based on communication with ADDCAR's representative 2,000 ft penetration is achievable. Generally, users of the ADDCAR system encounter increasing depth of cover with greater penetrations requiring wider web pillar between holes. The loss in recovery due to the wider pillars potentially negates any production gain from increased penetration.

Comment BJ 52

Volume 11, Mine Plan, Addendum MP-6, Section MP-6.1, Pg. MP-6-4, The discussion in this sections centers around the necessity of maintaining a straight, even cutting depth to prevent pillars from being cut too narrow to hold up the roof material and

allow subsidence. The 1:1 ratio suggested by NIOSH is acceptable as long as roof strength tests bear up (no pun intended) the use of the general guidelines. A small sample of tests have been run on roof and coal rock intervals and those tests have been reported. LQD requests a narrative placed either in this location of the text or other location of RAMACO's choosing that discusses the strength tests results as it pertains to roof stability. Also, a commitment must be made in the document to sample roof material for strength testing for at least one location in every panel that will be mined by the continuous miner prior to mining. Our concern rests with the competence of the overlying lithologies and their possibility for subsidence. This has been a problem in this area for decades and care must be applied to characterize roof materials accurately.

A sampling plan to test compressive strength above each coal panel must be submitted prior to permit approval.

Response BJ 52

RAMACO must submit and have an approved MSHA Ground Control Plan that contains the strength test and commitments requested. RAMACO will provide this information when it is received and include it in the Subsidence Control Plan.

Comment BJ 53

Volume 11, Mine Plan, Addendum MP-6, Please provide the data used as input for the ARMPS-HWM program.

Response BJ 53

The following input values were used in the ARMPS-HWM program: compressive strength of coal - 660 psi, rock density - 162 lbs/ft³, abutment angle of 21°

Comment BJ 54

Volume 11, Mine Plan, Addendum MP-6, FIGURE MP-6.2-2, The scale of the photograph is too large to adequately depict the zones of surface subsidence from the old underground mines. Please blowup the scale to allow for clear visibility of the subsidence.

Response BJ 54

Cardno selected the larger scale to show that subsidence was limited to a small portion of the deep mine and not visible over other areas of the deep mine due to its increased depth of cover. See revised figure in revision to Cardno's Subsidence Report

Comment BJ 55

Volume 11, Mine Plan, Addendum MP-6, FIGURE MP-6.2-3, This figure is very effective. It clearly shows the subsidence evident on the air photo as it correlates to

the old underground map superimposed on it. One problem, though, is that the air photo base needs to be darker, with greater contrast. The photo is a bit washed out and manipulation of the brightness/contrast aspects of the photo would help its visibility greatly. Please recalibrate the photo tonality.

Response BJ 55

See revised figure in revision to Cardno's Subsidence Report

Comment BJ 56

Volume 11, Mine Plan, Addendum MP-8, Section MP-8.5.4, The last sentence in this section indicates that there is no suitable habitat available for the Northern Long-Eared Bat. Does this include the climax Cottonwood Forest along Tongue River? The well developed understory along the river is suitable for Long-eared bat habitation though none have been located in this area. Or does the negation of the existence of the bat only apply to the area in the hills above the river where the mining will occur. Please clarify the area that was considered for potential Long-Eared Bat occurrence.

Response BJ 56

The text was revised to clarify.

Comment BJ 64

EXHIBITS, Mine Plan, Exhibit MP.1-1, The patterns used to depict surface disturbance from year to year are too similar. It is difficult to differentiate between year 0 and year 2, for example. Please recreate the surface disturbance layers to be more unique. The overburden removal sequence map (Exhibit MP.4-4) is a good example.

Response BJ 64

Revised Exhibit MP.1-1 as requested.

Comment DM 6

Mine Plan, MP.3.1.3 – A primary haul road appears to cross the Tongue River using the bridge that is currently in place from previous mine usage. Please discuss any updates needed for that bridge to be adequate for the intended usage.

Response DM 6

The revised primary haul road alignments do not cross this bridge and the use of this bridge for haul trucks and other traffic associated with the mine is not planned. Updated Exhibit MP.3-1.

Comment DM 7

Mine Plan, Exhibit MP4-3 shows Overburden Stockpiles OB-12 and OB-13, and Topsoil Stockpile TS-6 being located directly in the Slater Creek channel, without any mention of redirecting Slater Creek, or otherwise preventing the hydrologic consequences of damming up the creek with Overburden and Topsoil stockpiles. Please correct.

Response DM 7

Revised Exhibit MP.4-3 as requested with OB-12 and 13 as well as TS-6 moved out of Slater Creek channel.

Comment DM 8

Mine Plan, MP.7 – Because of the proximity of the planned facilities primarily in T57, R84 Sec.15 to the Tongue River and Goose Creek, I would like to see surface water monitoring upstream of these facilities on Goose Creek and Tongue River, and downstream of these facilities on Tongue River. Please discuss the feasibility of fulfilling this request, with reasoning.

Response DM 8

Revised text as requested. Revise Exhibit MP.7-1 with USGS stream gage location that is within the viewing area.

Comment DS 11

Mine Plan, 11) Depending upon the outcome of required overburden sampling, commitment for special handling of unsuitable overburden will be required to assure that placement of unsuitable materials so as not to hinder plant growth or to adversely affect surface or groundwater quality will be required in the Mine Plan.

Response DS 11

See section MP.4.6.1, fourth paragraph.

Comment DS 12

Mine Plan, 12) Does RAMACO provide a better detailed description of the topsoil salvage and handling process than that discussed in section MP.4.2.1? The description provided is not detailed so as to provide a description of the equipment used, the methods for assuring adequate soil salvage, or whether topsoil and subsoil salvage will follow the recommendations in Appendix D7 for stockpiling topsoil separate from subsoil. (Map Unit A Cambira Loam, Map Unit B Zigweid Loam, Map Unit C Forkwood Loam, Map Unit G Bauxson Loam, Map Unit H Haverdad Loam, Map Unit U Ulm Clay Loam) Please understand that topsoil and subsoil may only be mixed

if both meet Guideline 1 suitability criteria. Please include more detail for topsoil salvage and handling or let the LQD know where the information may be accessed.

Response DS 12

Revised text as requested.

Comment DS 13

Mine Plan, 13) Section MP.4.2.3 all topsoil stockpiles, even those stockpiled temporarily or windrowed at the edge of a disturbance, must be identified by a topsoil sign from initiation of the salvage operation as required under Chapter 4, Section (c)(D) that states that signs must be in place at the time stockpiling is begun. Therefore, the text in the first paragraph of this section stating that signs will not be required must be corrected. Signs will always be required to identify all salvaged topsoil and must be placed on all approaches to the topsoil and no more than 150 feet from the stockpile location.

- a. Additionally, all stockpiled topsoil, even windrowed along the edge of a disturbance, must be protected against wind and runoff erosion, compaction or potentially toxic materials no matter what the longevity designation of the stockpiled material. The Mine Plan must provide a commitment to these requirements.

Response DS 13

Revised text as requested.

Comment DS 14

Mine Plan, 14) Section MP.4.2.4(4.2.1?) does not discuss topsoil salvage during winter months. Salvage during the winter months, especially of shallow soil profiles, is discouraged by the LQD due to a lack of depth control caused by varying depths of permafrost. Please provide discussion concerning this subject.

- a. Even short term and temporary topsoil stockpiles must be identified on maps and the volumes accounted for in annual reports. Several criteria that must be considered are well established for placement of topsoil stockpiles and include:
 - i. Construction of stable areas to minimize wind and water erosion
 - ii. Stockpiles will not be placed in areas where runoff water can contribute to the loss of topsoil (side hills or drainages)
 - iii. Stockpiles will not be constructed on unsuitable backfill locations
 - iv. Stockpiles will have associated sediment control established in advance of construction

- v. Stockpiles will not be constructed at locations of known cultural or wildlife resources for which protection or mitigation is required.
- b. Other topsoil stockpile construction and maintenance considerations include:
 - i. Stockpiles will be constructed with slopes of 3h:1v or less
 - ii. Bypass ditches, berms or equivalent may be used to divert runoff around stockpiles
 - iii. Stockpiles that will remain for less than 1 year may be revegetated or treated with urface roughing methods such as ripping or discing to reduce runoff and wind erosion potential.

Response DS 14

Revised text as requested.

Comment DS 15

Mine Plan, 15) Section MP.4.2.7, page MP 4-5. Aside from operation of soil salvage equipment with the potential for soil contamination due to blown hydraulic hoses or small fuel leaks, the LQD expects not contamination of soil during the mining operation. Contamination of subsoil and overburden is more likely. The LQD recommends that RAMACO re-phrase the section header and text to show petroleum contaminated materials being and not soils.

- a. What criteria will RAMACO use to determine if spills require reporting to the DEQ, and what process will be used in spill reporting?
- b. What will the operational procedure be for management of the proposed on-site landfarm for contaminated materials, and where will it be located? Will it be identified on the ground by a sign?

Response DS 15

Revised text as requested.

- a. See Section MP-4.5.2 of Addendum MP-4
- b. See Section MP-4.5.3 of Addendum MP-4

Comment DS 16

Mine Plan, Section MP.4.2.8. Please provide a detailed description for the disposal of empty drums, not just a citation of the EPA Rule which is probably not know by most readers of this public document.

Response DS 16

The EPA Code Federal Regulation cited is public information which may be accessed online or at a public library if the reader desires to know the specifics requirements and steps regarding container disposal.

Comment DS 17

Mine Plan, MP.4.3.1 discusses overburden removal processes. However, little detail is given to explain the actual process for overburden handling. Will the first cut be stockpiled and used to fill the last cut? When special handling is required, which is almost certain given the nature of some overburden and the need for some soil replacement materials, what assurance will be made that poor quality materials will be safely located in the backfill or in separate stockpiles, or that topsoil substitutes will be handled and stored as topsoil in a useful manner as required under Chapter 4, Section 2(b)(x)(A)? Please provide a more detailed overburden handling plan. Perhaps some of these details are observed in later sections. Please provide additional details not provided elsewhere.

Response DS 17

See Sections MP.4.3.5, MP.4.6 and MP.4.7. Revised text as requested.

Comment DS 18

Mine Plan, Section MP.4.3.4. The volumetric analysis shown in Table MP.4-4 and MP.4-5 may change depending on results of required additional overburden sampling and volumetric analysis. If the overburden depth overlying coal changes as a result of additional sampling, the volumetric analysis will also change. If post mining contour changes are necessary due to adjusted swell factors permit revision will probably not be required until the changed PMT exceeds plus or minus 20 feet of the approved at which time a Reclamation Plan revision will be required. This kind of detail should be included in the permit commitments.

Response DS 18

Revised text as requested.

Comment DS 19

Mine Plan, Section MP.4.6.1. The typical overburden sampling protocol as stated in Guideline 1 calls for one sample taken every 40 square acres of the permit area. Overburden sampling for underground mining operations differs from typical coal mine sampling protocols and is stated in the Coal Rules, Chapter 7, Section 1(a)(i)(A) which calls for overburden sampling and characterization on areas where surface operations will cause removal of overburden down to the level of the coal seam. Please

make changes to the text accordingly and perform additional overburden sampling where required.

Response DS 19

Revised text as requested.

Comment DS 20

Mine Plan, Section MP.4.3.5. A statement was made in this section that “Overburden stockpiles will only block ephemeral drainages if runoff control and sediment control measures are made and approved by WDEQ/LQD.” Placement of overburden in ephemeral drainages will require a discussion of how water will be diverted around the overburden stockpile to prevent impoundment of water in addition of a discussion of sediment control measures for the stockpile to prevent of-site impacts of erosion down-slope from the stockpile. The LQD recommends that no overburden stockpiles be placed in ephemeral drainages.

Response DS 20

Revised Exhibit MP.4-3.

Comment DS 21

Mine Plan, Tables MP.1-1, MP.1-2 and MP.4-1 must show the actual years for proposed progressions, or the year 1 progression must be tied to a specific year in the Mine Plan text.

Response DS 21

Revised tables as requested. Added note saying that Year 0 corresponds to the year 2016

Comment DS 22

Mine Plan, Tables MP.4-3 and MP.4-5. Topsoil volumes appear to be underestimated in TS- 2, TS-6, TS-10 and TS-11 while underestimating the proposed volume in TS-1. Also overburden volumes appear to be underestimated in OB-4, OB-7, OB-11, OB-14 and OB-15, and overestimated in OB-16, which may affect estimates presented in TableMP.4-4 as well.

Response DS 22

Volumes are estimated based on the stripping volumes and available backfill area with excess material going to and from stock pile for contemporaneous reclamation. No updates will occur in response to this comment.

Comment DS 23

Mine Plan, Exhibit MP.4-2 and MP.4-3 must show the dates (actual years) for the salvage of topsoil and removal of overburden, or year 1 must be tied to an actual year when operations will begin (2016, 2017, etc.). The map or tables in the Mine Plan must provide proposed years and volumes for stockpile construction as well.

Response DS 23

Revised Exhibits as requested. Added note saying that Year 0 corresponds to the year 2016 on all Exhibits with years.

Comment DS 30

Reclamation Plan, All Mine Plan Maps with progressions must show the actual years of the initial disturbance or mining activity, or the progression must be linked to a specific year in Reclamation Plan text. The maps must also include the contour interval.

Response DS 30

Revised Exhibits as requested.

Comment DE 1

Mine Plan, Figure MP.1.2 and page MP-3 – MSHA and best practices may require a safety berm on this safety bench which could require a wider bench. Figure MP.1.2 notes a minimum of 35' but the text on page MP-3 just states the bench will be 35' wide. There is a real possibility this safety bench might be used for light plants so it may need to be wider for access and small vehicle use as well as providing a safety bench.

Response DE 1

Revised text as requested.

Comment DE 2

Mine Plan, Table MP.1-1 – The total disturbance doesn't seem to match the overall disturbance listed for the trench mining and facilities. Please explain or correct.

Response DE 2

Revised table as requested.

Comment DE 3

Mine Plan, Section MP.2.3, page MP-9 – The 1st sentence would be better if it started, "The explosive materials...". The 2nd sentence should replace the word "detonating"

with “explosive”. The 5th sentence in the 2nd paragraph should include cast boosters. The 6th sentence in the 2nd paragraph should discuss storage of emulsions, water gels, and slurries also. This section should also commit to proper signage of the explosive storage area. Please correct.

Response DE 3

Revised text as requested.

Comment DE 4

Mine Plan, Section MP.5.7.5, page MP-34 – The word “of” in the 2nd line of the last paragraph should be “or”. Please correct.

Response DE 4

Revised text as requested.

Comment DE 5

Mine Plan, Section MP.6.1, page MP-39 – The 1st sentence of the 1st full paragraph needs some improvement so it reads properly and makes sense. Please correct.

Response DE 5

Revised text as requested.

Comment DE 6

Mine Plan, Section MP.14.2, page MP-55 – The 2nd paragraph discusses the use of “cast primers”. The term should be “cast boosters” as it doesn’t become a primer until the detonator is added or detonating cord is attached to it. The discussion of priming holes should describe the use of a cast booster and how it is made-up to become a primer, i.e. with detonating cord or a detonator (blasting cap). Please correct.

Response DE 6

Revised text as requested.

Comment DE 7

Mine Plan, Section MP.14.3.2, page MP-56 – In the 2nd line the item “(primer with detonator)” should be changed to “(cast booster with detonator)”. Please correct

Response DE 7

Revised text as requested.

Comment DE 8

Mine Plan, Section MP.14.3.2, page MP-56 – The 2nd paragraph discusses powder factors in coal and overburden and the high end of the ranges is extremely high for the type of rock and coal in this area. RAMACO should eliminate the range and simply state powder factors will be adequate to effectively fragment the overburden and coal.

Response DE 8

Revised text as requested.

Comment DE 9

Mine Plan, Section MP14.3.3, page MP-56 – RAMACO should reword this to say that initiation will be done using non-electric or electric systems, which may include electronic detonators, shock tube detonators, detonating cord, electric detonators or a combination of these. Igniter cord is used to initiate safety fuse and it's highly unlikely that any safety fuse will be used at this mine. Please correct.

Response DE 9

Revised text as requested.

Comment DE 10

Mine Plan, Section MP.14.4, pages MP-56 & 57 – It is probable that emulsions will also be stored on site so it should be mentioned since emulsion/ANFO blends are the most widely used product in wet holes. Please correct.

Response DE 10

Revised text as requested.

Comment DE 11

Mine Plan, Section MP.14.6, pages MP-57 & 58 – Residents who request a pre-blast survey must make the request to the permittee and the Administrator of Wyoming Land Quality Division (LQD). The permittee is responsible for getting the pre-blast survey done and distributed to the person that requested it and the LQD Administrator. Please correct.

Response DE 11

Revised text as requested.

Comment DE 12

Mine Plan, Section MP.14.7, pages MP-58 & 59 – LQD will not approve protecting uninhabited structures (what LQD refers to as engineered structures) at 8.0 inches

per second (ips) of peak particle velocity. LQD would allow a maximum limit of 5.0 ips. RAMACO would have to assure that this limit was not exceeded by the use of a seismograph at these structures on all blasts. RAMACO could apply for a modified scale distance factor to show compliance with this limit of 5.0 ips by submitting a vibration study and doing a regression analysis to show the allowable ppv is not exceeded at a 95% confidence level. However, this will require the vibration study be submitted with seismograph records from shots in the mining area so it cannot be done until after some blasting has been done at the mine. Please correct this text.

Response DE 12

Revised text as requested.

Comment DE 13

Mine Plan, Section MP.14.8.1, page MP-60 – The discussion on typical pattern size should be changed to more general language. Using the parameters given the powder factor used would be approximately 0.16 lbs./CY using ANFO and in the 0.23-0.25 lbs./CY range when shooting an emulsion blend. These powder factors are not high enough to adequately fragment the overburden. Please correct.

Response DE 13

Revised text as requested.

Comment DE 14

Mine Plan, Section MP.14.8.1, page MP-60 – The 2nd paragraph says if water is in the holes a slurry or water gel explosive will be used. Most likely an emulsion/ANFO blend with good water resistance will be used in wet holes and not a slurry or water gel. Please correct.

Response DE 14

Revised text as requested.

Comment DE 15

Mine Plan, Section MP.14.8.1, page MP-60 – The 3rd paragraph discusses the explosive weight per hole and the powder factors. The explosive densities listed are correct but the pounds per hole and powder factors are incorrect. In a 7.875" hole and with a density of ANFO of 0.85 g/cc the pounds/foot of hole is 17.95 lbs. and with 24' of powder column the pounds/hole is 431 lbs., making the powder factor = 0.16 lbs./CY. Similarly using an emulsion blend of 1.32 g/cc the pounds/foot = 27.87 lbs. and the pounds per hole would be 669 lbs. so the powder factor = 0.25 lbs./CY. In the 50' hole described with 26' of stemming and 24' of powder the powder distribution is

poor so it would likely lead to blocky material near the top of the bench. Please correct.

Response DE 15

Revised text as requested.

Comment DE 16

Mine Plan, Section MP.14.8.2, page MP-61 – Drilling a 35' x 35' pattern in a 15' thick coal seam with a 7.875" hole and 4.5' of stemming will probably result in excessive flyrock, stemming ejection, high airblast and hard zones between the holes. Expecting to stem 4.5' is not realistic – in the field the blaster is going to try to hold for 4' or 5' of stemming. Again RAMACO discusses using slurry or water gel in wet hole when an emulsion/ANFO blend with high water resistance would probably be used. Please correct. Also the powder factor listed for coal is probably a little high so it would be better to just say that the powder factor will sufficient to fragment the coal for the prime movers. Please correct.

Response DE 16

Revised text as requested.

Comment DE 17

Mine Plan, Section MP.14.10, page MP-63 – The last bullet item says that detonation during electric storms might be a reason for unscheduled blasting. This is confusing because it makes it sound like the operator would shoot during electric storms and the only safe thing to do when an electric storm approaches is clear the pattern and keep everyone a safe distance away until the storm passes. Please correct.

Response DE 17

Revised text as requested.

Comment DE 18

Mine Plan, Addendum MP-7, Blaster's Log – Under the "Holes" heading RAMACO should use "burden" not the term "burden spacing". On the 2nd page the word "signiture" should be changed to "signature". Please correct.

Response DE 18

Revised text as requested.

Comment MK 23

Mine Plan, Section MP.20 Alluvial Valley Floors, The discussion of underground mining in AVFs does not seem necessary given there is no plans for underground mining at the Brook Mine. Furthermore, it is conceivable that circumstances could exist where underground mining of an AVF would not be allowed by the LQD. For example, if the AVF was significant to farming and underground mining of the AVF would result in surface effects such that material damage to the AVF would occur. (MDK)

Response MK 23

While no underground mining is proposed within delineated AVFs, the mine maintains this option. If underground mining is ever planned under the AVF, the appropriate revisions will be made. Revised text as requested.

Comment MK 46

Mine Plan, Section MP.4.1 Mining Sequence, 20. On Exhibit MP.4-1, please attempt to show the areas that would be highwall mined versus surface mined. These layers are currently not found until Exhibit MP.15-1. Alternatively, the text in this Section could specify that the areas to be highwall versus surface mined are shown in Exhibit MP.15-1. (MDK)

Response MK 46

Revised text as requested.

Comment MK 47

Mine Plan, Section MP.5.1 Surface Drainage and Erosion Plan, 21. Only Slater Creek and Hidden Water Creek are labeled and shown in Exhibit MP.5-1. In order to better evaluate the Hydrologic Control Plan, please provide labels and locations for the other stream channels, including Tongue River, Goose Creek, East Fork Earley Creek, and the other unnamed channels (as shown on the USGS 24K Quad) on the proposed permit area. (MDK)

Response MK 47

Revised Exhibit MP.5-1 as requested.

Comment MK 48

Mine Plan, Section MP.5.1 Surface Drainage and Erosion Plan, 22. Exhibit MP.5-1 shows overburden stockpiles OB-13 and OB-12, as well as topsoil stockpile TS-6, occurring directly over the Slater Creek channel. The Exhibit does not show any diversion ditches to be used in these locations. Please either move the location of the

stockpiles or present a plan to use a diversion to route Slater Creek around the stockpiles. (MDK)

Response MK 48

Revised Exhibit MP.5-1 as requested.

Comment MK 49

Mine Plan, Section MP.5.2 Sedimentation and Wastewater Impoundments, 23. Exhibit MP.5-1 shows the locations of two “sediment basins”. Are these considered the same as “sedimentation impoundments”, as discussed in this Section? If so, the designs for these two impoundments are not found within the Mine Plan. (MDK)

Response MK 49

The “sediment basins” shown in Exhibit MP.5-1 are not considered the same as the “sediment impoundments(reservoirs)” . Sediment Basins are considered an Alternative Sediment Control Measure and are discussed in Addendum MP-1. As such, the design for these “sediment basins” are not included in the Mine Plan. However, the design criteria and construction standards for “sediment basins” are similar to those discussed within Section MP.5.2 of the Mine Plan. Revised text as requested.

Comment MK 50

Mine Plan, Section MP.5.3 Flood Control, 24. This section discusses flood control reservoirs but it is not mentioned how many flood control reservoirs would be constructed and where their locations would be. Please provide this information to comply with LQD Coal Rules and Regulations, Chapter 2, Section 5(a)(i)(D)(IV). (MDK)

Response MK 50

Revised text as requested.

Comment MK 51

Mine Plan, Section MP.5.4 Diversions, 25. This section mentions permanent diversions, but there are no apparent plans for permanent diversions. Please discuss if permanent diversions are anticipated as part of the mining operation, or if all diversions will be temporary. (MDK)

Response MK 51

Revised text as requested.

Comment MK 52

Mine Plan, Section MP.5.4 Diversions, 26. Exhibit MP.5-1 shows only one diversion ditch for Hidden Water Creek in T57N, R84W, Section 9. Please discuss this particular diversion and its typical design in more detail in Section MP.5.4. (MDK)

Response MK 52

Revised text as requested. Add design exhibit of the Hidden Water diversion ditch.

Comment MK 53

Mine Plan, Section MP.5.5 Culverts, 27. Please provide a brief statement that commits to a periodic culvert inspection and maintenance plan to ensure that culverts will function properly over time. (MDK)

Response MK 53

Revised text as requested.

Comment MK 54

Mine Plan, Section MP.5.8 Mine Pit Dewatering Plan, 28. The first sentence references a sedimentation reservoir. Where is the location of this sedimentation reservoir? Are these the “sediment basins” shown in Exhibit MP.5-1? If not these sedimentation reservoirs need to be added to this Exhibit. (MDK)

Response MK 54

Revised text as requested.

Comment MK 55

Mine Plan, Section MP.5.8 Mine Pit Dewatering Plan, 29. The first paragraph references treating and discharging pit water. Please also reference in the text that appropriate WDEQ/WQD discharge permits (e.g., WYPDES) will be obtained prior to any discharge. (MDK)

Response MK 55

Revised text as requested.

Comment MK 56

Mine Plan, Section MP.6.1 Surface Water, 30. Exhibit MP.1-1 shows surface disturbance directly over a few areas of Slater Creek and Hidden Water Creek. Please identify the source of disturbance in these areas. Direct disturbance of the channel should be avoided unless there is a plan for a diversion to route the stream around the disturbance. (MDK)

Response MK 56

See response to Comment MK 76, 88 and 99. Revised text as requested.

Comment MK 57

Mine Plan, Section MP.6.1 Surface Water, 31. The mining trenches are often discussed with reference to Exhibit MP.1-1. However, the trenches are not shown on this Exhibit. Please add the locations of the trenches to Exhibit MP.1-1. (MDK)

Response MK 57

Revised Exhibit MP.1-1 as requested.

Comment MK 58

Mine Plan, Section MP.6.1 Surface Water, 32. On Page MP-39, in the first carryover paragraph from the previous page, it states that any surface runoff to come in contact with mining disturbance will be treated prior to discharge. Please also reference in the text that appropriate WDEQ/WQD discharge permits (e.g., WYPDES) will be obtained prior to any discharge. (MDK)

Response MK 58

Revised text as requested.

Comment MK 59

Mine Plan, Section MP.6.1 Surface Water, 33. Please discuss the diversion ditch for Hidden Water Creek in the first carryover paragraph on Page MP-39. (MDK)

Response MK 59

Revised text as requested. See Hidden Water Creek diversion Exhibit MP.5-2 for further details.

Comment MK 60

Mine Plan, Section MP.6.1 Surface Water, 34. On Page MP-40, in the first carryover paragraph from the previous page, it states that any surface runoff to come in contact with mining activities will be treated prior to discharge. Please reference in the text that appropriate WDEQ/WQD discharge permits (e.g., WYPDES) will be obtained prior to any discharge. (MDK)

Response MK 60

Revised text as requested.

Comment MK 61

Mine Plan, Section MP.6.1 Surface Water, 35. On Page MP-40, there is a sentence: “The surface disturbance activities will have temporary impacts on Slater Creek geomorphology including ground cover and soil erodibility”. This statement is unclear. Are the impacts to the actual Slater Creek channel or the uplands and other tributaries in the watershed? Is it reduced ground cover and increased soil erodibility? Please provide a more explicit description of the possible impacts. (MDK)

Response MK 61

See response to Comment MK 56, 76, 88 and 99. Revised text as requested.

Comment MK 62

Mine Plan, Section MP.6.1 Surface Water, 36. Please provide a discussion on whether the proposed mining operation would affect surface water quality such that designated uses would be affected on the major streams on and adjacent to the proposed permit area. (MDK)

Response MK 62

Revised text as requested.

Comment MK 63

Mine Plan, Section MP.6.1 Surface Water, 37. The text describes possible reductions in peak flows and storm volumes. Please describe in the PHC if the proposed mining operation will have any effects on nearby or downstream surface water rights. (MDK)

Response MK 63

Revised text as requested.

Comment MK 64

Mine Plan, Section MP.6.1 Surface Water, 38. Please add a brief statement to the PHC that if it is determined that the mining operation affects a surface water right, that water right would be replaced with a water source of similar quantity and quality as provided by W.S. § 35-11-415(b)(xii). (MDK)

Response MK 64

Revised text as requested.

Comment MK 65

Mine Plan, Section MP.6.1.1 Land Erosion Stability, 39. It is unclear the intent of this section. It seems to be out of place in the mine plan, as it discusses the USLE in the

context of only native and reclaimed conditions. Furthermore, no data other than the K factors are presented in Mine Plan Tables (Table MP.6.1). The Reclamation Plan also does not discuss applying the USLE, so it would seem that Section MP.6.1.1 should be removed unless a USLE analysis is completed of pre- vs during- vs postmine erosion predictions. (MDK)

Response MK 65

Section MP.6.1.1 has been removed.

Comment MK 66

Mine Plan, Section MP.7.1 Surface Water Monitoring, 40. It is unclear why reservoirs will be monitored in the operational monitoring program when these features were not sampled for during baseline characterization. If the reservoirs have the potential to be affected by the mining operation they should be sampled prior to mining with this information presented in Appendix D6. (MDK)

Response MK 66

Revised text as requested.

Comment MK 67

Mine Plan, Section MP.7.1 Surface Water Monitoring, 41. Please add the reservoir monitoring locations listed in Table MP.7-1 to Exhibit MP.7.1. (MDK)

Response MK 67

Revised Exhibit MP.7.1 as requested.

Comment MK 68

Mine Plan, Section MP.7.1 Surface Water Monitoring, 42. Please add the northing/easting State Plane coordinates for the surface water monitoring stations to Table MP.7.1. (MDK)

Response MK 68

See response MK

Comment MK 69

Mine Plan, Section MP.7.1 Surface Water Monitoring, 43. Please identify what type of water quantity data will be generated from the continuous stage monitoring. For example, will mean daily flow rates and/or peak daily flow rates be estimated, as these would likely be submitted to the LQD in the Annual Report? (MDK)

Response MK 69

Revised text as requested.

Comment MK 70

Mine Plan, Section MP.7.1 Surface Water Monitoring, 44. The text in the last paragraph on Page MP-45 states that water quality samples will be collected from a single station using an ISCO automatic sampler. Please identify in the text which station this is. Also, please explain the rationale for using an ISCO sampler at only one of the four stream monitoring sites. (MDK)

Response MK 70

Revised text as requested. The station equipped with the ISCO automatic sampler was the only station equipped with such a device due to the stations location as well as expected flows. Quarterly grab samples taken at stations upstream of mining disturbances will give an accurate representation of water quality entering the permit boundary. Since the station equipped with an automatic sampler is located near the area in which Slater Creek exits the permit boundary, an automatic sampler allows the operator see if the mining activities of the Brook Mine have an impact on the water quality of Slater Creek as the highest chance water quality is affected will occur during precipitation events. An automatic recorder was not installed at the station downstream of disturbances on Hidden Water Creek because the recorded and modeled flows for the drainage are extremely low. No observable flow had been recorded on any surface water station along Hidden Water Creek, despite precipitation events having occurring. As such, any data collected by an automatic sampler on Hidden Water Creek would occur during extreme precipitation events in which the flows through Hidden Water Creek would likely have high turbidity and be an unrealistic representation of the water quality within Hidden Water Creek.

Comment MK 71

Mine Plan, Section MP.7.1 Surface Water Monitoring, 45. The text in the first paragraph on Page MP-46 states that data will be evaluated to determine if any surface water and groundwater interactions exist. It would seem that any interactions should have already been identified during the baseline characterization of the hydrological system on and near the proposed permit area. It does not appear that the permit application discusses surface/groundwater interactions. (MDK)

Response MK 71

Revised text as requested. The monitoring is a continuation of the baseline monitoring sites.

Comment MK 72

Mine Plan, Section MP.8 Water Use, 46. Please state in the text that all water from surface reservoirs or wells will be used under appropriate permits from the State Engineer's Office (SEO). (MDK)

Response MK 72

Revised text as requested.

Comment MK 73

Mine Plan, Section MP.8 Water Use, 47. It is advised that the applicant discuss with the SEO-Interstate Streams Division any implications that water use may have under the Yellowstone River Compact. (MDK)

Response MK 73

Revised text as requested.

Comment MK 74

Mine Plan, Addendum MP-6 Subsidence Control Plan, Section MP.6.3 Subsidence Monitoring and Assessment and Section MP-6.4 Subsidence Control and Remediation, 48. The text states that subsidence monitoring would be discontinued if no evidence of subsidence occurred after six months after highwall mining. Please include a clarifying statement that the applicant would remediate subsidence up until bond release is approved, even if the subsidence was detected later than the six months of initial monitoring. (MDK)

Response MK 74

Please see revision to last paragraph of Addendum MP-6

Comment MuK 32

Mine Plan, 32. Please provide an electronic copy of the groundwater model referenced in Addendum MP-3. In addition, please provide the GIS projection coordinate of the model files that will enable the LQD to plot the model results in GIS for the purposes of producing the CHIA (Cumulative Hydrologic Impact Assessment). The LQD review of the model files might potentially generate additional comments, clarifications or questions. (MK)

Response MuK 32

An electronic copy of the groundwater model Will be provided under separate cover. The elements in the model are based on the Wyoming East Central NAD 83 state plane coordinate system. To convert from model Grid to the state plane coordinates the X

offset is 1367387.512 and the Y offset is 1915004.382. There is no rotation from the model grid to the state plane coordinate system.

Comment MuK 33

Mine Plan, MP.1.1 Type of Mine, 33. Page MP-1 states, “Below the Tongue River Member is the Lebo shale member of the Fort Union Formation which contains the Masters Seam (Cardno MM&A, October 2013).” This statement is not consistent with Table D5.3-1, Page D5-T1 and other descriptions in Appendix D5. Table D5.3-1 indicates Masters Coal seam is in the Tongue River Member. Please clarify and make appropriate changes throughout the submittal (Example: MP 4.4). (MK)

Response MuK 33

Revised text as requested.

Comment MuK 34

Mine Plan, MP.1.1 Type of Mine, 34. Major coal seams on the Brook Mine include: Dietz (1,2,3), Monarch, Upper Carney, Lower Carney and Masters.”. Dietz (1,2,3) coal seam is not included in the description presented in Section D5.3.3.3, Appendix D5. Please clarify: (i) the seams that will be mined by the Brook Mine and (ii) include the description of all the coals seams as appropriate in Appendix D5 and Appendix D6. (MK)

Response MuK 34

Please refer to Mine Plan Section MP.4.4.1 for targeted coal seams at the Brook Mine.

Comment MuK 35

Mine Plan, MP.5.8 Mine Pit Dewatering Plan, Consider using the groundwater model referenced in Appendix D-3 to provide a description for a range of estimates on anticipated dewatering rates/volumes and groundwater inflows to the mine pit. (MK)

Response MuK 35

The text in Section MP.5.8 is to indicate that water entering the pit from either groundwater or surface water will be controlled using sumps and treated prior to discharge.

Comment MuK 36

Mine Plan, MP.5.8 Mine Pit Dewatering Plan, 36. Please clarify the anticipated effects of the faults on the dewatering plan or groundwater impacts during mining. (MK)

Response MuK 36

Since the water will be collected in a sump, treated, and then discharged, the faults should have no effect.

Comment MuK 37

Mine Plan, MP.5.9 Dewatering Wells, 37. Please provide a brief discussion on the anticipated quality of groundwater removed at various stages of mining. (MK)

Response MuK 37

Revised text as requested.

Comment MuK 38

Mine Plan, MP.5.9 Dewatering Wells, 38. If groundwater is discharged into a stream channel, anticipated discharge flow rate, water quality, and estimated seasonal discharge of the groundwater should be tabulated. The availability and suitability of this water for downstream water users should also be evaluated. Please clarify if this is an expected mechanism to discharge pumped groundwater. (MK)

Response MuK 38

Revised text as requested.

Comment MuK 39

Mine Plan, MP.5.8 Groundwater Rights, Please include a description on any expected degradation of groundwater quality caused by the mining operation (including lateral flow through spoils) in the adjudicated wells. (MK)

Response MuK 39

Revised text as requested.

Comment MuK 40

Mine Plan, MP.6.2.Groundwater, 40. Please provide a brief discussion on any hydrologic effects caused by anticipated changes in recharge to the aquifers during mining. (MK)

Response MuK 40

Revised text as requested.

Comment MuK 41

Mine Plan, MP.6.2.Groundwater, 41. Please provide an assessment of any subsidence effects (Addendum MP-6) on the hydrologic system during operations. (MK)

Response MuK 41

Revised text as requested.

Comment MuK 42

Mine Plan, MP.6.2.Groundwater, 42. Please discuss if there are any expected impacts on groundwater quality caused by subsidence. (MK)

Response MuK 42

Revised text as requested.

Comment MuK 43

Mine Plan, MP.6.3.2 Plan to Mitigate the Impacts on Groundwater, 43. If the quality or quantity of adjudicated water supplies are affected, then an alternative source should be identified as part of the mitigation plan. Please provide a statement to meet this statutory requirement (W.S. § 35-11-415(b)(xii)). (MK)

Response MuK 43

Revised text as requested.

Comment MuK 44

Mine Plan, MP.7.2 Groundwater Monitoring, 44. Please clarify the lack of any shallow monitor wells near Hidden Water Creek, Goose Creek and Tongue River alluvium and if this will be an impediment to completely characterize the groundwater impacts during mining. (MK)

Response MuK 44

Hidden Water Creek has no alluvium therefore, no shallow well can be installed. Goose Creek in the area of the permit is through a reclaimed mine area (pre-law) therefore there is not alluvium. As discussed throughout we will not impact the Tongue River Alluvium. RAMACO will add wells in the Tongue River Alluvium.

Comment MuK 45

Mine Plan, MP.7.2 Groundwater Monitoring, 45. Please clarify the possibility of any of the monitor wells shown in Exhibit MP.7-7 being discontinued due to any constraints in the proposed-mine plan (example: mined through). (MK)

Response MuK 45

Revised text as requested.

Comment MuK 46

Mine Plan, MP.8 Water use, 46. Page MP-47 states, “Industrial water will be obtained from groundwater wells or from water collected in sediment and flood control reservoirs.” Please clarify if the groundwater wells mentioned in this statement are wells that will be exclusively used as industrial supply wells or if they are same as dewatering wells. (MK)

Response MuK 46

Revised text as requested.

Comment MuK 47

Mine Plan, MP.8 Water use, 47. Page MP-48 states, “It is estimated that the total water use will be approximately 400 million gallons per year.” Please provide a discussion comparing the reported water use by other mines of similar size in the Powder River Basin.

Response MuK 47

No record of reported water use was discussed in the annual reports submitted to WDEQ for several different mines within the Powder River Basin. As such, a comparison was unable to be made.

Comment MuK 48

Mine Plan, MP.8 Water use, 48. Page MP-48 states, “It is estimated that the total water use will be approximately 400 million gallons per year.” Please provide a comparison of this estimated total water use against the various estimated water sources available during mining (Example: from dewatering wells). It will be very helpful to provide a discussion on contingency measures during extreme wet/dry years or if the proposed mine plan does not require extensive dewatering. (MK)

Response MuK 48

RAMACO is currently working to solidify the necessary water right for this water. The sources and associated amounts are in discussions and therefore not presented at this time.

Comment MuK 49

Mine Plan, MP.8 Water use, 49. Please clarify if there is any expected variability in this projected water use (example: is it closely related to the mine plan). (MK)

Response MuK 49

Revised text as requested.

Comment MuK 50

Mine Plan, Addendum MP-3 Groundwater Model, 50. Page Addendum MP-3-19 states, “Since, most of the wells within the modeled domain are stock wells with intermittent pumping and completed in geologic strata below the Masters Coals, they are relatively inconsequential to the groundwater system modeled in this report.” Please provide a Figure (or reference) to show these wells, their depths and discuss on why they are hydrogeologically isolated from the effects of the proposed mine. (MK)

Response MuK 50

All the groundwater rights are tabulated within Appendix B of the adjudication volume and Exhibits 5 and 8 in the adjudication volume show the locations of each respective groundwater right. Please note that adjudication Exhibits 5 and 8 include monitor wells in addition to stock and domestic wells so all the wells shown on the exhibits are not necessarily wells that are being used as water supply wells. In fact, almost all the completed water wells shown on Exhibit 5 of the adjudication volume within the Brook Mine permit area are actually monitor wells. The Cross Sections presented in Exhibit 2 of Addendum D5-3 show the depth of the coal seams at various locations within the Brook Mine Permit. For comparison, the depths of each well are listed in the tabulation in Appendix B of the adjudication volume.

The statement on Page MP-3-19 “they (the wells) are relatively inconsequential to the groundwater system modeled in this report” means that the wells are not believed to be significant stressors to the groundwater system because of their relatively low pumpage rates. This statement should not be interpreted to mean that all of the stock and domestic wells in the area are hydrologically isolated from the coals proposed for mining within the Brook Mine Permit area. In fact, Section 4.9 of Addendum MP-3 specifically describes 26 wells that, based on their depths and locations, are likely completed within the coals. The expected impacts to these wells were assessed as part of the modeling exercise. Based on a comparison between the reported depths in the water rights tabulation in Appendix B of the adjudication volume and the geologic cross sections in Addendum D5-3, the other stock and domestic wells in the area were determined to be completed either in the Tongue River alluvium, or deeper strata below the Carney coal and do not have a direct hydrologic connection to the coals proposed for mining in the Brook Mine and were not specifically evaluated in the groundwater model.

Along the eastern edge of the model domain there are a large number of CBM wells and, based on available data presented in the water rights tabulation in Appendix B of the Adjudication volume, these wells are likely pumping water from the Carney and Masters coal seams. The impacts from the CBM wells are described in detail within

later sections of the report. However, the text on page MP-3-19 does not speak to the CBM wells. Minor changes to the text on page Addendum MP-3-19 and additional explanatory text have been added to this page to provide further clarification.

Comment MuK 51

Mine Plan, Addendum MP-3 Groundwater Model, 51. Page Addendum MP-3-20 states, “The faults are significant in lateral extent and form natural no flow boundaries”. Please provide a discussion (or refer to a discussion) on how these faults were determined to be no flow boundaries. (MK)

Response MuK 51

Faulting within the permit area was mapped by B.E. Barnum on the USGS Monarch Quadrangle. As noted in Section D5.3.2, Barnum indicates fault displacements on the order of 50 feet within the mine area. Lithologic logs provided in Addendum D-5-3 demonstrate that the dominating lithology in the column is claystone and coal thicknesses are less than 20 feet. This offset geology from faulting results in a claystone hanging or footwall adjacent the coal aquifer and therefore discontinuity of the aquifer and an assumed hydrologic flow boundary.

Comment MuK 52

Mine Plan, Addendum MP-3 Groundwater Model, 52. Please clarify the reason for not estimating vertical hydraulic conductivity of the interburden using an aquifer test. (MK)

Response MuK 52

Response to this comment is partially clarified in responses to MK’s Comments 18 and 19 above. During the aquifer test conducted at the 578409 well cluster no response was observed across the interburden, therefore, the vertical hydraulic conductivity of the interburden was too low to measure in the aquifer test. Furthermore, the static water levels in the Masters and Carney coal seams are different which demonstrates that the hydraulic conductivity of the interburden is very low. Therefore, literature values were utilized and adjusted within reasonable bounds to improve model calibration.

Comment MuK 53

Mine Plan, Addendum MP-3 Groundwater Model, 53. Page Addendum MP-3-25 states, “With no unnatural stresses on the system ...” Please provide a discussion of the CBM impacts on the water levels. It appears that the hydrographs presented in Appendix D6 do not show the impacts of CBM. (MK)

Response MuK 53

There are multiple CBM production wells located along the eastern side of the groundwater domain. In order for the CBM producers to be able to produce gas it is necessary to significantly lower the water levels in the coal to release the gas in the coal fractures. CBM production began in this area around 1999. Therefore, it was conservatively assumed that CBM production has already resulted in lowering the water levels in the coal aquifers to the top of the coal aquifer along the eastern edge of the model domain and the general head boundaries were set accordingly to simulate this effect. Even though water level data in the coal aquifer prior to CBM production is limited because of the lack of monitor well data, prior to CBM production, the potentiometric head in the coal was estimated to be significantly higher than the top of coal.

The hydrographs presented in Appendix D6-9 do not show the impacts of CBM because they show water level changes over a one year period roughly 13 years after CBM production began in the area, and if the wells were going to be impacted by CBM, it is likely that they have already been impacted. Please note that the model assumed that CBM production would continue into the future resulting in the water levels in the coal being maintained at unnaturally low levels. Therefore, the model has conservatively estimated the combined impacts from both CBM and the proposed coal mining activities. Currently, a large majority of the CBM wells are being plugged and abandoned which may result in higher than predicted water level recovery rates in the coal aquifer.

Text edits were made to page MP-3-25 to help clarify the discussion.

Comment MuK 54

Mine Plan, Addendum MP-3 Groundwater Model, 54. There are two sub-sections for recharge, Section 2.5.3 and Section 2.6.1. Please clarify/consolidate. (MK)

Response MuK 54

The two subsections have been combined into one subsection under Section 2.6.1

Comment MuK 55

Mine Plan, Addendum MP-3 Groundwater Model, 55. Page Addendum MP-3-26 states, "... drain cells were placed in the model to simulate seeps from the outcrops." Please provide a discussion on the evidence for seeps (or reference) observed during field surveys. Were there any field data collected on the location and flow rates of these seeps? (MK)

Response MuK 55

Evidence of seeps from outcrops can be seen in Color Infrared Imagery (CIR), which is included in the permit as Exhibit D11.1-1. The areas of seepage are manifested on the CIR imagery as areas with more vegetation. Evapotranspiration from the vegetation growing along the seep removes all the water before it emanates from the formation into the drainage. Therefore, no measurements of the seepage rate at the outcrops were possible or are available. Additional discussion explaining the need for drain cells within the model is provided in Section D6.2.2. Also, text was added to Section D6.2.2 to clarify that no field flow measurements were available.

Comment MuK 56

Mine Plan, Addendum MP-3 Groundwater Model, 56. Page Addendum MP-3-27 states, "River cells from MODFLOW's river boundary conditions package were placed in the model to simulate the Tongue River and Goose Creek." Please provide a conceptual discussion supported by field observations on the type/nature of interaction of these streams with groundwater (Gaining stream vs. losing stream). (MK)

Response MuK 56

As described in Section 2.3 of MP-3, the dip of the strata in the project area is generally east-southeast into the Powder River Basin and the groundwater flow direction follows this trend regionally. As such, the Tongue River comes into contact with the coal seams of interest near the updip side of the coal seams. Interactions between the surface water and groundwater occur at those points where permeable formations sub-crop into alluvial/surface water bodies. Both the Carney and the Masters coal subcrop under the Tongue River near the western edge of the model domain. Conceptually these subcrops are the only places where the coals would be in contact with the surface water. Section 2.3 of Addendum MP-3 describes the conceptual groundwater flow in some detail.

As described in Addendum MP-3 Section 2.3, the Carney coal is largely dry to the north and west of its subcrop into the Tongue River alluvium and becomes saturated at an elevation just above the elevation where it subcrops beneath the Tongue River alluvium. Therefore it is likely that the Carney Coal would lose water to the Tongue River alluvium. The potentiometric surface in the Masters Coal is roughly the same as the potentiometric surface of the Tongue River where the Masters coal subcrops beneath it. A review of the steady state groundwater model shows that where the River boundary cells are immediately above the Masters Coal the net effect is that the River boundary cells input approximately 3.2 gpm into the model. Conversely, near the upper and lower Carney Coal/Tongue River outcrops the River cells are taking roughly 0.16 gpm out of the model. Since the coal outcrops occur beneath the Tongue River there is no way to field verify these flows but conceptually they do seem reasonable.

The river boundary cells extend to the bottom of the layer in which they are placed as discussed in response to comment MUK 74 and MUK 84. The River boundary cells were placed in Layer 1 to the confluence of Goose Creek and the Tongue River which extends east of the area where the Carney Coal would be in communication with the Tongue River alluvium. Due to the fact that the River boundary cells extend to the bottom of the layer they do provide a conduit for the River to provide recharge into the Carney Coal even though the River would be physically separated from the coal by multiple zones of low permeability shales. The estimated recharge occurring in this area from the Tongue River to both layers 1 and 2 is approximately 8 gpm. The discharge into the coals is likely conservatively overestimated and not all of the 8 gpm would necessarily end up in the coal as some of it also discharges to layer 1. As such, the model conservatively estimates that up to 11.2 gpm would be discharged from the river to the coals or overburden between the Carney Coal and the Tongue River.

The strata located above the coal seams of interest is generally claystone with low permeability as discussed in MP-3 Section 2.2. Therefore, interaction of groundwater between these units and the Tongue River or Goose Creek is very limited. Within the model domain, the Tongue River Alluvium does have large deciduous trees and other vegetation immediately adjacent to the river. Conceptually, evapotranspiration from the vegetation along the Tongue River would indicate that through the model domain the Tongue River is a losing Stream. Throughout most of the model domain where the Tongue River is present, there low permeability overburden strata between the Tongue River alluvium and the coal seams which hydrologically isolate the Tongue River from both the Masters and the Carney coal seams. Since Goose Creek is located in the eastern portion of the model domain where the coal is significantly below the alluvium and the clay intervals are even thicker, the Goose Creek alluvium is also hydrologically separated from the Masters and Carney Coals. The Goose Creek alluvium would likely see similar losses to evapotranspiration that would be observed in the Tongue River alluvium.

Comment MuK 57

Mine Plan, Addendum MP-3 Groundwater Model, 57. Please provide a discussion on any contribution of groundwater baseflow to the major surface water bodies within the permit boundary. (MK)

Response MuK 57

As described in the response to comment MuK 56, conceptually, very little groundwater base flow from the Carney and Masters coal seams are expected to contribute to the surface water bodies within the permit boundary. The mass balance table provided in response to comment MuK 73 demonstrates that much more water is expected to enter the groundwater system from the surface water bodies (river cells) than is contributed to the surface water bodies from groundwater baseflow.

Comment MuK 58

Mine Plan, Addendum MP-3 Groundwater Model, 58. In section 3.2 MODFLOW Input Files, was aerial recharge used as an input file? Please clarify if evapotranspiration was considered as a discrete input or lumped into net aerial recharge. (MK)

Response MuK 58

Yes, the recharge package was used as an input file. Section 3.2 of Addendum MP-3 was updated to include a discussion of the recharge package. The evapotranspiration (ET) package was not utilized in the model. To address the effects of ET, the recharge rates were adjusted down in proportion to the estimated losses created by ET. Within most of the model domain where evapotranspiration would occur, the low permeability overburden between the surface and the coal seams of interest provide a hydrologic barrier so the evapotranspiration was ignored in these areas.

Comment MuK 59

Mine Plan, Addendum MP-3 Groundwater Model, 59. Page Addendum MP-3-31 states, “Layer 1 – represents the coal overburden”. Please clarify if the alluvial aquifer was included in the model. Please provide justification for not considering the alluvial aquifer in the model. (MK)

Response MuK 59

As described in the responses to comments MuK 56 and MuK 57, the only place within the model domain where there is potential for interactions between any alluvial aquifers and the coal seams of interest is where the coal is directly below the Tongue River alluvium or Slater Creek colluvium. Where the coal is in direct contact with alluvium/colluvium, layer 1 (the coal overburden) was assigned a higher vertical hydraulic conductivity to allow the layer to better emulate the alluvial/colluvial aquifer in this location. This zone of higher hydraulic conductivity in layer 1 is depicted on Addendum MP-3 Figure 4.2-1. Groundwater Vistas does not allow discontinuous layers throughout the model domain so this allowed the alluvium/colluvium to be effectively be modeled without the need to add an additional layer across the top of the entire model domain. This helped to improve the computational efficiency of the model. Since the overburden has a very low hydraulic conductivity and hydrologically separates the coals from the other alluvial/colluvial deposits within a large portion of the model domain, there is no reason to model any additional alluvial/colluvial deposits. To help clarify this comment Figure 4.2-1, was prepared and sections 2.5 and 4.2 of MP-3 have been updated.

Comment MuK 60

Mine Plan, Addendum MP-3 Groundwater Model, 60. Page Addendum MP-3-31 states, “Layer 3- Carney Interburden. This interval is generally of low to very permeability in

the western portion of the Project Area”. Please clarify how the areas where Layer 3-Carney Interburden is absent are treated in the groundwater model. (MK)

Response MuK 60

Ground Water vistas does not allow discontinuous layers. Therefore, Layer 3 is continuous across the entire model domain. Where the coal seam coalesces on the east portion of the model, the Layer 3 interburden was modeled as coal by setting hydraulic properties of the layer equivalent to the values of the overlying and underlying coal seams. Additional text has been added to Section 4.2.1 of Addendum MP-3 to further describe how the hydraulic conductivities were assigned to layer 3.

Comment MuK 61

Mine Plan, Addendum MP-3 Groundwater Model, 61. Please include a discussion of the thickness of all model layers. (MK)

Response MuK 61

Addendum MP-3 Section 2.5 describes the thickness of the various coal seams. Additional text has been added to MP-3 Section 4.1 to generally describe the thickness of each layer. Following are the modeled thicknesses for each layer:

- Layer 1-The thickness for this layer varies throughout the model domain. Near the western side of the model the layer is often absent where all the strata geologically younger than the Carney coal has been eroded off. These areas are generally represented as no flow cells in the model. Within the eastern portion of the model Layer 1 can be substantial. In the model the maximum thickness of Layer 1 in the eastern side of the model domain was approximately 1,100 feet.
- Layer 2-The Upper Carney coal was modeled with a constant thickness of 7 feet throughout the model.
- Layer 3-The Carney coal interburden layer varied in thickness from 4 feet up to 15 feet within the active portion of the model.
- Layer 4-The Lower Carney coal was modeled with a constant thickness of 8 feet within the model.
- Layer 5 The Carney/Masters coal interbuden layer varied in thickness from 4 feet up to 107 feet within the model.
- Layer 6-The Masters coal was modeled with a constant thickness of 6 feet within the model.

Comment MuK 62

Mine Plan, Addendum MP-3 Groundwater Model, 62. Please include a justification for not considering the underlying zones beneath the Masters coal seam in the model. (MK)

Response MuK 62

The Masters coal is underlain by the Lebo Shale. The Lebo Shale is a thick (Appendix D5 Section D5.2.3), regional confining interval in the project area as described in Mine Plan Addendum MP-3 Section 2.1. There are no aquifer units identified within the model domain within the Lebo Shale with direct hydrologic connection to any of the elements of the model. Since the Lebo Shale is a regional confining unit, if it had been included in the groundwater model, it would have been assigned hydraulic parameters typical of a shale interval (very low hydraulic conductivity) and it would have essentially been a no flow barrier to the more permeable Masters coal above it. Groundwater Vistas treats the bottom of the model as a no flow boundary. Therefore, the Lebo Shale is for all practical purposes included in the model as a confining interval with the way the model is currently defined.

Comment MuK 63

Mine Plan, Addendum MP-3 Groundwater Model, 63. Please provide appropriate cross section(s) of the model grid overlaid with the drill hole data collected during baseline characterization. This will help the evaluation of the adequacy of model layer thicknesses against the stratigraphic field data. (MK)

Response MuK 63

As noted in Addendum MP-3 Section 4.1, the Groundwater model layers were developed from a 3D geologic model developed from drill hole data within the project area developed for the purposes of making volumetric coal estimates. Minor updates to the surfaces were made where new data provided by additional exploration drilling was completed. An additional figure was developed (Addendum MP-3 Figure 4.1-3) and included in Addendum MP-3 that depicts actual cross sections cut from the groundwater model. Addendum D5-3 of Appendix D5 includes geologic cross sections with drill hole data that can be compared back to the actual cross sections included in Figure 4.1-3 of Addendum MP-3.

Comment MuK 64

Mine Plan, Addendum MP-3 Groundwater Model, 64. Please clarify how the layers were modeled to represent the confined/unconfined aquifer types. (MK)

Response MuK 64

Groundwater Vistas has a “layer type” control that was set to #5: Confined/Unconfined, which allows the model to determine whether to use storativity or specific yield for the storage coefficient based on the elevation of the water elevation vs. formation tops. Groundwater Vistas handles the aquifer type classification without further inputs.

Comment MuK 65

Mine Plan, Addendum MP-3 Groundwater Model, 65. In addition to model calibration, please provide justification for the recharge rates applied in the model including any literature references. (MK)

Response MuK 65

The initial recharge rates utilized in the model were initially estimated based on a USGS study (Water-Resources Investigations Report 01-4278) conducted on the eastern side of the Powder River basin and the Black Hills area. The study entitled, “Estimated Recharge to the Madison and Minnelusa Aquifers in the Black Hills Area, South Dakota and Wyoming, Water Years 1931-98.” was prepared by JM Carter and D.G Driscoll. In the study Carter and Driscoll reported recharge rates varying from 0.04 inches per year to 2.93 inches per year. The 2.93 inch per year recharge rate was reported within the Madison limestone formation outcrops in the Black Hills while the lower range of recharge rates reported by Carter and Driscoll were estimated for areas in the eastern periphery of the Powder River Basin where the precipitation and soil types are similar in nature to the Brook Mine Permit area. Since calibrated recharge rates in the key recharge areas (the coal outcrops and the scoria outcrops) were within the range of values developed by Carter and Driscoll, the recharge rates used in the model are considered reasonable. Please note that the recharge rate throughout Layer 1 is much lower than the range of recharges developed by Carter and Driscoll. This is reasonable because much of Layer 1 has no hydrologic connection to the underlying coal seams. Additional justification for recharge rates applied in the model is discussed in response to comment BJ57.

Comment MuK 66

Mine Plan, Addendum MP-3 Groundwater Model, 66. Page Addendum MP-3-33 states, “Recharge is applied within the modeling software by applying the recharge to the highest active layer.” Please clarify the presence of any modeled ‘dry cells’ in the model and the influence of applying the recharge to the layers below the dry cells. (MK)

Response MuK 66

As noted in the responses for comments MuK 59 and MuK 60, Groundwater Vistas does not allow for discontinuous layers across the model domain. Along the north and

the west sides of the model there is a good portion of the model domain where the upper layers have been eroded off and do not actually exist. These areas of erosion were accounted for using no flow cells. As shown on Figures 4.4-1 through 4.4-4 of Addendum MP-3, the no flow cells in the top layer are the largest in areal extent while each underlying layer has a slightly decreased areal extent of no flow cells. In this case the no flow cell distribution was adjusted to match the outcrop of each layer. The fact that the software applies the recharge to the highest active layer was taken advantage of during the modeling process, since it is an effective way to apply recharge to an outcropping layer which is under another layer that is eroded away but due to software limitations is still present in the model.

Because CBM operations have generally removed most of the water from the coal seams, there are some locations within the model domain where dry cells during the modeling have caused cells in layer 1 to go dry and the recharge is applied to the next active layer below. While this could be problematic if a high recharge rate were assigned to the model cells, generally throughout the model domain the recharge rate is very low. Therefore, this results in a very minor amount of water coming into the model and did not significantly affect the model calibration.

Comment MuK 67

Mine Plan, Addendum MP-3 Groundwater Model, 67. Table 4.2-3. lists model porosity values. Typically, MODFLOW (flow model) does not use porosity in its calculations. Please clarify the need for this input parameter. (MK)

Response MuK 67

Modflow does not utilize porosity as part of its calculations. However, other modules included in the Groundwater Vistas package such as MODPATH do utilize porosity. In the case of this model, no MODPATH simulations were conducted. Therefore, the porosity term as put into the model has no impact on the calculations. However, porosity is a hydraulic parameter of the aquifer and may be important for future modeling simulations, therefore, the porosity values developed for each aquifer/aquitard unit will be left in the model report. Minor changes to the text in Addendum MP-3 have been made to clarify the role of porosity in this model.

Comment MuK 68

Mine Plan, Addendum MP-3 Groundwater Model, 68. The faults are not modeled in Layer 1. Please clarify the procedure for determining the vertical extents of the faults in the model. (MK)

Response MuK 68

The composition of Layer 1 is predominately claystone. Because Layer 1 is not composed of aquifer material and because the hanging and footwalls are composed of

strata with similar hydraulic properties, displacement due to faulting does not substantially change the flow through the aquitard and placing Horizontal flow barriers in the model in layer 1 was not necessary.

Comment MuK 69

Mine Plan, Addendum MP-3 Groundwater Model, 69. Please provide the input parameters used to model the horizontal flow barriers in the model and discuss their technical reasonableness. (MK)

Response MuK 69

Horizontal Flow Barriers were used in the model to simulate no-flow boundaries created by faulting within the project area. Horizontal flow barriers require two input parameters in Groundwater Vistas including wall thickness and hydraulic conductivity. The input parameter used in the model for wall thickness was 10 feet and a hydraulic conductivity of 1.0×10^{-5} ft/day was used. The horizontal flow barrier parameters as applied will essentially limit all but a very minor amount of flow across the barrier. As described in the response to comment MuK 51, the coal seams within the project area are relatively thin as compared to the fault offsets so it is reasonable to assume that the faults will significantly impede flow in the aquifer units.

Comment MuK 70

Mine Plan, Addendum MP-3 Groundwater Model, 70. Page Addendum MP-3-40 states, "As the current, post-CBM potentiometric surface is considered the static level....." Please provide the implications of this assumption, on the model calibration of hydraulic parameters and the mode predicted hydrologic impacts (over estimation of drawdown vs. underestimation) (MK)

Response MuK 70

Addendum MP-3 Sections 4.8.1, 4.10, and 4.11 all discuss the implications of CBM impacts. In addition, the response to comment MuK 53 also discusses CBM impacts to water levels. As discussed in the response to comment MuK 53, the model conservatively assumed that CBM operations have lowered the water levels in the eastern portion of the model domain to a level near the top of the coal seams. To simulate this drawdown, the elevations of each general head boundary on the east side of the model were set at an elevation just above the top of the coal seam. The general head boundaries elevations remained the same in both the steady state and the transient models. Essentially, this means that the model operated under the assumption that the post CBM impacts were permanent prior to and after the Brook Mine mining activities.

The assumption that the water levels have been permanently impacted by CBM did have a significant impact on model calibration. The severely depressed water levels

caused by CBM operations have resulted in a large number of cells going dry. The hydraulic parameters of the aquifer units within the eastern portion of the model domain were not adjusted to eliminate the dry cells since it is reasonable to assume that, with the severe drawdown modeled, the coal seams could have been dewatered in these areas. Therefore, even though the effects of the CBM drawdowns were observed during calibration, no specific adjustments were made to the modeled aquifer characteristics to eliminate these impacts. The dry cells did complicate calibration of the model because they cause instability in the MODFLOW model calculations and results.

The model was developed to take into account impacts from the combined effects of CBM and the proposed coal mining. In general, CBM development impacts are significantly larger than the predicted impacts from the Brook Mine. Therefore, ignoring CBM impacts would have significantly under predicted the potentiometric surfaces within the model domain and overestimated the impacts that Brook Mine would have on the system.

Many of the CBM wells are actively being plugged and abandoned. If this trend continues, there is a chance that recovery of water levels from CBM impacts may begin which will result in recharging of the coal seams. If this happens, it is anticipated that the model conservatively over predicts the impacts to the region especially in the long term recovery scenarios.

Comment MuK 71

Mine Plan, Addendum MP-3 Groundwater Model, 71. It is noted that Table 4.7-1 summarizes the calibration residuals and statistics from the calibrated model. Please consider providing additional presentations of the calibrated model statistics. This will enable an easier evaluation of any spatial bias in the model calibration. (MK)

- a. X-Y plot of observed vs. simulated water levels.
- b. A map plotting the residuals to show the spatial distribution
- c. Provide a summary statistics table with Mean Error, Mean Absolute Error, Sum of Squared residuals for the calibrated model. It is noted that some of these values are presented in the sensitivity analysis. However, a compiled summary statistics table would be very helpful.

Response MuK 71

As requested the following additions have been made to the groundwater model report:

- A. An X-Y plot of observed versus simulated water levels has been added in the report as Addendum MP-3 Figure 4.7-1.

- B. The residuals have been added to figures 4.7-2, 4.7-3, and 4.7-4 of Addendum MP-3.
- C. Table 4.7-1 of Addendum MP-3 has been updated to include additional statistics.

Comment MuK 72

Mine Plan, Addendum MP-3 Groundwater Model, 72. In addition, to the measured water levels, please clarify if there were any flow measurements used for model calibration. (MK)

Response MuK 72

There are no areas within the model domain where it was possible to collect any flow measurements that would support the modeling effort therefore, no flow measurement were used in the calibration.

Comment MuK 73

Mine Plan, Addendum MP-3 Groundwater Model, 73. Please provide a water budget table (in acre-feet per year or cubic-feet per day) showing all the inflows into the model and outflows from the model.

Response MuK 73

The following tables summarizes the inflows and outflows from the model domain during the steady state period, 5 years into mining, the end of mining, and at the end of recovery.

Mass Balance of Steady State Calibrated Model		
Source/Sink	Inflows (ft ³ /d)	Outflows (ft ³ /d)
General Heads	16,107	22,890
River	2,569	410
Drains	-	560
Recharge	5,168	-
Total	23,846	23,860

Mass Balance 5 years into Mining		
Source/Sink	Inflows (ft ³ /d)	Outflows (ft ³ /d)
Storage	12,496	11,431
General Heads	16,130	22,904
River	2,688	385
Drains	-	1,774
Recharge	5,434	-
Total	36,749	36,494

Mass Balance End of Mining		
Source/Sink	Inflows (ft ³ /d)	Outflows (ft ³ /d)
Storage	3,670	4,146
General Heads	16,135	22,902
River	2,705	365
Drains	-	532
Recharge	5,430	-
Total	27,941	27,945

Mass Balance End of Recovery		
Source/Sink	Inflows (ft ³ /d)	Outflows (ft ³ /d)
Storage	1,698	2183
General Heads	16,138	22,901
River	2,714	363
Drains	-	535
Recharge	5,427	-
Total	25,978	25,983

Comment MuK 74

Mine Plan, Addendum MP-3 Groundwater Model, 74. Please provide a comparison of model simulated inflows and outflows against conceptual estimates of inflows and outflows. This comparison will act as another verification/check for the technical adequacy of the groundwater model (Example model GHB flows vs. reasonable estimated conceptual flows). (MK)

Response MuK 74

Response to comment MuK 73 includes tables that show the inflows and outflows from the model during the steady state period, 5 years into mining, the end of mining, and at the end of recovery. The five main categories of inflows and outflows include 1) storage, 2) general head boundaries, 3) river boundaries, 4) drains, and 5) recharge. Following is discussion regarding model predicted inflows and outflows for each category:

- 1) Storage – During the steady state model there is no inflow or outflow from storage so storage is not included in the first mass balance table in prepare for comment MuK 73. The model predicts that during active mining more water will come out of storage than will go into storage. Conceptually this is reasonable since during mining, water from the coals would be draining into the mined out areas. There is a trend of water continuing to come out of storage even after mining ceases. Even though the volume of water coming out of storage is quite low, it is contrary to the conceptualization of the system to have water leaving storage after mining because at this point water should be going back into storage. This phenomenon is attributed to the fact that many of the

cells in the model go dry during mining because CBM operations have significantly dewatered the coals and there is not much water available in storage (see comment MuK 70). When the cells go dry, MODFLOW treats them as no flow areas and there can be a ripple effect that causes additional cells going dry. Since MODFLOW is not very efficient at rewetting dry cells when they should be resaturated, this ripple effect has caused permanent changes in the model. Over a long time the model would be expected to come to a steady state condition. The tables prepared in response to comment MuK 73 indicate that even at the end of recovery, the model is not yet at the new equilibrium that would eventually be reached with the additional dry cells.

- 2) General Head Boundaries – The amount of water going into and out of the model domain via the general head boundaries remains relatively consistent throughout the modeled operations. This is reasonable because the general head boundaries are a long distance from the mining area and would not be expected to be significantly impacted by mining. In addition, the total volume of outflows from the general head boundaries generally balances the inflows from other sources. This is conceptually correct.
- 3) River Boundaries – The conceptual inflow and outflow from the coals to the Tongue River are discussed in detail in comment MuK 56. Groundwater Vistas does apply the River Boundary cells to the bottom of the layer in which they are inserted. The Tongue River Boundary cells were inserted into the model up to the point where Goose Creek joins the Tongue River. At that location the top of the Carney coal is estimated to be approximately 100 feet below the surface. Since the alluvium is generally much thinner in this area and there is actually a large amount of low permeability strata between the Tongue River alluvium and the coal (described in comment MuK 56), the model likely overestimates the contribution of the River boundary cells to the model because the river boundary cells provide a direct connection (in the model) between the river and the coals where there is not a physical connection. This conservatively over estimates how much water discharges from the River Boundary Cells to the model.
- 4) Drains – One drain was placed into layer 1 in the northeast side of the model domain to allow water to drain from the model where the Tongue River crosses the domain boundary. This represents the amount of water in layer 1 lost to the surface water system. The total discharge from this drain during steady state conditions is 560 ft³/day (2.9 gpm). While no physical measurements were (or can be) made to verify this amount, conceptually it is reasonable. The strata along the Tongue River likely does discharge a small amount of water to the River where it cuts through the numerous perched sand lenses that become saturated from natural recharge. There is no evidence of large groundwater discharges to the Tongue River in this area so it makes sense that a small

discharge to the River (rather than a large discharge) would be observed in the model. During mining, drains were added to the model to remove water from the mine pits. The tables indicate that during mining the discharges from the drains do increase as expected. After mining is complete, discharges from the drains return approximately to premining levels which is conceptually correct.

- 5) The recharge amount used in the model stays at relatively the same level throughout the simulations. Total recharge across the model area is approximately 28 gpm. As is described in comment #65 the recharge rates are reasonable based on available studies.

Comment MuK 75

Mine Plan, Addendum MP-3 Groundwater Model, 75. Page Addendum MP-3-40 states, “Due to a system of thin aquifers with similar sources and sinks and homogeneous hydraulic conductivities, the head values of the steady-state model were nearly identical between the separate coal layers as noted in Table 4.7-1.” Please clarify whether this statement implies that the interburden (where present) between the coal seams is not a confining unit. (MK)

Response MuK 75

This statement is an observation only based on review of modeled values and does not suggest a lack of confinement exists. Pumping tests conducted in separate aquifers demonstrated that the interburden provides confinement between the Carney and Masters aquifers as described in Section D6-8.3.2.3 of Appendix D6. In addition, Table 4.7-1 of Addendum MP-3 shows that at each cluster where both coal seams contained measureable water, the difference in measured water levels between the coal seams was higher than the modeled difference. This suggests that the vertical hydraulic conductivity assigned to the interburden in the model may be higher than the actual hydraulic conductivity of the interburden in the field. The use of a higher hydraulic conductivity for the interburden in the model will overestimate the drawdown in the other coal seam therefore, the predicted drawdown will be conservative.

Comment MuK 76

Mine Plan, Addendum MP-3 Groundwater Model, 76. In figures 4.7-1, 4.7-2 and 4.7-3, please consider including the observed/interpreted water level contours and the measured water level elevations. This will enable to visually evaluate the observed vs. simulated water levels. (MK)

Response MuK 76

Figures 4.7-1, 4.7-2, and 4.7-3 of Addendum MP-3 have been updated to include both observation wells and observed elevations as well as observed potentiometric contours.

Please note that in response to Comment MuK 71 an additional figure was added to this section (Figure 4.7-1) and these figures have since been renumbered to 4.7-2, 4.7-3, and 4.7-4.

Comment MuK 77

Mine Plan, Addendum MP-3 Groundwater Model, 77. Page Addendum MP-3-45 states, “.....and if CBM production ceases, recovery rates will likely be higher than estimated in the model.” Please clarify if this statement implies that currently, there are CBM wells that are operational in the area and are pumping out groundwater. (MK)

Response MuK 77

Although substantially less than past years, some CBM wells in the area are still producing groundwater. Since CBM production has been ongoing for the last 15+ years the CBM operations have significantly lowered the water levels in the coals as is noted in the report. Records of groundwater withdrawals can be found on the Wyoming Oil and Gas Conservation Commission’s (WOGCC) online database at: wogcc.state.wy.us. According to WOGCC records there has been no groundwater production associated with CBM in Townships 57 and 58N Range 84W since 2012. However production is still occurring in Townships 57 and 58N Range 83W as well as Township 56N Range 83 and 84W. The portions of the model domain where CBM production may occur are located in Townships 56 and 57N Range 84W.

Comment MuK 78

Mine Plan, Addendum MP-3 Groundwater Model, 78. Please consider removing the model sensitivity to storage coefficients and porosity. Steady state groundwater model equations do not include these parameters in any of the model calculations. (MK)

Response MuK 78

As noted in this comment, the final model did not include a transient calibration and a sensitivity analysis on storage coefficient and porosity is not appropriate. The section and discussion regarding model sensitivity to the storage coefficient and porosity has been updated and removed as appropriate.

Comment MuK 79

Mine Plan, Addendum MP-3 Groundwater Model, 79. Please clarify if the faults in the model and their parameters were considered in any of the sensitivity analyses. If not, please consider performing a detailed and thorough sensitivity analysis, as the faults appear to influence the drawdowns simulated by the groundwater model. (MK)

Response MuK 79

The faults do influence the drawdowns and flow patterns simulated in the groundwater model. However, as noted in the response to comment MuK 51 the displacement observed in the faults roughly 5 times as thick as the modeled coal seams. Given the fact that the dominant lithology in the area is low permeability claystone/siltstone, it is very likely that where faulting has occurred the displacement has resulted in coals being immediately adjacent to the low permeability strata. Therefore the faults are assumed to be hydrologic barriers to water flow. Based on the best available mapping, these faults have been placed into the model. Because the faults are physical parameters that were developed along with development of the geological model (i.e. elevations and thicknesses of the geological layers), a sensitivity analysis was not performed on the faults.

Part of the reason that the faults influence the groundwater responses in the groundwater model to the degree that they do is because of the CBM impacts. Because the CBM operations have significantly lowered the water levels in the coal seams, the faults create a shadow effect that results in many of the cells immediately downstream of the faults going dry. If there had not been any CBM dewatering operations performed in the coals, the water levels would be significantly higher and the effects of the faults would not be as pronounced.

Comment MuK 80

Mine Plan, Addendum MP-3 Groundwater Model, 80. In addition to the simulated drawdown maps, please consider providing hydrographs at strategically selected locations. This will enable a better presentation of the impacts over time. (MK)

Response MuK 80

As suggested, Appendix A has been added to Addendum MP-3 which depicts the modeled water elevations during the model simulation period at all the water supply wells identified within the model domain (CBM wells excepted) and at selected alluvial target locations within the model domain.

Comment MuK 81

Mine Plan, Addendum MP-3 Groundwater Model, 81. Please clarify if the three wells listed in Table 4.9-1 are the only wells considered for the analysis. Also, provide a discussion on the methodology to narrow down the analysis from several wells shown in the groundwater rights maps to these three wells. (MK)

Response MuK 81

Additional wells beyond those originally presented in Table 4.9-1 were considered in the analysis. Table 4.9-1 has been updated to include all the wells considered in the analysis. To determine which wells were included in the analysis, completions were

compared to modeled surfaces to estimate which formation in which the well was completed. Those thought to be completed in the Carney/Masters sequence were included. Please note that the wells included in Table 4.9-1 error on the side of being over inclusive. Some of the wells are believed to be completed in multiple zones but the analysis assumes that they are only completed in the coal seams of interest. In addition, the well depths were determined based on the State Engineer's database and in many cases well depth data was left blank or was questionable. If there was a question whether a well was actually completed in the coal aquifer of interest the well was assumed to be completed in the coal. Therefore, the well list may include some wells that are not completed in the coals of concern.

Comment MuK 82

Mine Plan, Addendum MP-3 Groundwater Model, 82. Please provide (or reference) a discussion about the three wells listed in Table 4.9-1, their depths, screened intervals and other pertinent information. (MK).

Response MuK 82

Table 4.9-1 has been updated to include total depth as well as the screen intervals for all the wells. Additional details on the wells can be found in Adjudication Appendix B.

Comment MuK 83

Mine Plan, Addendum MP-3 Groundwater Model, 83. Page Addendum MP-3-60 states, "To measure the impacts to the Tongue River and Goose Creek, a series of targets were placed along these drainages in Layer 1" Please define the term target. Also, clarify if these targets are located in the alluvial aquifer. (MK)

Response MuK 83

The targets as used in Groundwater Vistas are simply locations where heads are measured and compared with measured heads (if there are any available). Ground Water Vistas generates a hydrograph throughout the transient period of mining and recovery for each target. These targets were placed in Layer 1 to estimate the impacts of mining to surface water bodies. These targets are located where the alluvial aquifer is simulated in Layer 1. Targets representing existing well locations were also put in layers 4 and 6 as well as discussed in Comment MuK 81.

Comment MuK 84

Mine Plan, Addendum MP-3 Groundwater Model, 84. Page Addendum MP-3-60 states, "These targets demonstrate that the estimated maximum impact to Tongue River Alluvium is conservatively estimated to reach 2.5 feet drawdown near the river." Please expand the discussion on the impacts to surface water flows including translating the

drawdown to an estimated decrease in the groundwater baseflows to Tongue River and Goose Creek. (MK)

Response MuK 84

As shown on the hydrographs included in Appendix A, the maximum water level decline of 2.5 feet to the Tongue River alluvium occurred permanently and was caused by dry cells. This 2.5 foot drawdown is not believed to be a real drawdown because it resulted from model instability rather than a real predicted result. If the model did not have dry cells that caused permanent changes in the model, the maximum drawdown due to mining is estimated to be less than 0.5 feet.

As noted in the response to comment MuK 56, the model estimates the coals will contribute a relatively insignificant amount to water to the base flow of the Tongue River. As noted in Comment MuK 73 in the steady state model the River contributed approximately 2,569 cubic feet per day to the model while the river received 410 cubic feet per from the model. The net result is that in the steady state model 2,159 cubic feet per day (11.2 gpm) was contributed from the river to the model. For comparison, at the end of mining, the River contributed 2,714 cubic feet per day to the model and received 363 cubic feet per day from the model. The net result at the end of mining was that 2,351 cubic feet per day (12.2 gpm) was contributed from the River to the model. Over the simulated mining period the model estimates that the increased contribution of flow from the River to the model will be 1 gpm which represents approximately a 9% increase in flow.

Please note that in Groundwater Vistas the river boundary cells go to the bottom of the layer which likely overestimates the impacts to the River. Within the eastern portion of the model domain the coal aquifers can be 200 or more feet below the level of the river while the Tongue River Alluvium is estimated to be between 15 and 30 feet thick based on the thickness of alluvial wells constructed by Big Horn Coal in the area. Therefore, within the eastern portion of the model domain, the coals may be significantly below the alluvium and no River boundary was included in this portion of the model. However, there is an intermediary region where the actual level of the River is some 30-70 feet higher than the coals. At these locations the River boundary cells were left on to conservatively show the impacts to the river. However, the alluvium in these areas is likely thinner than 40-70 feet. As a result, the model allows the River to directly contribute water to the coals below and the model is expected to overestimate the impacts to the Tongue River in these locations.

Comment MuK 85

Mine Plan, Addendum MP-3 Groundwater Model, 85. Please provide a statement on any hydrologic impacts predicted by the groundwater model to areas outside the Brook mine permit boundary. (MK)

Response MuK 85

The only impacts outside of the Brook Mine Permit Boundary would be observed at the existing water supply wells. Table 4.9-1 describes the estimated impacts at all the water supply wells in the Model domain that will be impacted both inside and outside of the Brook Mine Permit Boundary. Please note that most of these wells are located outside of the Brook Mine permit boundary. As shown on Table 4.9-1 the largest model predicted impact seen at any existing well outside of the Brook Mine Permit boundary is 20 feet which would be observed at P48251W. As shown in the hydrograph for this well in Addendum MP-3 Appendix A, this impact is estimated to be short lived (approximately 4 years). Model predicted drawdowns at the rest of the wells are less than 5 feet. At many of the wells predicted drawdowns are less than 1 foot over the life of the mine.

Comment MuK 86

Mine Plan, Addendum MP-3 Groundwater Model, 86. Please provide a discussion on the simulated impacts caused by mining to surface water – groundwater interaction within the model domain. (MK)

Response MuK 86

Please see the response to comment MuK 84.

Comment MuK 87

Mine Plan, Addendum MP-3 Groundwater Model, 87. Please compare the model simulated water balance between pre-mining, during mining and post mining conditions. Consider including a table that presents the water balance during select periods showing the flows from all sources and discharges to all the sinks within the model domain. Provide a detailed discussion addressing any changes in the model simulated water balance between pre-mining, during mining and post mining conditions. (MK)

Response MuK 87

Please see responses to comments MuK 73 and MuK 74. A detailed discussion is included in the responses to these comments.

Comment MuK 88

Mine Plan, Addendum MP-3 Groundwater Model, 88. In addition to the maps presented on the recovery estimates, please provide hydrographs at strategically selected locations. This will enable a better presentation of recovery over time. (MK)

Response MuK 88

As described in response to Comment MuK 80, an appendix (Appendix A) has been added to Addendum MP-3 which depicts the modeled water elevations at a number of well and target locations within the model domain.

Comment MuK 89

Mine Plan, Addendum MP-3 Groundwater Model, 89. The modeling documentation lacks discussion on the backfill aquifer. In the recovery model, please clarify how the model treats the backfill aquifer (spoils aquifer) and its resaturation. Please provide a discussion (or reference) to the hydraulic properties of the backfill materials used to create the backfill aquifer and the aerial extent of the backfill aquifer. (MK)

Response MuK 89

Mine Plan Section 4.10 discusses the backfill aquifer. Within the areas where the highwall miner is used for mining, an open cavern will be left behind. Unless the mined out areas collapse, the backfill aquifer is essentially an open cavern with 100% porosity. The modeling software used for this effort does not have the ability to transiently change aquifer properties, and during resaturation of the mined areas the assigned storage coefficients remained the same as the original aquifer properties. As a result, the model may underestimate the time that it takes for the aquifer to resaturate where the mining methods have increased the porosity and thereby resaturation volume. Inversely, in the slots mined with traditional open cut mining techniques, coal will be removed and replaced with overburden material. In these locations the backfilled material is expected to have poor aquifer characteristics because it will primarily be a mix of fine grained clay and silt with some sand. In these areas the aquifer will essentially be removed. Again, the modeling software does not have the ability to transiently change aquifer properties and this effect was ignored during the modeling.

Figure MP-3-4.9-1 shows the areal extent of mining and Addendum MP-3 Figures 4.7-2, 4.7-3, and 4.7-4 depict the areas that were modeled as dry within the Brook Mine permit area. It is important to note that a large percentage of the area that will be mined is dry prior to the initiation of mining. In addition, figures in MP-3 Section 4 show that after mining, some of the areas go dry and do not rewet. In the areas where slots are excavated this prediction is reasonable because the backfill will act as an aquitard with poor aquifer characteristics. A layer by layer review of the mined area at the end of mining was conducted to determine conceptually how ignoring the changes in the coal porosity and changes in backfill material may have impacted the model predictions.

Upper Carney-With exception of a very small portion of mine block 9 (Figure MP-3-4.9-1). The entire Upper Carney coal is unsaturated. Therefore, there is no resaturation and no recovery. The model estimates are appropriate for the Upper Carney coal.

Lower Carney - Most of the mine blocks as well as the open slots are dry in the Lower Carney at the end of mining. Only mine blocks 1, 2, 5, 9, and 10 had substantial portions that were saturated. As a result, the potential error created by transient aquifer properties in model predicted resaturation rates to the underground mined coal blocks in the Lower Carney coal, if any, is expected to be very low. With the exception of the slots cut to mine blocks 5, 9, and 10, all of the slots cut to mine the Carney Coal will also be dry; therefore, resaturation at those locations will not substantially impact model predictions. The slots cut for blocks 9 and 10 generally run parallel to the direction of water flow. If the coal in these locations is completely removed and replaced with an aquitard, the impact to the aquifer will be minimal because water will simply flow around the portion of the backfilled aquifer. The open pit slot cut adjacent to mine block 5 does run perpendicular to the direction that water is flowing and may change the groundwater flow patterns in this area. However, the location of the slot is near the groundwater divide caused by the fault just to the south. Therefore, this slot is not expected to substantially impact groundwater flows either

Masters - Most of the Masters Coal mine blocks are saturated. Only blocks, 4, 5, 6, and 7 have substantial areas that are not saturated. In the mine blocks where underground mining techniques are employed the model may underestimate the time it takes for resaturation to occur because the storage coefficient is not updated to account for the increased porosity of the mined out block. However this resaturation time will be balanced out by the fact that there will be no aquifer replaced in the open cuts to resaturate, and thus these areas would not resaturate as the model predicts. With the exception of the open cut for mine block 5, all of the open cuts are oriented so that they will have minimal impacts on the natural flow gradients in the wellfield or are located within or adjacent to dry areas. As previously noted, the open cut near mine block 5 is located adjacent the drainage divide so it will not significantly change the water flow within the aquifer.

Due to the fact that much of the mined area is dry, the actual area mined that is below the water table is relatively small, and that the open cuts are oriented such that they have minimal impacts to groundwater flow, the recovery analysis performed by the model is reasonable. Also, as noted, the areas where underground mining is employed and the model overestimates the rate at which the aquifer is resaturated are counterbalanced by the areas of open cuts where the aquifer will not be replaced and the model underestimates the time it takes for the strata to resaturate.

Comment MuK 90

Mine Plan, Addendum MP-6 Subsidence Control Plan, 90. Figure MP6.1-1 shows “Monarch Seam Surface Only Mining”. Please clarify if the Monarch seam is targeted for mining in the appropriate sections of Appendix D5, Appendix D6 and mine plan. (MK)

Response MuK 90

The appropriate sections of Appendix D5 and D6 have been updated.

Reclamation Plan

Comment BJ 57

Volume 12, Reclamation Plan, Section RP.8.3, Pg. RP-37, The narrative describes the sources of recharge to the coal seams. One lithology mentioned as a positive recharge contributor is the overlying burn, scoria, or clinker material, generated by coal fires. It is a common misunderstanding that the scoriaceous material recharges coal or overburden. It would appear, at first glance, that the broken, vuggy material would be capable of conveying large amounts of water from the surface to materials beneath. That is not the case, however, as the coal/scoria interface has a zone of partially metamorphosed coal ash that lies between the burned material and the remnant coal. I have seen this zone many times during my 25 year career in the coal mines when supervising coal and overburden removal. This zone is characterized by a white to light gray, clay band that ranges in thickness from 6 inches to a foot or more. It is the same high silica ash found in the bottom ash of the local power plants that burn PRB coal. This ash band acts as an aquaclude, preventing water from entering or escaping the coal. Because of this, any recharge models that were run using the scoria as a recharge source must be reevaluated using new layers that do not include the scoria. Rerun recharge models if needed.

Response BJ 57

It is true that the partially metamorphosed coal ash layer between the coal and the scoria has the potential to limit recharge from the scoria to the coal. However, even though the permeability of this layer is low, there will be areas where the coal has collapsed or other geologic variances such as a thinning section which will allow for water from the scoria to come into contact with the coal. Therefore, even though the scoria may not be directly in contact with the coal, there is still a recharge component to the scoria, albeit; significantly lower than if the scoria and coal were in direct contact. This low recharge rate is reflected in the groundwater model. The calibrated recharge rate used in the groundwater model for the areas covered by scoria was 0.35 inches per year. For comparison purposes, the recharge rates assigned to the Carney and Masters outcrops, where no scoria was present, varied from 0.2 to 0.88 inches per year. Considering that in the scoria areas a very large percentage of direct precipitation is expected to infiltrate into the scoria, the 0.35 inch per year recharge rate represents a significant reduction in the amount of water available (which could be upwards of 10 inches per year) to infiltrate into the coal seams. Therefore, the calibrated recharge rate included in the groundwater model does take into account the low permeability layer between the coal and the scoria.

Comment BJ 58

Volume 12, Reclamation Plan, Section RP.8.3, Pg. RP-39, The second sentence in the first paragraph has an odd, difficult to understand syntax. Please rewrite the sentence for clarity.

Response BJ 58

Revised page RP-39 text as requested. The sentence will now read “The mine will consult with WDEQ/LQD to determine the number of spoil wells that will be tested”.

Comment BJ 65

EXHIBITS, Reclamation Plan, Exhibit RP.6-1, The permit boundary on this map is inaccurate. Please recreate the permit boundary layer.

Response BJ 65

Revised Exhibit RP. 6-1 as requested.

Comment BJ 66

EXHIBITS, Reclamation Plan, Exhibit RP.8-3 and Exhibit RP.8-4, The post mining potentiometric surfaces for the Carney and Masters beds are suspended in mid-air over Slater Creek. Please terminate the contour lines at the outcrop or use a dotted line to indicate the calculated potentiometric surface.

Response BJ 66

Revised Exhibit RP.8-3 and RP.8-4 as requested.

Comment DS 24

Reclamation Plan, Section RP.4. This brief section discusses what is considered spoil material to be removed during mining. The section states that spoil does not include coal, but there are some very narrow coal seams with numerous stringers of clay or of such low quality that will probably not be mined and will be placed in backfill. Also, the top layers of most coal seams are quite “dirty” and would also be removed and backfilled. In order to provide the readers with a more accurate description of the mining and reclamation processes, please revise the text to show that some coal-laden materials will also be considered spoils and will be backfilled during reclamation.

Response DS 24

Revised text as requested.

Comment DS 25

Reclamation Plan, Section RP.5.2. Please provide a description of the methods used to control topsoil depth during replacement. Most mining operations use stakes with surveyed marks as guides for controlling soil application depths.

Response DS 25

See Section RP.5.4 for a description of the methods used to control topsoil depth during replacement.

Comment DS 26

Reclamation Plan, Section RP.5.4. Variability in topsoil depth cannot be avoided due to limitations imposed by the equipment used and the pre-application preparations which may include ripping of the compacted overburden surface. Typically, the depth of topsoil application may vary 25%, but the average depth should be closely monitored and should not exceed the average availability. Also, because some soils exhibit unsuitable characteristics and will not be used for reclamation, discussion of the use of substitute topsoil materials is warranted in this section.

Response DS 26

Revised text as requested. Added discussion about substitute topsoil being an option if not enough suitable topsoil is salvaged.

Comment DS 27

Reclamation Plan, Section RP.5.6. Sediment control measures will be required to prevent untreated runoff from exiting reclaimed lands onto adjacent native lands. Please provide a discussion of the sediment control measures to be used.

Response DS 27

Revised text as requested.

Comment DS 28

Reclamation Plan, Section RP.8.2. This section states only that impoundments will require Landowner, LQD and SEO approval. Prior to construction of post mining impoundments, SEO approved plans for the impoundments must be submitted for inclusion in the permit Reclamation Plan. Please include a statement that a Reclamation Plan revision will be approved by the LQD prior to construction of impoundments.

Response DS 28

Revised Section RP.8.2 to include a statement regarding LQD approval before the construction of postmine impoundments.

Comment DS 29

Reclamation Plan, Section RP.11.1. The primary final land use for the permitted acreage will be grazing and wildlife. Only areas where the current use is industrial will remain industrial land uses after mining is completed. Therefore, in order for any constructed buildings or railroad access to remain following mining, and a permit revision to change the land use will be required. It is not just a matter of demonstrating usefulness to the LQD and receiving landowner consent. This will be a major revision to the permit that will require public notice. Clarification should be provided concerning the steps involved to allow building to remain.

Response DS 29

Revised text as requested. Eliminated discussion in Section RP.11 regarding leaving any buildings, facilities, and equipment following completion of mining.

Comment DS 30

Reclamation Plan, All Mine Plan Maps with progressions must show the actual years of the initial disturbance or mining activity, or the progression must be linked to a specific year in Reclamation Plan text. The maps must also include the contour interval.

Response DS 30

See Mine Plan MP.1.6 for a description of permit terms and initial year. Revised text in Reclamation Plan Section RP.13 to reference Mine Plane MP.1.6. Revised Exhibit RP.5-1 adding “Note: Year 3 corresponds to the year 2019” in Legend.

Comment DE 19

Reclamation Plan, Section RP.5.1, page RP-6 – RAMACO states that the contoured surface will be scarified or ripped, if necessary. The mine should commit to scarifying or ripping all surfaces prior to topsoil replacement.

Response DE 19

Revised text as requested. Remove “if necessary” from sentence.

Comment DE 20

Reclamation Plan, Section RP.5.6, page RP-8 - The 1st sentence of the 2nd paragraph doesn't make sense. Please correct.

Response DE 20

Revised text as requested. The sentence now reads “Rills and gullies occurring in redistributed soil precluding the achievement of the approved postmining land use or the reestablishment of vegetative cover will be rectified”.

Comment JJ 5

Reclamation Plan, 5. Exhibit RP 6-1 also displays permit boundary discrepancies in regards to the section lines on it and those located on the Adjudication Exhibit 1. Please update accordingly.

Response JJ 5

See response to comment BJ 65. Revised Exhibit RP.6-1 as requested.

Comment JJ 6

Reclamation Plan, 6. Table RP 6-1 states that there are 11.6 acres of wetlands and other aquatic resources. Please discuss where these acres are to be reclaimed and show them on the Exhibit RP. 6-1 which displays the reclaimed vegetation communities and their locations.

Response JJ 6

Revised Section RP.9 to include reference to Exhibit RP.6-1 for location of reclaimed wetlands and OAR. Revised Exhibit RP.6-1 to include reclaimed wetlands and OAR locations.

Comment MK 24

Reclamation Plan, Section RP.10 Reestablishment of Essential Hydrologic Functions and Agricultural Utility on Alluvial Valley Floors, Assuming the Tongue River is an AVF, this section should discuss how the essential hydrologic functions will be maintained and/or reestablished, as required by LQD Coal Rules and Regulations, Chapter 5, Section 3(c)(ii). As noted in Comment No. 21, the essential hydrologic functions of the Tongue River AVF need to be identified and a monitoring system needs to be installed. (MDK)

Response MK 24

Revised text as requested in Section RP.10.

Comment MK 25

Reclamation Plan, Section RP.10 Reestablishment of Essential Hydrologic Functions and Agricultural Utility on Alluvial Valley Floors, 25. As noted in Comment No. 21, the adjacent Goose Creek AVF also needs a monitoring system to demonstrate essential

hydrologic functions are maintained and/or reestablished as required by LQD Coal Rules and Regulations, Chapter 5, Section 3(c)(i) and (ii). (MDK)

Response MK 25

Revised text as requested in Section RP.10.

Comment MK 26

Reclamation Plan, Section RP.10 Reestablishment of Essential Hydrologic Functions and Agricultural Utility on Alluvial Valley Floors, 26. This section may also need to be addressed if the LQD finds that other AVFs exist on or near the permit area. If AVFs are determined to be present, the essential hydrologic functions must be maintained and/or reestablished as required by LQD Coal Rules and Regulations, Chapter 5, Section 3(c)(i) and (ii). (MDK)

Response MK 26

Revised text as requested in Section RP.10.

Comment MK 75

Reclamation Plan, Section RP.3.3 Postmine Slope Analysis, 49. Please provide a discussion that compares the pre-mine vs. post-mine slope characteristics. A table would be helpful that compared the minimum, maximum, and average slopes under pre-mine and post-mine conditions. (MDK)

Response MK 75

Added Table RP.3-1 comparing premining and postmining slopes. Updated Section RP.3.3 of text to include reference to the new table.

Comment MK 76

Reclamation Plan, Section RP.3.5 Drainage Reestablishment, 50. It is stated that mining will disturb portions of the Slater Creek channel and the reclamation will entail reconstruction. However, the Mine Plan PHC (Section MP.6.1) stated that Slater Creek “will still flow naturally around the trench”, and “Because Slater Creek’s flow will not come into contact with mining activities, no impact will be made to water quality”. Please provide a clear and explicit description of the extent of direct disturbance to the Slater Creek channel. This description should be consistent between the Mine Plan and Reclamation Plan. (MDK)

Response MK 76

As stated in the revised Section MP.6.1 of the Mine Plan, the only anticipated surface disturbance to Slater Creek during mining will be the redirection of the channel

through a culvert under a proposed haul road. No text was edited in response to this comment.

Comment MK 77

Reclamation Plan, Section RP.4.2 Mitigation of Unsuitable Material , 51. Minor channels are defined as ephemeral streams but there is no definition provided for “major channels”. Please provide a definition and also illustrate an example of a major channel within the proposed permit boundary that would fit into this category. (MDK)

Response MK 77

Revised text in Section RP.4.2 to provide the definition of major channels.

Comment MK 78

Reclamation Plan, Section RP.5.6 Erosion Control and Conservation Practices, 52. The first sentence of the second paragraph...”Rills and gullies...” needs revised, as it appears to be missing one or more words. (MDK)

Response MK 78

See response to Comment DE 20. Text revised as requested.

Comment MK 79

Reclamation Plan, Section RP.7.4 Aquatic Habitat, 53. The second sentence discusses stockponds possibly being disturbed by mining activities. The Mine Plan PHC did not mention that any existing stockponds would be disturbed by mining activities. If stockponds are to be disturbed by the mining operation, this should be discussed in the Mine Plan PHC. (MDK)

Response MK 79

The text in the Mine Plan PHC has been revised to clarify the disturbance to stockponds within the permit area. Section RP.7.4 has been revised to clarify the anticipated aquatic habitat locations.

Comment MK 80

Reclamation Plan, Section RP.7.4 Aquatic Habitat, 54. The text states that two additional postmine impoundments will be constructed and their location is shown in Exhibit RP.3-1. This Exhibit shows ten permanent impoundments, both on and adjacent to the proposed permit area. Please revise this discrepancy in the text or change the symbology in the Exhibit to clearly show the two permanent post-mine impoundments. (MDK)

Response MK 80

Revised text in Section RP.7.4. to clarify the postmine impoundment locations.

Comment MK 81

Reclamation Plan, Section RP.8.1 Drainage Basin Reconstruction, 55. Please add the major stream name labels (Tongue River, Goose Creek, East Fork Earley Creek, Slater Creek, Hidden Water Creek) to Exhibit RP.8-1. (MDK)

Response MK 81

Revised Exhibit RP.8-1 as requested.

Comment MK 82

Reclamation Plan, Section RP.8.1 Drainage Basin Reconstruction, 56. Please explain in the text how the postmine drainage basin parameters in Table RP.8-1 were determined. (MDK)

Response MK 82

Revised text in Section RP.8.1 as requested.

Comment MK 83

Reclamation Plan, Section RP.8.1 Drainage Basin Reconstruction, 57. The text states that a comparison of drainage basin parameters in Table RP.8-1 and Exhibit RP.8-1 show that the overall hydrologic balance will remain largely unchanged. This conclusion is not obvious from the Table and Exhibit. How similar are the postmine drainage basin parameters to the pre-mine parameters? Which sub-drainages show the largest change from pre-mine conditions? The text needs to include a more thorough discussion to demonstrate to the reader why exactly the postmine hydrologic balance will be unchanged. (MDK)

Response MK 83

Revised text to include reference to Appendix D6 tables and exhibits regarding drainage basin parameters. Minor disturbance and mining methods contribute to the largely unchanged postmine drainage basin parameters.

Comment MK 84

Reclamation Plan, Section RP.8.1.1 Discharge Estimates, 58. The text provides no discussion of the comparison between the pre-mine and postmine modelled discharge values. Please provide this discussion so the reader can determine if the differences are minor or major. (MDK)

Response MK 84

Revised text in Section RP.8.1.1 as requested

Comment MK 85

Reclamation Plan, Section RP.8.1.1 Discharge Estimates, 59. Please add the year to the Miller reference within the text (2003) and add this citation to the references list in Section RP.17. (MDK)

Response MK 85

Revised text as requested.

Comment MK 86

Reclamation Plan, Section RP.8.1.1 Discharge Estimates, 60. Similar to Comment No. 8 made for Appendix D6, the HEC-HMS runoff estimates in Table RP.8.4 are much higher than the Miller (2003) equations. Please provide a discussion in the text as to the reasonableness of the HEC-HMS estimates and why the HEC-HMS estimates are so much higher than the Miller (2003) regression equations.

Response MK 86

See response to Comment MK 34. No revisions to the text were made.

Comment MK 87

Reclamation Plan, Section RP.8.1.2 Channel/Floodplain Design, The last sentence in the first paragraph states that stream reaches for which designed cross sections are provided are identified in plan on Exhibit RP.8-1. There is nothing on this Exhibit that shows which stream reaches have designed cross sections, nor which stream channels are being reconstructed. Please clearly identify this information on this Exhibit. (MDK)

Response MK 87

Exhibit RP.8-1 has been revised as requested.

Comment MK 88

Reclamation Plan, Section RP.8.1.2 Channel/Floodplain Design, 62. Exhibit RP.8-2 shows that the main Slater Creek channel will not be disturbed. Please consider this in light of Comment No. 50 that requested clarification on the extent of disturbance to the Slater Creek channel. (MDK)

Response MK 88

See response to Comment MK 76(referred to as Comment No. 50). Revised Exhibits RP.8-1 RP.8-2 as requested. A reconstructed Slater Creek (Figure RP.8-9) cross section has been added to reflect the correct disturbance boundary.

Comment MK 89

Reclamation Plan, Section RP.8.1.2 Channel/Floodplain Design, 63. On Page RP-35, second paragraph, it references “reclaimed Slater Creek channel” and channel hydraulics are presented in Table RP.8-5. It is not clear why channel hydraulics are presented for Slater Creek when it will not be disturbed. Is this because reclaimed tributaries to Slater Creek are changing such that the main channel of Slater Creek is expected to be change? Please clarify this in the text. (MDK)

Response MK 89

Slater Creek is included Table RP.8-5 to show that the postmine Slater Creek Channel will be hydraulically similar to premine conditions after mining and reclamation operations have been completed as reclamation of a portion of Slater Creek is expected.

Comment MK 90

Reclamation Plan, Section RP.8.2 Permanent Impoundments, 64. It is unclear exactly how many new postmine impoundments will be constructed. Table RP.8-6 identifies two impoundments (Enhancement Stock Pond 1 and Replacement Stock Pond 1), and these are shown in Exhibit RP.3-1. Exhibit RP.3-1 shows eight other permanent impoundments. Please identify if these are new features to be constructed or if they are existing stockponds that may be affected by the mining operation. (MDK)

Response MK 90

The text in Section RP.8.2 has been revised to clarify that only the new features to be constructed are displayed in Table RP.8-6. Affected existing stockponds will be constructed approximately to premine conditions.

Comment MK 91

Reclamation Plan, Section RP.8.2 Permanent Impoundments, 65. Please identify in this section if there will be a net increase or decrease in post-mine water storage capacity relative to pre-mine capacity. (MDK)

Response MK 91

Revised text in Section RP.8.2 to clarify a net increase in water storage capacity is expected due to the addition of two postmine impoundments.

Comment MK 92

Reclamation Plan, Section RP.8.2 Permanent Impoundments, 66. As mentioned Comment No. 47, it is advised that the applicant discuss with the SEO-Interstate Streams Division any implications for the Yellowstone Compact if new water storage features are proposed that potentially decrease water quantity to the Tongue River. (MDK)

Response MK 92

See response to Comment DS 28(Comment No. 47 mentioned above). Revised text as requested.

Comment MK 93

Reclamation Plan, Section RP.8.4.2 Surface Water Monitoring, 67. The text on Page RP-40 states that the surface water monitoring stations are shown on Exhibit RP.8-4. However, the stations are not shown on this Exhibit. It may be make the most sense to add these to Exhibit RP.8-5 and rename the Exhibit “Postmine Hydrologic Monitoring Locations” so the surface water stations and monitoring wells are on one Exhibit. (MDK)

Response MK 93

Revised the reference in text to state “locations of these sites are shown on Exhibit RP.8-5”. Exhibit RP.8-5 was revised to include surface water monitoring stations and renamed as requested. Table RP.8-9 was edited to include all planned surface water stations including postmine impoundment monitoring sites.

Comment MK 94

Reclamation Plan, Section RP.8.4.3 Postmine Impoundments, 68. The text on Page RP-41 states that water quality samples will be collected at each of the postmine impoundments listed in Table RP.8-6 and presented on Exhibit RP.3-1. Please clarify in the text that this sampling list includes all ten impoundments shown. (MDK)

Response MK 94

Revised text in Section RP.8.4.3 to reference Table RP.8-9 and Exhibit RP.8-5 for postmine surface water monitoring sites including postmine impoundments.

Comment MK 95

Reclamation Plan, Section RP.8.4.3 Postmine Impoundments, 69. Please add the list of impoundments to be sampled to Table RP.8-9 “Surface Water Monitoring Sites”. (MDK)

Response MK 95

Revised Table RP.8-9 as requested.

Comment MK 96

Reclamation Plan, Section RP.8.4.3 Postmine Impoundments, 70. The postmine impoundments to be sampled appears to be slightly different from the impoundments listed in Mine Plan Table MP.7-1 “Operational Surface Water Monitoring Locations”. Table MP.7-1 lists three impoundments (Hall Reservoir, Black Mountain No. 1 Stock Reservoir, and Legerski Bros #1 Stock Reservoir) that are not listed as postmine impoundments to be sampled. Please explain why there is a difference in the operational monitoring and postmine monitoring of some impoundments. (MDK)

Response MK 96

Black Mountain No.1 Stock Reservoir has been added as a postmine impoundment that will be monitored. Legerski No. 1 Stock Reservoir and Hall Reservoir are outside of the areas planned for mining disturbance, however in an effort to further monitor the surface water of the Brook Mine permit area, the reservoirs were added to be sampled quarterly during mining. Table RP.8-9 and Exhibit RP.8-5 have been updated to include Black Mountain Reservoir No. 1 Stock Reservoir.

Comment MK 97

Reclamation Plan, Section RP.8.4.3 Postmine Impoundments, 71. In the second full paragraph on Page RP-41, “The water quality samples..” please also state that the water quality samples will be compared against WDEQ/WQD Class III groundwater standards, as suggested by LQD Guideline No. 17 for replacement and enhancement stockponds. (MDK)

Response MK 97

Revised text as requested in Section RP.8.4.3.

Comment MK 98

Reclamation Plan, Section RP.8.5.2 Surface Water, 72. At the end of the first paragraph on Page RP-44, it predicts a “slight change” in event peaks and volumes. Please further discuss what is meant by a “slight change”, i.e., what is the magnitude of the increase or decrease? (MDK)

Response MK 98

Section RP.8.5.2 has been updated to reflect the change in event peaks and volumes will be less than one percent when compared to premining conditions.

Comment MK 99

Reclamation Plan, Section RP.8.5.2 Surface Water, 73. In the second paragraph on Page RP-44, please clarify the extent of direct mining disturbance to Slater Creek versus tributaries of Slater Creek. This comment relates to previous Comments No. 50 and 62. (MDK)

Response MK 99

See response to Comments MK 76 (comment No. 50) and Mk 88 (Comment No. 62).

Comment MK 100

Reclamation Plan, Section RP.8.5.2 Surface Water, 74. Please provide a discussion as to whether the planned postmine impoundments will affect surface water quantity on or downstream of the proposed permit area. (MDK)

Response MK 100

Section RP.8.5.2 has been revised to include discussion of the effect of postmine impoundments to the surface water quantity on and downstream of the proposed permit area.

Comment MK 101

Reclamation Plan, Section RP.9.1 Introduction, 75. The second paragraph references Appendix D8. Should this be Appendix D10 (Wetlands)? Please revise this if necessary. (MDK)

Response MK 101

The reference has been revised to D10 as requested.

Comment MK 102

Reclamation Plan, Section RP.9.1 Introduction, 76. Please add a statement up front in the Wetland Mitigation section that the USACE has not yet issued a jurisdictional determination for the proposed Brook Mine. Please also provide a statement in the text that the information in Section RP.9 may be subject to change pending the USACE determination. The USACE jurisdictional determination should also be incorporated somewhere into the Mine Permit once that is received by the Brook Mine. (MDK)

Response MK 102

Sections RP.9.1 has been revised as requested.

Comment MK 103

Reclamation Plan, Section RP.14 Bond Release, 77. The LQD no longer requires a bond release verification for “sediment control release”. This is now termed “surficial stability verification”. More information is available in LQD Guideline No. 23. Please revise the text for this change. (MDK)

Response MK 103

The text in Section RP.14 has been revised by removing the reference to sediment control release.

Comment MuK 91

Reclamation Plan, RP 8.5.3 Groundwater, 91. Section 8.3, page RP-38 states, “The estimated Postmine Potentiometric surfaces for the reclaimed aquifer for the Masters and Carney Seams are presented respectively in Exhibit RP.8.3 and Exhibit RP.8-4. Please provide a summary comparing and contrasting the premine potentiometric surfaces vs. post mine potentiometric surfaces. This comparison should also consider any changes in the hydraulic properties (hydraulic conductivity, storativity, recharge capacity) of the premine aquifers vs. post mine aquifers. (MK)

Response MuK 91

Section RP.8.5.3 has been revised to include discussion regarding the comparison of premine and postmine potentiometric surfaces.

Comment MuK 92

Reclamation Plan, RP 8.5.3 Groundwater, 92. Please discuss any changes in the interaction between the surface water and groundwater systems from the premining through the postmining phases of the operation. (MK)

Response MuK 92

The response to Comment MuK 84 describes interaction between the surface water and groundwater systems from the premining through the postmining phases of operation. In general the changes between the surface water systems and the groundwater systems are expected to be minimal. For a short time during mining it is anticipated that there will be a small (less than 6%) increase in the amount of water that recharges the coal seams from the Tongue River. Once the water levels in the coals recover, no further impacts are expected.

Comment MuK 93

Reclamation Plan, RP 8.5.3 Groundwater, 93. Please discuss the intersection of the postmining topographic and potentiometric surfaces and their effects on the location and size of groundwater-fed water bodies. (MK)

Response MuK 93

Revised Section RP.8.5.3 as requested.

Comment MuK 94

Reclamation Plan, RP 8.5.3 Groundwater, 94. Section 8.5.3, page RP-46 states, “These water quality changes can be qualitatively predicted from the overburden mineralogy and projected post mine hydrology.” Please expand this discussion on projected groundwater quality. Provide a discussion on the estimated/ projected post mining groundwater quality. A detailed description of potential changes in water quality from flow through backfill/mined out areas should be included. Any potential changes to water quality in adjacent aquifers should be discussed with respect to the potential for offsite material damage. (MK)

Response MuK 94

Revised Section RP.8.5.3 text as requested.

Comment MuK 95

Reclamation Plan, RP 8.5.3 Groundwater, 95. Please provide a discussion on any anticipated water use during the reclamation period. (MK)

Response MuK 95

As discussed in Addendum MP-3, the only anticipated groundwater uses during the reclamation period are at existing water supply wells. Section RP.8.5.3 has been revised to include additional discussion.

Comment MuK 96

Reclamation Plan, RP 8.5.3 Groundwater, 96. Please address (or reference) any expected post-reclamation subsidence effects on the hydrologic system (both quantity and quality) and the plan to minimize these effects. (MK)

Response MuK 96

Section RP.8.5.3 has been revised to include discussion of expected postmine subsidence effects on the hydrologic system.

Comment SP 7

Reclamation Plan, Page RP-13. Section RP.6.2.6. In the last sentence please add that substitutions to the seed mix will be made only with WDEQ approval.

Response SP 7

Revised text in Section RP.6.2.6 as requested, the statement will now read “In the event that seed for primary species is not available, alternatives will be considered which match the life form and morphology of the primary choice only with WDEQ approval.”

Comment SP 8

Reclamation Plan, Page RP-16. Section RP.6.4.1. To demonstrate that all of the unaffected acres of each vegetation community are sufficient for an extended reference area please create a table with total acres and affected acres and reference this table in this section.

Response SP 8

Table RP.6-6 has been created to display the number of extended reference acres for the respective vegetation communities. The text in Section RP.6.4.1 has been revised to include a reference to the newly created table.

Comment SP 9

Reclamation Plan, Page RP-17. Section RP.6.4.1. Please add to the Ch. 4 reference in the first sentence on this page that the Handbook of Approved Sampling and Statistical Methods for Evaluation of Revegetation Success on Wyoming Coal Mines.

Response SP 9

Revised Section RP.6.4.1 as requested.

Comment SP 10

Reclamation Plan, Page RP-17. Section RP.6.4.1. Please remove the first sentence in the third paragraph. It appears in conflict with the next sentence which cites Ch. 4.Sec. 2(d)(ii)(B).

Response SP 10

Removed sentence as requested in Section RP.6.4.1.

Comment SP 11

Reclamation Plan, Page RP-19. Section RP.6.4.5.1. Please add a third sentence to the first paragraph to Pastureland land use with a full shrub density greater than 1 shrub/m² is also eligible.

Response SP 11

Sentence including pastureland land use as eligible added to Section RP.6.4.5.1 as requested.

Comment SP 12

Reclamation Plan, Page RP-24. Please revise the sentence after the • Shrub density bullet to “Additionally, a species list will be prepared” and delete the remainder of the sentence.

Response SP 12

Revised text as requested.

Comment SP 13

Reclamation Plan, Page RP-25. Section RP.6.7.3. Under Sampling Frequency in Guideline 14 the third sample may be included as part of your revegetation success (bond release) sampling which can begin in year seven. You may add more flexibility to your sampling interval such as beginning year 3 or 4, with the second sampling in year 5, 6 or 7 and then the third may be year 7 – 13 and may be used for revegetation success.

Response SP 13

Revised text per recommendations.

Comment SP 14

Reclamation Plan, Page RP-29. Section RP.7.2. There is a reference to RP.8 in this section. Please correct the reference if it is not correct.

Response SP 14

Revised text to reference Section RP.6 for seed mixtures and revegetation operations.

Comment SP 15

Reclamation Plan, Table RP6.1. Could you please add a footnote listing the disturbances that are included in the 87.3 acres of Disturbance and what the disturbances will be postmining in the 56.1 acres.

Response SP 15

Added footnote describing disturbance for premining and postmining to Table RP.6-1 as requested.

Comment SP 16

Reclamation Plan, Exhibit RP.2-1. Postmining the landuse will be Grazingland and Fish and Wildlife Habitat (937.7 acres) and Cropland (3.7 acres) with 56.1 acres of disturbance, 4.9 acres of water and 11.6 acres of wetland. These landuses will match the landuses on Exhibit D1.1-1. With just minor acreage changes shown in Table RP.6-1. Since the railroad and major roads are identified and Taylor Quarry is going to be reclaimed to Grazingland and Fish and Wildlife Habitat, the Industrial commercial stippling is not needed on these areas.

Response SP 16

Revised exhibit as requested.

Other Comments

Comment MK 27

Items Requested in Electronic Format for Preparation of CHIA, 1. Please provide a CAD or ArcGIS shapefile that contains the proposed permit boundary for the Brook Mine. This file will be used to prepare maps in the CHIA. This file can be emailed to: matthew.kunze@wyo.gov. (MDK)

Response MK 27

See response to comment MK 28.

Comment MK 28

Items Requested in Electronic Format for Preparation of CHIA, 2. Please provide the baseline surface and groundwater data collected to support baseline characterization for the permit application. All data can be submitted on Excel templates (Attachments) found on the LQD website for the Coal Annual Report Format (CARF): <http://deq.wyoming.gov/lqd/coal/resources/annual-report-3/>.

- Please provide all surface water flow and water quality data for the following surface water stations: SM578415-SW-1, SM578409-SW-1, SM578418-SW-1, and SM578512-SW-1.
- Please provide all groundwater level and water quality data for all Brook Mine monitoring wells shown in Table D6.2-1.

Response MK 28

The electronic data requested is being compiled in the requested format and will be provided when it is completed.

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Brook 8

Adjudication

Comment AG 1 – Round 1

Please also provide copies of the complaint and the answer. If there are any motions that the court has ruled on limiting or deciding any of the claims or factual or legal questions originally at issue in the case, please also provide copies of the orders, the motions, the responses to the motions, and any supporting memoranda.

Response AG 1 – Round 1

The Applicant's position with regard to any surface interests that may be claimed by Padlock Ranch Company and/or Big Horn Coal Company is that the Applicant alone owns the sole dominant present property right to use these surface lands for the coal mining operation described in the application, as that application has been submitted and supplemented. Applicant's sole dominant surface ownership and use interest in the relevant lands derives directly from the 1954 Deed (Attachment B) and its express reservation language. Pursuant to the controlling Wyoming Supreme Court authority set out in *WYMO Fuels, Inc. v. Edwards*, 723 P.2d 1230 (Wyo. 1986) (Attachment C), when the Applicant already owns the dominant surface use rights for coal mining on the property, then the Applicant consents to its own use pursuant to its application by submitting the application and no other surface consents can or should be required under W.S. § 35-11-406(b)(xi). As the Land Quality Division is aware, to the extent that Padlock Ranch Company incorrectly claims some surface rights on any lands described in the 1954 Deed, it necessarily could only attempt to do so fully subject to the Applicant's sole dominant surface rights to mine coal. Under the *WYOMO Fuels, Inc.* decision, no consent from Padlock can be required. To the extent that Big Horn Coal incorrectly claims some surface use right in this area at this time, the Applicant is proceeding with quiet title litigation (Fourth Judicial District Court, Sheridan County, Wyoming Civil No. CV 2014-372) against Big Horn Coal on this issue and has asserted its sole dominant reserved surface right to use the surface described in the 1954 Deed to mine coal there without any consent from Big Horn Coal pursuant to the *WYOMO Fuels, Inc.* case decision. Accurate copies of the Applicant's pending summary judgment motion arguments on this issue are enclosed with this response (attachment D and E). The Applicant can and will supplement these pleadings with further documentation that is described in the pleadings upon request.

Comment AG 1 – Round 2

Please provide copies of the following documents related to the state district court litigation between the Applicant/Ramaco and Big Horn Coal Company:

- The complaint and answer filed in the case (if either has been amended, only the most recent amended version needs to be provided).

- For the Applicant's summary judgment motion: Big Horn Coal's response to the motion.
- For Big Horn Coal's motion for summary judgment: the memo supporting that motion, the Applicant's response to the motion, and Big Horn Coal's reply memorandum.
- The "Section 5" of the "May 6, 1983, Release Agreement" that the Applicant mentioned in its reply in support of its summary judgment motion.
- When it is available, the district court's order deciding the Applicant's and Big Horn Coal's summary judgment motions.

Response AG 1 – Round 2

The materials requested in this comment were supplied to the Attorney General on August 20, 2015 after the Round 2 comments had been released. It is assumed if any further comment is required, it will be received in Round 3.

Comment AG 2 – Round 1

Therefore, the Division requests the Applicant to provide sufficient information and supporting documents for the Division to determine whether Padlock Ranch Company and Big Horn Coal Company are or are not "residential or agricultural landowners" under the statutory definition in W.S. § 35-11-406(b)(xi).

Response AG 2 – Round 1

Please see response AG 1.

Comment AG 2 – Round 2

Please also provide sufficient information and supporting documents for the Division to determine whether Padlock Ranch or Big Horn Coal qualify as a "resident or agricultural landowner," as defined in W.S. § 35-11-406(b)(xi). The statutory requirements for a permit application differ depending on whether that status exists, and the Division must determine which set of requirements (W.S. § 35-11-406(b)(xi) or -406(b)(xii)) may apply to this Application.

Response AG 2 – Round 2

The materials requested in this comment were supplied to the Attorney General on August 20, 2015 after the Round 2 comments had been released. It is assumed if any further comment is required, it will be received in Round 3.

Comment AG 3 – Round 2 (New Comment)

Would the 1983 release agreement apply to the surface rights that originate with the 1954 Deed and are currently owned by Padlock Ranch? Did Padlock Ranch obtain its rights at issue before or after the 1980 release agreement?

Response AG 3 – Round 2 (New Comment)

No. The 1983 release agreement does not affect any of the rights reserved in the 1954 Deed. The 1954 Deed controls the surface use mining rights of Ramaco relative to both Big Horn Coal and Padlock Ranch. Even if the release agreement had an effect as to Big Horn, Padlock Ranch is not a party to the release agreement and as a non-party has no rights under that agreement. Ramaco has found no documents that might show Padlock Ranch acquired any kind of interest or rights under the 1983 release agreement.

Instead, Ramaco has found documents that show Padlock Ranch acquired certain lands from Big Horn Coal in 1965, almost 20 years **before** the release agreement. Padlock then sold some of the land back to Big Horn Coal and vice versa. But none of the documents showing these transfers mention the 1983 release agreement.

Comment AG 4 – Round 2 (New Comment)

If one assumes that Big Horn's arguments in the litigation are correct that the 1983 release agreement granted Big Horn rights greater than those under the 1954 Deed, would Big Horn's arguments and the rights it argues that it obtained through the release agreement also apply to any of Padlock Ranch's lands?

Response AG 4 – Round 2 (New Comment)

No. As discussed in response to the previous question, Padlock Ranch does not have any rights under the release agreement. Likewise, Ramaco could find no documents showing that Padlock Ranch ever acquired any rights in the 1983 release agreement.

Comment AG 5 – Round 2 (New Comment)

Are there any contractual documents or property records related to Padlock Ranch's lands that arguably may have altered Padlock Ranch's rights under the 1954 Deed? If so, please provide copies of those documents and explain the nature of the documents and how they may have affected Padlock Ranch's rights.

Response AG 5 – Round 2 (New Comment)

No. Ramaco has found several deeds purporting to convey land from Big Horn Coal to Padlock Ranch's predecessor. These deeds, however, do not alter or try to alter any rights under the 1954 Deed.

Comment DM 1 – Round 1

Adjudication – Appendix B2 – Groundwater Rights – There is a groundwater well that is missing in this volume. The listing is as follows:

Barbula #2

Permit No. 85631W

Location: SW NW Section 21, T57N R84W

Please add this entry to the table and to any corresponding maps.

Response DM 1 – Round 1

Adjudication text page WR-12 has been updated to include Barbula # 2 (P85631W) as well as Adjudication Exhibits 5 & 8.

Comment DM 1 – Round 2

No comment received.

Response DM 1 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Appendix D1

Comment BJ 1 – Round 1

Appendix D1, Land Use, Table D1. 3-1; It is unnecessary to list the Expired Permit category of gas well permits. Since these APDs have expired without completion there is no related activity to the site. Listing of a non-event is not required. This also applies to the NO category since this indicates that the APD was refused, thus never became permitted through WOGCC.

Response BJ 1 – Round 1

Revised Table D1.3-1 as requested.

Comment BJ 1 – Round 2

No comment received.

Response BJ 1 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment SP 1 – Round 1

Appendix D-1. Exhibit D1.1-1. The landuses defined in Chapter 1 should be used on this Exhibit. Not the entire Brook Mine Permit falls neatly into these definitions so the following comments provide guidance:

a) The railroad, primary roads, oil and gas wells, and the facilities for Taylor Quarry would be considered Industrial commercial and may be shown with the vertical line stippling. The rest of the vertical stippling should be removed.

- b) The 4.5 acres of Agricultural lands would have the Land use of Cropland. This small acreage will not show up well on this map but is listed in Tables D.8-2 and RP.6-1 so no changes are needed to the map for this land use.
- c) The 12.8 acres of water might be listed under multiple landuses such as Grazingland, Fish and Wildlife habitat or Recreational. This small acreage will not show up well on this map but is listed in Tables D.8-2 and RP.6-1 so no change is needed to the map for this land use.
- d) The 4,421.8 acres remaining should be shown as Grazingland and Fish and Wildlife habitat. The legend on the map should have Fish and Wildlife Habitat added to Past and Present Grazingland landuse. The stippled area on the map will stay the same.
- e) No changes are needed to the areas identified as Recreational.

Response SP 1 – Round 1

Revised Exhibit D1.1-1 as requested.

Comment SP 1 – Round 2

No comment received.

Response SP 1 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment SP 2 – Round 1

Appendix D-1. Text that refers to the areas mined as Industrial commercial should be revised to remove the mining. A reference to Section 1.6 on historic mining can be made in Section D1.3.1. Grazingland. The reclaimed mined lands are now being used as Grazingland. The difference between the mined and never been mined is defined as the vegetation community that is called Reclaimed. Section D1.6 discusses the historic mining of the area and the discussion on coal mining in Industrial commercial (D1.4.3) can be removed.

Response SP 2 – Round 1

Revised text as requested.

Comment SP 2 – Round 2

No comment received.

Response SP 2 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Appendix D2

Comment BJ 2 – Round 1

Appendix D2, History, There are no comments for this section of the application. The narrative is well written and comprehensive.

Response BJ 2 – Round 1

No response is necessary.

Appendix D3

No comments were received regarding Appendix D3.

Appendix D4

Comment BJ 3 – Round 1

Appendix D4, Climatology, General comment – Is there no data for climatology that is more recent than 1990? It exists, therefore needs to be represented. Please locate and include the most recent climatological data. Twenty year-old data bears little resemblance to Sheridan County climate today so characterization of the present climate with a 20 year gap is problematic. Please reevaluate the data in light of locating and use more recent information.

Response BJ 3 – Round 1

Revised wind, relative humidity, and degree day data to reflect period between 1990 and 2013. Note, as can be observed by updated data, little change occurred in averages reported for wind, relative humidity, and degree days. Therefore, the wind rose provided in Figure D4.2-6 is deemed to still be representative of the Sheridan area. Revised Figure D4.2-1, Figure D4.2-11, Table D4.1-1, Table D4.2-2, Table D4.2-3, and Table D4.2-7 in response to this comment.

Comment BJ 3 – Round 2

No comment received.

Response BJ 3 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment BJ 4 – Round 1

Appendix D4, Climatology, Section D4.2.6, Why was 65°F used as the baseline temperature? Also, why were the high and low temperatures set to 86°F and 50°F respectively? Please clarify.

Response BJ 4 – Round 1

Revised text to clarify the choice of high and low temperatures.

Comment BJ 4 – Round 2

No comment received.

Response BJ 4 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment BJ 5 – Round 1

Appendix D4, Climatology, Figure 4.2-11, Are the degree days the total number of days that match the data points for the entire period from 1961 through 1990? This indicates that the data represented along the Y axis covers a period of 30 years on a daily basis. Please clarify.

Response BJ 5 – Round 1

Revised text with definitions of heating, cooling, and growing degree days to clarify Figure 4.2-11. Degree days are essentially a unit of measure like temperature, velocity, etc. A degree day signifies the number of degrees per day to heat or cool to a specified base temperature (most commonly 65°F). Each degree day is summed over the course of a month to estimate the total number of degree days that month. For example, July may have 0 heating degree days because all days are over 65°F, but will have cooling degree days nearly every day of the month. Figure 4.2-11 shows the average monthly degree days over the specified periods of data.

Comment BJ 5 – Round 2

No comment received.

Response BJ 5 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Appendix D5

Comment BJ 6 – Round 1

Appendix D5, Topography, Geology, and Overburden Assessment, Section D5.4.1, Paragraph 2 refers to "marginally suitable Selenium levels" as defined in LQD Guideline No.1. Guideline 1 has two separate sets of chemical quality criteria tables. Appendix 1 occurs on pages 17-21 as well as on pages 38-43. The first set of tables have been superseded by the second set of tables. Please use the tables on pages 38-43 when determining material suitability. The first Appendix 1 is being removed from the guideline.

The newer tables define the Selenium target as follows:

Suitable < 0.3 ppm

Marginal 0.3 – 0.8 ppm

Unsuitable > 0.8 ppm (dependent on premining water quality and overburden quality)

These values are established for uplands and ephemeral drainages unless it can be shown that Selenium impregnated materials will be buried above the groundwater potentiometric surface and below the reclaimed surface root zone. Other quality criteria have not changed.

Response BJ 6 – Round 1

Revised text as requested to reflect the revised LQD Appendix 1.

Comment BJ 6 – Round 2

No comment received.

Response BJ 6 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment BJ 7 – Round 1

Appendix D5, Topography, Geology, and Overburden Assessment, Figure D5.3-2, What units are expressed in the figure as the %g? Please include a footnote clarifying the measurement parameter.

Response BJ 7 – Round 1

Updated Figure D5.3-2 as requested.

Comment BJ 7 – Round 2

No comment received.

Response BJ 7 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment BJ 8 – Round 1

Appendix D5, Topography, Geology, and Overburden Assessment, Addendum D5-1, Are the Northings and Eastings in State Plane coordinates? It is assumed that they are but please verify this. The title at the top of the page could read Drill Hole Tabulations (State Plane Coordinates)

Response BJ 8 – Round 1

Updated as requested.

Comment BJ 8 – Round 2

No comment received.

Response BJ 8 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment BJ 9 – Round 1

Appendix D5, Topography, Geology, and Overburden Assessment, Addendum D5-2, Please rearrange the Lithologic and Electric logs in such a way that the Electric log immediately follows the Lithologic log. This allows for a more comprehensive examination of the data.

Response BJ 9 – Round 1

Rearranged logs as requested.

Comment BJ 9 – Round 2

No comment received.

Response BJ 9 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment BJ 10 – Round 1

Appendix D5, Topography, Geology, and Overburden Assessment, Holes R12-000 through R12-020 have the Northings and Eastings reversed. Please correct.

Response BJ 10 – Round 1

Updated as requested.

Comment BJ 10 – Round 2

No comment received.

Response BJ 10 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment BJ 11 – Round 1

Appendix D5, Topography, Geology, and Overburden Assessment, The Lithologic logs with the AMBRE designation 02, 03, and 04 do not have coordinates or elevations. Please provide coordinates and elevations for these three holes.

Response BJ 11 – Round 1

Updated as requested.

Comment BJ 11 – Round 2

No comment received.

Response BJ 11 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment BJ 12 – Round 1

Appendix D5, Topography, Geology, and Overburden Assessment, Hole R13-018 appears to have erroneous coordinates. The Northing is listed as 11,941,802. It should probably be 1,941,802. The elevation is shown as 43,887.9, where it should probably be closer to 3,887.9. Please verify and correct.

Hole R13-024 has a very high Northing at 61,941,541 and elevation at 73,885.4. These may be 1,941,541 and 3,885.4, respectively. Please verify and correct

Response BJ 12 – Round 1

Updated as requested.

Comment BJ 12 – Round 2

No comment received.

Response BJ 12 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment BJ 13 – Round 1

Appendix D5, Topography, Geology, and Overburden Assessment, A suggestion for future exploration: Ask the geophysical logger to reduce the gain on the gamma logs. The readjustment bounce on the logs makes them a bit difficult to read and interpret.

Response BJ 13 – Round 1

No response required.

Comment BJ 13 – Round 2

No comment received.

Response BJ 13 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment BJ 14 – Round 1

Appendix D5, Topography, Geology, and Overburden Assessment, Addendum D5-5, Pg. D5-5-4, The splitting tensile strength tests were run on four (4) samples from two (2) holes representing roof, coal, and floor conditions.

- a) Why were these locations used as representative of the lithologies encountered during mining?
- b) Are these few samples representative of all conditions expected to be encountered by the continuous miner (CM)?

Please elaborate and clarify the narrative. A statement must be made that strength testing will be performed on at least one set of samples per mining panel prior to use of the CM to insure that conditions are favorable for roof retention without subsidence. Lithology in this area is inconsistent and rock strength can vary accordingly. Using the data provided on the four samples tested indicates that some of the overburden from hole R13-19 is unsuitable for highwall mining, based on the CAT® Site Evaluation Tool For Highwall Miners;

(<http://webtools.cat.com/globalmining/highwallminers/index.html>).

Response BJ 14 – Round 1

Appendix D5 Section D5.3.3.2 has been updated as requested.

Comment BJ 14 – Round 2

No comment received.

Response BJ 14 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment BJ 15 – Round 1

Appendix D5, Topography, Geology, and Overburden Assessment, Addendum D5-4, Exhibits 1 – 7, Please include the drill hole locations on these isopach maps.

Response BJ 15 – Round 1

Updated as requested.

Comment BJ 15 – Round 2

No comment received.

Response BJ 15 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment BJ 16 – Round 1

Appendix D5, Topography, Geology, and Overburden Assessment, Exhibit 8, The map labeled as the isopach map of the Lower Masters bed is a contour of a surface. Please replace the contour map with the appropriate isopach map

Response BJ 16 – Round 1

Updated as requested.

Comment BJ 16 – Round 2

No comment received.

Response BJ 16 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment BJ 59 – Round 1

EXHIBITS, Addendum D5-4, Exhibit 1, The title on the map declares that this is an overburden isopach, but the bed name is missing. Please indicate which bed this map pertains to.

Response BJ 59 – Round 1

Updated Exhibit 1 of Addendum D5-4 as requested.

Comment BJ 59 – Round 2

No comment received.

Response BJ 59 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment BJ 60 – Round 1

EXHIBITS, Addendum D5-4, Exhibit 8, The name of the PDF file for this exhibit indicates that this is an isopach map of the Masters Lower coal bed. The title in the map indicates that this is the contour of the base of the Masters coal seam. Please correct the title of the PDF file.

Response BJ 60 – Round 1

The title of Exhibit 8 of Addendum D5-4 will be revised in the electronic copy, as requested.

Comment BJ 60 – Round 2

The title of Exhibit 8 in Addendum D5-4 remains unchanged. This appears to be an inadvertent oversight on the part of WWC.

The Current PDF file name is:

ADD_D5_4_EX_8_MASTERS_ISO-MASTERS_LOWER_R1.

The Title of the map in the Title Block is:

BOTTOM ELEVATION OF MASTERS COAL SEAM.

Please correct the name on the PDF file to better represent the contents of the exhibit.

Response BJ 60 – Round 2

Thank you for catching the oversight. The name on the PDF file has been changed to more accurately represent the contents of the map. The PDF with the corrected name will be emailed to Mr. Kristiansen.

Comment BJ 61 – Round 1

EXHIBITS, Addendum D5-6, Exhibit 1, we commend RAMACO for sampling overburden locations on 80 acre spacing. There are some gaps in the sampling plan, however, that need to have core holes drilled to fill them. The underground Coal Rules and Regulations in Chapter 7, Section 1(a)(i) are specific on ensuring that overburden geology is characterized in all locations where overburden will be removed or subsidence may occur. This essentially means that all areas above the planned coal panels need representative cores drilled to a sufficient density, approximately one hole for every quarter section of affected area. Based on that, the following locations still need to be characterized by overburden sampling:

NE1/4, sec.22, T.57N., R.84W.

NW1/4, sec.15, T.57N., R.84W.

NW1/4, sec.14, T.57N., R.85W.

SE1/4, sec.10, T.57N., R.85W.

Response BJ 61 – Round 1

A drilling rig was not able to enter the areas NW1/4, Sec.14, T.57N., R.85W and SE1/4, Sec.10, T.57N., R.85W. due to the steepness of the terrain, therefore no

samples were obtained. Sampling data for drill holes BH 166-78 and BE 326-78 have been incorporated into Addendum D5-2 and Addendum D5-7 to characterize the overburden in Sections 15 and 22.

Comment BJ 61 – Round 2

No comment received.

Response BJ 61 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment BJ 62 – Round 1

EXHIBITS, Addendum D5-6, Exhibit D5.1-1, Kudos to the staff member that created this slope analysis map. It is clear and concise and the histogram is very informative. Good job.

Response BJ 62 – Round 1

Thank you for this comment.

Comment BJ 62 – Round 2

No comment received.

Response BJ 62 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment DS 1 – Round 1

Appendix D5, The Coal Rules and Regulations, Chapter 7, Section 1(a)(i)(A) states that information required for the geological description pursuant to Chapter 2, shall be as follows: for areas where surface operations and facilities will cause removal of overburden down to a level of the coal seam, all information outlined in Chapter 2. Overburden sampling has not been performed in many of the locations where overburden will be removed during the mining operations. Additional sampling will be required to assess overburden chemistry in all areas where overburden removal will occur. The intensity of sampling should be 1 core per 160 acres (per quarter section). The LQD requests sampling every 1,900 linear feet on longer proposed disturbance areas or, at minimum, two cores within shorter disturbances separated sufficiently to provide a representative characterization of the proposed disturbance.

- a. Not all overburden has been characterized during analysis. Several lenses of shallow coal mixed with partings or narrow coal seams that will not be mined were not characterized. Because all overburden must be handled so as not to negatively affect surface water, groundwater or vegetation, all overburden must be adequately characterized. Therefore, the LQD requests additional

characterization of all overburden that will be backfilled into disturbed areas. It must also be stated that special handling and/or identification and use of topsoil/subsoil replacement may be required if unsuitable backfill or soil is placed within 4 feet of the surface on upland areas or within 10 feet of the surface in stream channels.

Response DS 1 – Round 1

Please see response to BJ 61.

Comment DS 1 – Round 2

Response is not adequate. The LQD requires additional overburden suitability analysis to be included for all areas to be disturbed during mining. No additional baseline overburden suitability assessment laboratory data was provided for holes BH 166-78 and BE 326-78. Please provide the raw data. Also, provide a commitment to sample overburden from areas to be disturbed by mining (specifically identify the pit sequence) where overburden baseline was not provided during baseline sampling. Sample every 1,300 feet in the sequence prior to overburden removal. Report the analytical results in the annual report for the year of initial disturbance for the pit sequence. Also, since RAMACO is reluctant to provide a special handling commitment, sampling must be performed at 500 ft. spacing on backfilled and rough graded pits (4 ft. depth on upland areas and 8 ft. depth under stream channel or permanent impoundments) to assure quality of surface materials. Also, if groundwater is expected in the pits, unsuitable materials must not be placed in the groundwater zone. Of the backfilled pit. (DS)

Response DS 1 – Round 2

For the location of the laboratory data for holes BH 166-78 and BE 326-78, please refer to Response BJ 61 (Round 1). Sampling data for drill holes BH 166-78 and BE 326-78 have been incorporated into Addendum D5-2, Addendum D5-7 and Table D5.4-2.

For the following commitments, please refer to the Mine Plan since these commitments are for operations rather than baseline studies. Please note that the text for these commitments has been in place. The following discussion provides the location of each commitment.

1. Section MP.4.6.1 states that the overburden sampling program will include one drill hole sample taken every 40 acres (16 sample locations per square mile) within areas where surface operations will cause removal of overburden down to the level of the coal seam. The delineation of 40 acres more correctly states the suggestion in Guideline No. 1 on page 9 in Section II(B)(3)(a)(1) as opposed to the suggestion of 1,300 feet. The first paragraph of Section MP.4.6.1 states that any additional overburden quality sampling will be submitted to WDEQ/LQD in

the mine's annual reports. No changes have been made in response to this comment since the text has been in place.

2. Section MP.4.6.2 states in the first paragraph that a backfill sampling program will be set on a 500-foot grid. The first paragraph of Section MP.4.6.2 also states that the sampling program will ensure that unsuitable materials aren't placed within the following depths of the land surface: four feet for uplands, six feet for ephemeral channels, and 10 feet for permanent impoundments or major channels and their 100-year floodplains. No changes have been made in response to this comment.

Comment DS 2 – Round 1

Appendix D5, Section D5.4. – documentation of protocols that differ from those approved by the Administrator in Guideline 1 typically require a signed document by LQD staff, not a request for different procedure signed by the company. This issue has been discussed with other mining companies and it has been determined that documentation of approval by LQD staff will be required if sampling/analytical protocols differ from those required by standing LQD policy. Please provide documentation of LQD staff approval for the 10-ft. overburden sampling interval.

Response DS 2 – Round 1

See Attachment A to this response package. This has also been added to Addendum D5-6 pages 4 and 5.

Comment DS 2 – Round 2

No comment received.

Response DS 2 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment DS 3 – Round 1

Appendix D5, Table D5.4-1 and Table D5.4-2 do not provide the current approved selenium concentration limits of 0-3 ppm (suitable), 3-8 ppm (marginal) and > 8 ppm (unsuitable). Please be sure to include the current approved suitability criteria as shown in Guideline 1, page 42. This will change the conclusions of the discussion provided in the Appendix D5 text. Also, in Table D5.4-2, please provide the correct units for analytical results in mg/Kg, not mg/L.

Response DS 3 – Round 1

Please refer to BJ 6 response. Appendix D5 text, Table D5.4-1, and Table D5.4-2 are updated as requested.

Comment DS 3 – Round 2

No comment received.

Response DS 3 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment DS 4 – Round 1

Appendix D5, The permit application provided to LQD staff for review has duplicated data provided after the map identified as Exhibit 1 which should be deleted. The exhibit should also be better identified as Exhibit D5-1 or something similar to clarify placement in the permit application should it become separated from the document in the future.

Response DS 4 – Round 1

The electronic copies were provided to LQD staff for review purposes. The hard copy on file is the official version. Also, please see response to Comment DS 5.

Comment DS 4 – Round 2

Response is not adequate. This issue was not addressed in the Round 1 comment response package. Duplicate data in the hard copy should be deleted.

Response DS 4 – Round 2

The duplicate soil analysis reports have been removed from Appendix D5. The reports were removed from Addendum D5-5 (pages Addendum D5-5-21 through Addendum D5-5-92). The reports remain in Addendum D5-7 since this is the addendum specified for the soil analysis reports. The Change Index identifies this revision. No other change is necessary since page Addendum D5-5-92 was the last page and Addendum D5-6 has unique pagination.

Because the exhibit name of “Exhibit 1” is specific to the overburden sampling plan of 8/26/2013 that was presented to WDEQ, and this name is referenced in the document, the name has not been changed. The exhibit has a unique page number (page Addendum D5-6-3) which will ensure that the exhibit is always located properly in the permit.

Comment DS 5 – Round 1

Appendix D5, Comparisons were made between Exhibit 1, the soils map and the Mine Plan map. Distinct differences in the affected area and permit boundaries were observed. Please be sure that correct boundaries for the proposed affected area and permit area are provided on all maps. Please also provide the contour interval on this exhibit.

Response DS 5 – Round 1

Addendum D5-6 is a copy of the overburden sampling plan as presented to WDEQ on 8/26/2013, which referenced Exhibit 1. Therefore, no changes to the exhibit will be made.

Comment DS 5 – Round 2

Response is not adequate. All exhibits presented in this permit must show the correct permit boundary and affected area boundaries, or, if the boundaries are removed, must reference a map of the same scale that contains the correct boundaries. Please correct the permit boundaries and affected area boundaries on all exhibits in this permit application.

Response DS 5 – Round 2

The permit boundary on Exhibit 1 in Addendum D5-6 was removed from the exhibit due to this boundary not being the same as that presented in the current permit as requested by the reviewer. However, the current boundary was not added to the exhibit because this exhibit represents the information provided to, and approved by, WDEQ for the overburden sampling plan. Instead, a note has been added to the exhibit that references Exhibit C1a of the Adjudication File for the correct permit boundary of the Brook Mine.

Comment KM 2 – Round 1

Appendix D5, Page D 5-9 refers to samples collected from roof and floor from “many” locations throughout the permit area. However, supporting documentation appeared to be from only two borings and included two roof and one floor sample. In addition, the laboratory noted the floor sample did not have sufficient length and a correction factor was used to determine unconfined compressive strength. Additional structural analysis of the overburden, interburden and floor is required.

Response KM 2 – Round 1

During preparation of the MSHA Ground Control Plan additional coring of the coal and overburden will occur, data gathered from this activity will be supplied to WDEQ/LQD when it is received. Please see response to BJ 14.

Comment KM 2 – Round 2

No comment received.

Response KM 2 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment KM 3 – Round 1

Appendix D5, Please provide a discussion of the structural analysis of the overburden and interburden. The discussion shall address the potential for subsidence during and after mining.

Response KM 3 – Round 1

Structural analysis of the overburden, interburden, floor, and roof must be conducted for the MSHA Ground Control Plan. Information gathered for this plan will be provided when it is received. No text was updated in response to this comment. Please see response to BJ 14.

Comment KM 3 – Round 2

No comment received.

Response KM 3 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment KM 4 – Round 1

Appendix D5, Please discuss the aquifer(s) below the lowest coal seam and the potential for mining to impact these aquifer(s).

Response KM 4 – Round 1

The lowest coal seam targeted for mining is largely dry and is also confined by a clay layer. The underburden is not considered an aquifer therefore no impacts will occur.

Comment KM 4 – Round 2

No comment received.

Response KM 4 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment Muk 1 – Round 1

Appendix D5, Section D5.3.3.2 Overburden and Interburden, 1. This section provides a discussion of the thickness of interburden and not overburden. Please provide a discussion (or a reference) on the thickness of the overburden. (MK)

Response Muk 1 – Round 1

A reference to the geologic cross-sections Addendum D5-3 has been added to Section D5.3.3.2.

Comment Muk 1 – Round 2

Response not accepted. In addition to the reference to Addendum D5-3 cross section figures, please provide a textual interpretation on the overburden thickness. Please refer to D53.3.2 interburden thickness description as an example for the requested description. (MK)

Response Muk 1 – Round 2

A qualitative discussion of the Carney overburden thickness has been added to the first paragraph of Section D5.3.3.2.

Comment Muk 2 – Round 1

Appendix D5, Section D5.3.3.3 Coal, 2. On Page D5-10, there is a good discussion about the thickness of the two coal seams. Please provide a description on the depth from land surface to these coal seams. (MK)

Response Muk 2 – Round 1

A reference to the geologic cross-sections Addendum D5-3 has been added to Section D5.3.3.3.

Comment Muk 2 – Round 2

Response not accepted. In addition to the reference to Addendum D5-3 cross section figures, please provide a textual description/interpretation on the depth from land surface to the different coal seams targeted by the mine plan. (MK)

Response Muk 2 – Round 2

A qualitative description of the overburden material from the ground surface to the top of the Carney coal seam has been added to the middle of the second paragraph of Section D5.3.3.3. Discussion of the total material from the ground surface to the top of the Masters Seam has been added to the end of the third paragraph in Section D5.3.3.3. As requested, the revised text adds qualitative background on the varying depths of the total material from the land surface to the top of the two respective target coal seams, Carney and Masters.

Comment Muk 3 – Round 1

Appendix D5, Section D5.3.3.3 Coal, 3. Page D5-10 states, “Monarch seam exist within isolated portions of the mine areas as shown on the geologic cross sections in Addendum D5-3 and may present a secondary target.” However, Table D5.3-2 does not provide the coal quality characteristics for Monarch coal seam. If Monarch seam is part of the mine plan, please include the coal quality characteristics of Monarch coal seam in Table D5.3-2 and a description of thickness and depth from land surface.

Response Muk 3 – Round 1

Table D5.3-2 has been updated with the coal quality characteristics for the Monarch seam. The overburden and seam thickness are included on the geologic cross-sections located in Addendum D5-3 referenced in the text.

Comment Muk 3 – Round 2

Response not accepted. It is acknowledged and accepted that Table 5.3-2 is updated with coal quality characteristics of Monarch coal seam. In addition to the reference to Addendum D5-3 cross section figures, provide a textual interpretation of thickness and depth from land surface for the Monarch coal seam. (MK)

Response Muk 3 – Round 2

Textual interpretation of the Monarch coal seam thickness and the depth of material above the top of the Monarch seam have been added to the end of fourth paragraph in Section D5.3.3.3.

Comment Muk 4 – Round 1

Appendix D5, Section D5.3.3.3 Coal, 4. Please include a discussion on Dietz (1, 2, 3) coal seams, if they are present in the mine permit boundary. If they are part of the mine plan, please include the coal quality characteristics in Table D5.3-2. (MK)

Response Muk 4 – Round 1

Discussion about the Dietz seams has been added in Section D5.3.3.3. These coal seams are not part of the currently proposed Mine Plan. Therefore, the quality data were not included in the table.

Comment Muk 4 – Round 2

No comment received.

Response Muk 4 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment Muk 5 – Round 1

Appendix D5, Section D5.3 Geology of Mine Area, 5. Please provide a description of the stratigraphic units below the Masters coal seam. (MK)

Response Muk 5 – Round 1

Section D5.3.3.4 has been added to discuss the underburden.

Comment Muk 5 – Round 2

Response not accepted. Please expand the discussion in the newly added Section D5.3.3.4 to include a textual interpretation of the underburden thickness. (MK)

Response Muk 5 – Round 2

The text in Section D5.3.3.4 has been revised to include discussion of the underburden thickness.

Comment Muk 6 – Round 1

Appendix D5, Addendum D5-3 Geologic Cross Sections, 6. Several of the geologic cross sections show UNK – unknown coal seam (Stringer). Please include a brief discussion about this stringer in Section D5.3.3.3 (MK)

Response Muk 6 – Round 1

Discussion about the stringers with unknown names has been added to fifth paragraph in Section D5.3.3.3.

Comment Muk 6 – Round 2

Response not accepted. In addition to the reference to cross section figures, please provide a textual description on the variability, interpreted thicknesses of these stringers. (MK)

Response Muk 6 – Round 2

Further discussion of the unknown coal stringers has been added to the end of the fifth paragraph of Section D5.3.3.3.

Comment Muk 7 – Round 1

Appendix D5, Addendum D5-4 Isopachs, 7. Please include the wells/drill holes (control points) used to interpret the isopachs and elevation contours in the maps. In addition, label all the control points with names and the thickness (or elevation, as appropriate). This comment is applicable to Addendum D5-4, Exhibits 1 through 8. (MK)

Response Muk 7 – Round 1

Addendum D5-4 Exhibits 1 to 8 have been updated with drill hole locations as requested. A reference to Addendum D5-2 has been added to the exhibits for seam name and thickness.

Comment Muk 7 – Round 2

Response not accepted. It is acknowledged and accepted that the labels for all the control point names were included. However, thickness (or elevation, as appropriate)

labels are not included as requested. Is it relatively easy for the software that was used for isopach elevation contours to label the thickness (or elevation)? The intent of this comment is to increase the robustness of the review of the interpreted contours by having appropriate point control data plotted in the same map. This comment is applicable to Addendum D5-4, Exhibits 1 through 8. (MK)

Response Muk 7 – Round 2

As requested, Addendum D5-4 Exhibits 1-8 have been revised to include thickness or elevation, as appropriate, of the applicable seam at each drill hole. It's worth noting, that generally the thicknesses/elevations were obtained from the lithologic logs in Addendum D5-2; however, some drill holes were interpreted differently using analysis of the electric logs (Addendum D5-2), lithologic logs (Addendum D5-2) and cross sections (Addendum D5-3).

Comment Muk 8 – Round 1

Appendix D5, Addendum D5-5 Overburden, Roof and Floor Sample Analysis Table, 8. Please describe these analyses, methodology, results and provide an interpretation of their applicability to the mine/reclamation plan. (MK)

Response Muk 8 – Round 1

Please see response to BJ 14.

Comment Muk 8 – Round 2

No comment received.

Response Muk 8 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Appendix D6

Comment BJ 17 – Round 1

Appendix D6, Hydrology, Section D6.2.3, Pg. D6-20, Narrative in the last paragraph – why were no samples taken in Hidden Water Creek? Please explain.

Response BJ 17 – Round 1

No flow was observed in Hidden Water Creek during baseline sampling, so no samples were taken. The text has been revised to reflect that there were no flows observed.

Comment BJ 17 – Round 2

No comment received.

Response BJ 17 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment BJ 18 – Round 1

Appendix D6, Hydrology, Table D6.1-8, Regarding the HEC-RAS modeling results – The values for Hidden Water Creek and Slater Creek are identical. Is this accurate or is it a typographical error? Please clarify.

Response BJ 18 – Round 1

Updated table to remove typographical error.

Comment BJ 18 – Round 2

No comment received.

Response BJ 18 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment BJ 19 – Round 1

Appendix D6, Hydrology, Addendum D6-7, The well construction summary sheets need to have the coal bed names listed on the well lithology sections to the right of the well diagrams. Please label accordingly.

Response BJ 19 – Round 1

Updated as requested.

Comment BJ 19 – Round 2

No comment received.

Response BJ 19 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment BJ 20 – Round 1

Appendix D6, Hydrology, Attachment D6-8-A, Pg. D6-8-20, A statement is made that water within both coal seams is expected to be "high quality" and "good" water. Please define the meaning of those characterizations. Are these judgments based on MCLs or some other value? Are they being classified by some constituent values? Or is there another metric being used? Please clarify.

For example; referencing WQD R&R, Chapter 8, Table I, Class I, II, or III would better define the essential characteristics of the water quality. Numerical values of

critical constituents, such as TDS, could also serve to define the quality as "good". More descriptive qualifiers are needed to judge the water quality.

Response BJ 20 – Round 1

Revised text as requested.

Comment BJ 20 – Round 2

No comment received.

Response BJ 20 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment BJ 21 – Round 1

Appendix D6, Hydrology, Attachment D6-8-E, Hydrographs, The x parameter, time, is depicted in days. It appears that this scale should have been adjusted to show time in hours due to the rapid changes seen in the hydrographs. Please use a finer scale for the x axis.

Response BJ 21 – Round 1

The hydrographs were originally set up with the x axis in days to allow the reader to review recovery data. Rather than modifying the original hydrographs, additional hydrographs, each of which depict the time axis in hours, were developed and included as pages D6-8-36a and D6-8-37a. These additional hydrographs detail the water level changes over the portion of the pumping test period where the water level changes in the wells were the most rapid.

Comment BJ 21 – Round 2

No comment received.

Response BJ 21 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment BJ 22 – Round 1

Appendix D6, Hydrology, Attachment D6-8-F, The above mentioned comment can also be applied to the Carney well hydrographs. Please adjust the x axis to hours.

Response BJ 22 – Round 1

The hydrographs were originally set up with the x axis in days to allow the reader to review recovery data as well. Rather than modifying the original hydrographs, additional hydrographs, each of which depict the time axis in hours, were developed and included as pages D6-8-39a and D6-8-40a. These additional hydrographs detail

the water level changes over the portion of the pumping test period where the water level changes in the wells were the most rapid.

Comment BJ 22 – Round 2

No comment received.

Response BJ 22 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment BJ 23 – Round 1

Appendix D6, Hydrology, Addendum D6-9, Pg. D6-9-2, Please include a column in Table D6-1 that indicates the elevation of the bottom of the well or TD. The total water column is important when assessing groundwater characteristics. Please correct.

Response BJ 23 – Round 1

Table D6-1 has been revised as requested.

Comment BJ 23 – Round 2

No comment received.

Response BJ 23 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment BJ 24 – Round 1

Appendix D6, Hydrology, Addendum D6-10, Pgs. D6-10-28 through D6-10-53, On the sample analysis reports, Please provide a brief narrative at the beginning of the lab results to give context to the data. Footnotes on the pages refer to MCLs or other parameters of water quality used for classification. However, the context that is used to define these parameters is missing. The assumption is made that these quality values are derived from the WQD R&R, Chapter 8, Table I definitions. But that is uncertain as no frame of reference is given. A brief sentence or two at the beginning of the section would clarify the numerical standards used in the report. Please adjust the narrative accordingly.

Response BJ 24 – Round 1

Page D6-10-27a was added to provide the requested narrative.

Comment BJ 24 – Round 2

No comment received.

Response BJ 24 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment BJ 25 – Round 1

Appendix D6, Hydrology, Please include the lithology of the sampled zone, either in the sampling information sheets, or on the sample analysis reports. Identification of the lithology sampled needs to be readily available with the analysis. This applies to all increments sampled. The sampled zones do have identification on the sample sheets with a shorthand nomenclature but persons unfamiliar with the lithology of the prospect area would be at a disadvantage when evaluating the sample results. A simple reference table at the beginning of the section would be sufficient. For example; MST=Masters, CRN=Carney, AL=Alluvium. Non-geologists need some frame of reference. Please create a clarifying narrative.

Response BJ 25 – Round 1

Reference text with abbreviations defined has been added on page Addendum D6-10-27a, as requested.

Comment BJ 25 – Round 2

No comment received.

Response BJ 25 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment DM 2 – Round 1

Appendix D6-Hydrology, D6.1x – The drainage basin description and surface water quantity sections are lacking detail. As mentioned in M. Kunze's comments, the data from the terminated Slater Creek USGS gauge, and historical monitoring data from Big Horn Mine (permit no. 213) should be included.

The data collected at the monitoring stations that is presented in Addendum D6-4 does not appear to agree with the statement that Slater Creek is a "predominantly ephemeral" stream. Please reconcile the text with the data.

Response DM 2 – Round 1

Peak flow data from the USGS gage station on Slater Creek has been provided. See response to MK 30. The text in Section D6.1.5.2 has been updated to clearly indicate that Slater Creek is an ephemeral stream.

Comment DM 2 – Round 2

No comment received.

Response DM 2 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment DM 3 – Round 1

Appendix D6-Hydrology, D6.2.4 States that Groundwater Rights are in Appendix E2 of the Adjudication Volume. Groundwater Rights are actually listed in Appendix B2. Please Correct.

Response DM 3 – Round 1

Text revised as requested.

Comment DM 3 – Round 2

No comment received.

Response DM 3 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment KM 5 – Round 1

Appendix D6, 2. The pre-mining potentiometric map for the Masters coal seam shows the elevation of the groundwater at a higher elevation than the surface elevation in Sections 11 and 12 (in the vicinity of Slater Creek outside of the permit area). Either show the potentiometric surface as dotted across this area or revise the potentiometric lines such that the groundwater elevation is below the ground surface elevation. Issue addressed by BJ Kristiansen. Please see comment No. 65.

Response KM 5 – Round 1

Exhibits D6.2-2 and D6.2-3 have been revised as requested.

Comment KM 5 – Round 2

No comment received.

Response KM 5 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment KM 6 – Round 1

Appendix D6, 3. The groundwater elevation for the Carney coal seam in monitor well 578417-CRN was given as 3795.59. The potentiometric contour for 3800 is drawn south of this monitor well. Please correct the contour line to be consistent with the groundwater elevation shown for monitor well 578417-CRN. Correction of this contour

line may also adjust how the contour lines for 3780 and 3760 are drawn, such that they may be drawn consistent with other contour lines.

Response KM 6 – Round 1

Contours in Exhibit D6.2-3 have been revised as requested.

Comment KM 6 – Round 2

No comment received.

Response KM 6 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment KM 7 – Round 1

Appendix D6, 4. Page D6 8-8: The text refers to the pump test in the Carney coal seam. According to the procedures in the previous section, transducers were placed in CRN and CRN-OB; however on the referenced page, it states transducers remained in MST and MST-OB after pumping. LQD believes this to be a typographical error.

Response KM 7 – Round 1

LQD is Correct, this is a typographical error. The sentence should read “After the pumping period, the transducers remained in CRN1 and CRN-OB until 8:00AM on November 16, 2013.” Page D6-8-8 has been updated with the typographical error corrected and a replacement page is included.

Comment KM 7 – Round 2

No comment received.

Response KM 7 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment KM 8 – Round 1

Appendix D6, 5. Please discuss why the water levels rose in the Carney coal seam during the pump test in the Masters coal seam.

Response KM 8 – Round 1

This comment is addressed in comment 19 from Muthu Kuchanur.

Comment KM 8 – Round 2

No comment received.

Response KM 8 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment KM 9 – Round 1

Appendix D6, 6. What effect would a leaking pump have on the results of the pump test in the Masters coal seam?

Response KM 9 – Round 1

This comment is assumed to originate from the note on page Addendum D6-8-30. This note is in reference to activities that occurred immediately after the pumping test was shut off. The pump used for the pumping test did not have a foot valve. Therefore, after the pump was shut off, water in the discharge pipe immediately began to drain back into the well. The pump and piping was pulled out of the well as fast as possible and not all of the water in the pipe drained back into the well. However, the personnel conducting the pumping test were concerned that the water draining into the well would result in a rapid rise in the water level in the well and wanted to note it for the record on the field data sheet. It is estimated that less than 2 gallons of water actually drained out of the line into the well while the pump was being pulled which would result in a water level rise in the well of less than 0.25 foot. Given that the water level recovery in the well was very rapid immediately upon cessation of the pumping test (approximately 2 feet in the first ten minutes after the pumping test ended) and the early time recovery data was largely ignored for the purposes of doing the aquifer characterization evaluations, the leaking pump would not have had an impact on the results of the pumping test.

Comment KM 9 – Round 2

No comment received.

Response KM 9 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment KM 10 – Round 1

Appendix D6, 7. Please make sure all maps that are stamped are also signed and dated by the engineer, as required by regulation.

Response KM 10 – Round 1

All maps that are stamped will be signed and dated by the engineer as required by law. This does not include digital versions. The digital copies have been provided for WDEQ review. The hard copy is the official copy.

Comment KM 10 – Round 2

No comment received.

Response KM 10 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment KM 17 – Round 2 (New Comment)

Based on LQD's review of the well logs for Wells 578409-CRN-OB and 578409-MST-OB, the wells were screened in a coal seam, not in overburden. Please address all hydrologic information discussing overburden which was based on these wells and which may be in error.

Response KM 17 – Round 2 (New Comment)

The "OB" designation refers to "observation" rather than overburden. It is noted that this is a poor naming convention, but the naming had already been established. We apologize for the confusion. Additionally, Section D6.2.1.1 states that electric logs with resistivity data have demonstrated that the overburden is dry. Section D6.2.2.1 states that no monitoring wells were completed in the overburden or interburden because no water was found in these units during drilling. The nomenclature page in Addendum D6-10 (page Addendum D6-10-27A) has been revised to state: OB=observation.

Comment KM 18 – Round 2 (New Comment)

The well logs for 578409-CRN and 578409-CRN-OB show the wells are screened in a coal seam labeled "Masters", not Carney. This appears to be a typographical error on the well log. Please correct.

Response KM 18 – Round 2 (New Comment)

The typographical error has been corrected on the well logs 578409-CRN and 578409-CRN-OB.

Comment MK 29 – Round 1

Appendix D6-Hydrology, Section D6.1.2 Drainage Basin Description, 3. On Page D6-2 it is stated that Slater Creek is an ephemeral stream. Aerial imagery shows a riparian area with trees and subirrigation occurring along much of the channel. PEM wetlands are also present as documented in Appendix D10. It would seem that an ephemeral stream may not be able to support these features. Please provide the justification why Slater Creek is considered an ephemeral stream, and that the stream does not contain intermittent characteristics where it is not below the local water table for a portion of the year. (MDK)

Response MK 29 – Round 1

Please see response to DM2.

Comment MK 29 – Round 2

Response not accepted. Please include additional discussion on the hydrology of Slater Creek to include what was added to Page D11-8 in Appendix D-11 in response to Comment MK 8: *Infiltration of precipitation into the burn and then slow release of the stored water acts as a water source for the subirrigation and surface flow of Slater Creek.*

In addition, a comparison of the 2014 observed flows between the upstream and downstream stations on Slater Creek shows that flows were higher at the upstream station for the majority of the period. This may suggest Slater Creek is a losing stream. Please discuss this further in the description of the hydrology of Slater Creek. (MDK)

Response MK 29 – Round 2

The additional discussion for Slater Creek hydrology has been added to the middle of the third paragraph in Section D6.1.2 as requested.

Comment MK 30 – Round 1

Appendix D6-Hydrology, Section D6.1.3.2 Flood Studies, 4. The USGS operated a peak flow gage on Slater Creek from 1967 to 1981 (Station No. 06299900, http://nwis.waterdata.usgs.gov/wy/nwis/inventory/?site_no=06299900&agency_cd=USGS). The gage was located just downstream of the proposed permit boundary near the confluence with the Tongue River. Please incorporate the annual peak flow data from this station into the permit application to illustrate the range of peak flows that might be expected from Slater Creek. (MDK)

Response MK 30 – Round 1

The text and Tables D6.1-2 and D6.1-3 have been revised to include peak flow data for USGS Station No. 06299900.

Comment MK 30 – Round 2

No comment received.

Response MK 30 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 31 – Round 1

Appendix D6-Hydrology, Section D6.1.3.2 Flood Studies, 5. Some of the U.S. Army Corps of Engineers references cited in the text (2000, 2001) do not appear in the References Section (Section D6.3). Please add these to the references list. (MDK)

Response MK 31 – Round 1

The text edits have been made as requested.

Comment MK 31 – Round 2

Response not accepted. The citation (U.S. Army Corps of Engineers, 2001) on Page D6-3 still does not appear in the reference list. Please add this to the Reference Section (Section D6.3). (MDK)

Response MK 31 – Round 2

The year in the U.S. Army Corps of Engineers citation on page D6-3 was changed to 2009 to match the references provided in Section D6.3. The change was an inadvertent oversight on the part of WWC.

Comment MK 32 – Round 1

Appendix D6-Hydrology, Section D6.1.3.2 Flood Studies, 6. Please add the year to the Miller reference within the text (2003) and add this citation to the references list in Section D6.3. (MDK)

Response MK 32 – Round 1

The text edits have been made as requested.

Comment MK 32 – Round 2

No comment received.

Response MK 32 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 33 – Round 1

Appendix D6-Hydrology, Section D6.1.3.2 Flood Studies, 7. Please explain in the text if the existing impoundments (stock reservoirs, old mine pits, etc.) in both the Slater Creek and Hidden Water Creek drainages were considered in the routing functions for the HEC-HMS runoff estimates. These features would likely have an effect on attenuating peak flows. (MDK)

Response MK 33 – Round 1

The text has been revised to clarify the impoundments are not included the HEC-HMS model. As described, peak flow estimates should be conservatively high without attenuation of storm events by impoundments.

Comment MK 33 – Round 2

No comment received.

Response MK 33 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 34 – Round 1

Appendix D6-Hydrology, Section D6.1.3.2 Flood Studies, 8. As the text states on Page D6-5, the HEC-HMS runoff estimates in Table D6.1-7 are higher than the Miller (2003) equation estimates. Please provide a discussion in the text as to the reasonableness of the HEC-HMS estimates and why the HEC-HMS estimates are so much higher than the Miller (2003) equation estimates.

The Miller (2003) equation for this region used, in part, data from the USGS peak flow gage on Slater Creek, so it would seem that the Miller (2003) estimates may be more reasonable. For example, compared to the HEC-HMS estimates, the 15-year record from the peak flow gage on Slater Creek would not register at anything greater than a five-year event. Furthermore, the May 18, 1978 event on Slater Creek resulted in a peak flow of 1,100 cfs, which according to the HEC-HMS estimates would only be around a 2-year event. USGS studies have shown that the May 1978 flood event was estimated to be a 100-year event on some parts of the Tongue River in this area (<http://pubs.usgs.gov/pp/1244/report.pdf>). (MDK)

Response MK 34 – Round 1

A discussion in the text has been included that speaks to why the HEC-HMS results are higher than the Miller results. Additionally, a discussion acknowledges the report by the USGS on the May 1978 flood. The Miller analysis does appear to more closely estimate the peak flowrates for flood events for the short data record on Slater Creek. However, hydraulic calculations will continue to use the HEC-HMS results because of the conservative results and the ease in comparing to the postmining hydrologic environment. HEC-HMS provides a way to change the properties of the drainage basins to reflect what will be present postmining, and the comparison between the premining and postmining HEC-HMS models quantifies the magnitude of the impact the Brook Mine will have on the hydrologic balance.

Comment MK 34 – Round 2

No comment received.

Response MK 34 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 35 – Round 1

Appendix D6-Hydrology, Section D6.1.5.1 Monitoring Stations, 9. Please add the northing/easting State Plane coordinates for the four Brook Mine surface water monitoring stations to Table D6.1-11. (MDK)

Response MK 35 – Round 1

The locations of the surface water monitoring sites have been reported to the quarter-quarter, which is an adequate level of accuracy to report the monitoring locations.

Comment MK 35 – Round 2

Response not accepted. The location coordinates are needed for plotting the locations of the stations; the quarter-quarter does not provide the needed level of accuracy for this. Reporting the northing/easting State Plane coordinates for monitoring locations is standard practice in other LQD coal permits and would be required when reporting station information in the Annual Report as part of the LQD Coal Annual Report Format (CARF). Please add the northing/easting State Plane coordinates for the four Brook Mine surface water monitoring stations to Table D6.1-11. (MDK)

Response MK 35 – Round 2

The northing and eastings for the surface water monitoring station have been added to Table D6.1-11, as requested.

Comment MK 36 – Round 1

Appendix D6-Hydrology, Section D6.1.5.1 Monitoring Stations,10. On Page D6-8, it is not necessary to mention the State of Montana water quality classifications of the Tongue River, as only State of Wyoming classifications and standards would apply. Please remove reference to the Montana standards. (MDK)

Response MK 36 – Round 1

The text has been revised as requested.

Comment MK 36 – Round 2

No comment received.

Response MK 36 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 37 – Round 1

Appendix D6-Hydrology, Section D6.1.5.1 Monitoring Stations, 11. On Page D6-8, second paragraph, it states that increased E.Coli from samples collected in 2006 were attributable to high flows in May-June 2010. Were the samples also collected in 2010 and not 2006? Please revise this sentence. (MDK)

Response MK 37 – Round 1

The sentence was revised to read more clearly. The sentence was saying that samples taken in 2010 experienced an increase in E.Coli bacteria compared to the samples collected in 2006.

Comment MK 37 – Round 2

No comment received.

Response MK 37 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 38 – Round 1

Appendix D6-Hydrology, Section D6.1.5.1 Monitoring Stations, 12. On Page D6-8, second paragraph, it would be informative to add that, in addition to the SCCD, other entities such as the Big Horn Mine, USGS, and WDEQ/WQD have collected water quality data on the Tongue River and Goose Creek near the proposed mine. It may also be informative to mention that sections of the Tongue River in the vicinity of the proposed mine are on the State's 303(d) list since certain uses are not supported due to impaired water quality. Goose Creek has also been on the 303(d) list in the past and a TMDL has been prepared. Information can be found at: <http://deq.wyoming.gov/wqd/water-quality-assessment/resources/reports/> and <http://deq.wyoming.gov/wqd/tmdl/>. (MDK)

Response MK 38 – Round 1

The text has been revised as requested. Refer to Section D6.1.5.1.

Comment MK 38 – Round 2

No comment received.

Response MK 38 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 39 – Round 1

Appendix D6-Hydrology, Section D6.1.5.2 Surface Water Quantity, 13. The Big Horn Mine (WDEQ/LQD Permit 213) operated a station on Hidden Water Creek (HWC1-79)

from 1979 to 1998. This station was located approximately ¼ mile upstream from station SM578415-SW-1 that was installed by the Brook Mine. The LQD Hydrology Database contains mean daily flow data from this station from 1982 to 1997, although several years are missing data. Baseline water quantity characterization of Hidden Water Creek in the Brook Mine permit application would be strengthened if these data were incorporated and discussed. The LQD can provide these data in electronic format upon request or a more complete dataset may be available if requested from the Big Horn Mine. (MDK)

Response MK 39 – Round 1

Please see response to DM 2 and MK 30.

Comment MK 39 – Round 2

Response not accepted. The response referenced Comments DM 2 and MK 30, which refer to Slater Creek, not Hidden Water Creek. The LQD emailed the Hidden Water Creek data to WWC Engineering on July 8, 2015. Please incorporate and discuss the data to strengthen the baseline water quantity characterization of Hidden Water Creek in the Brook Mine permit application. (MDK)

Response MK 39 – Round 2

Please refer to the added text at the bottom of the second paragraph of Section D6.1.5.2 summarizing the flow data from the Big Horn Mine Hidden Water Creek former surface water monitoring station, HWC1-79. In addition, Table D6.1-14 has been added which provides the number of flow days per month and the maximum average flow for each day during a given flow month for the 1982 through 1997 period of record. The approximate location of HWC1-79 has been added to Exhibit D6.1-2.

Comment MK 40 – Round 1

Appendix D6-Hydrology, Section D6.1.5.3 Surface Water Quality, 14. Please briefly discuss in the text the water quality results from Slater Creek in the context of WQD Surface Water Quality Standards for Class 3B waters (see Chapter 1 of WQD Rules and Regulations). This would reveal whether or not designated uses were being met prior to mining. The two samples from Slater Creek indicate no exceedances of Class 3B criteria, indicating uses are supported. (MDK)

Response MK 40 – Round 1

The text has been updated as requested.

Comment MK 40 – Round 2

No comment received.

Response MK 40 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 41 – Round 1

Appendix D6-Hydrology, Section D6.1.5.3 Surface Water Quality, 15. It is understood that water was not flowing in Hidden Water Creek so the applicant could not collect a sample for baseline purposes. However, as previously mentioned, the Big Horn Mine operated a station on Hidden Water Creek (HWC1-79) from 1979 to 1998. The LQD Hydrology Database contains nine water quality samples collected at this site from 1979 to 1989. Baseline characterization of Hidden Water Creek in the Brook Mine permit application would be strengthened if these data were incorporated and discussed. The LQD can provide these data in electronic format upon request. (MDK)

Response MK 41 – Round 1

Request for information is pending. No update to the permit has occurred at this time in response to this comment.

Comment MK 41 – Round 2

Response to the comment is pending. As discussed in the review of the response to Comment MK 39, the LQD emailed the Hidden Water Creek data to WWC Engineering on July 8, 2015. Please incorporate and discuss the data to strengthen the baseline water quality characterization of Hidden Water Creek in the Brook Mine permit application. (MDK)

Response MK 41 – Round 2

Please refer to the added text at the bottom of the second paragraph of Section D6.1.5.3 summarizing the surface water quality in Hidden Water Creek for the Big Horn Mine surface water monitoring station, HWC1-79. In addition, Table D6.1-15 has been constructed which displays concentrations of the nine samples collected for the 1979 through 1989 period of record. The approximate location of HWC1-79 has been added to Exhibit D6.1-2.

Comment MK 42 – Round 1

Appendix D6-Hydrology, Section D6.1.5.4 Sediment Transport, 16. This section would be enhanced by including data from a single sediment sample collected on Slater Creek at USGS Station No. 06299900 (peak flow gage previously discussed in Comment No. 4). This sample was collected in June 1967 at a flow of 18 cfs. The TSS was 11,600 mg/L and the suspended sediment discharge was 564 tons/day. (MDK)

Response MK 42 – Round 1

The text has been revised to include the additional sediment sample as requested.

Comment MK 42 – Round 2

No comment received.

Response MK 42 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 43 – Round 1

Appendix D6-Hydrology, Addendum D6-5 – Rating Curves, 17. A rating curve developed using only the Manning equation will provide only a rough estimate of flows given the uncertainty in the Manning's roughness coefficient. It is recommended that direct discharge measurements also be taken over time to help evaluate the rating curves developed for the four monitoring sites. (MDK)

Response MK 43 – Round 1

The rating curves were developed for ephemeral streams that flow infrequently enough that water measurements cannot be taken at regular intervals. Manning's equation provides a reasonable and widely accepted mathematic approximation of stream flow rates.

Comment MK 43 – Round 2

Response not accepted. Developing a rating curve for an open channel using only Manning's equation and no direct measurements is not a standard practice. If a direct discharge measurement is not occasionally taken, the accuracy of the modelled rating curve will never be known. Please commit to periodically taking a direct measurement to evaluate the rating curves. (MDK)

Response MK 43 – Round 2

A commitment to obtain direct measurements of surface water monitoring stations, when possible, was added to Section MP.7.1.

Comment MK 44 – Round 1

Appendix D6-Hydrology, Addendum D6-5 – Rating Curves, 18. Given the uncertainty in the Manning equation, the estimated flow rates provided in Table D6-3 and Attachment D6-5-A (Rating Tables) are reported at much too high a level of precision to be meaningful. Depending on the magnitude of the flow estimate, there should be only one or two significant figures provided. For example, 0.29 cfs = 0.3 cfs and 3,584.38 cfs = 3,600 cfs. Please revise these tables. (MDK)

Response MK 44 – Round 1

Summary Table D6-3 has been revised to engineering precision (no more than three significant figures). The values in Attachment D6-5-A are essentially raw data that are

being reported to that magnitude to show the validity of calculations and to aid in curve development. Being raw data, the values were not revised from those previously reported.

Comment MK 44 – Round 2

No comment received.

Response MK 44 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment Muk 9 – Round 1

Appendix D6, Section D6.2.1 Regional Hydrogeology, 9. Page D6-12 states, “The potential groundwater in the formation as capable of yielding small quantities of water for domestic and stock use”. Please consider providing a range of estimates for well yields based on literature review or from the baseline data collected by the Brook Mine. (MK)

Response Muk 9 – Round 1

The text has been revised to indicate that coal is the only regional shallow aquifer that has a sufficient quantity of water to support domestic and stock use.

Comment Muk 9 – Round 2

No comment received.

Response Muk 9 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment Muk 10 – Round 1

Appendix D6, Section D6.2.1 Regional Hydrogeology, 10. The description in this section discusses only about the Fort Union formation. Please provide a description of the overlying and underlying water-bearing formations (aquifers) and describe their hydrogeologic characteristics (flow direction, gradients, aquifer properties, general outcrop locations) on a regional context. It is noted that some of the overlying formations may be dry or discontinuous within the mine permit boundary. (MK)

Response Muk 10 – Round 1

Section D6.2.1 has been updated as requested.

Comment Muk 10 – Round 2

No comment received.

Response Muk 10 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment Muk 11 – Round 1

Appendix D6, Section D6.2.1 Regional Hydrogeology, 11. Page D6-12 states, “The overburden is comprised of sand lenses, clinker and alluvial that have the potential of water bearing bodies. Due to the topography in this area, the valley cut through these deposits. Therefore, they are discontinuous and would not hold large quantities of water.” It is noted that they are discontinuous and would not hold large quantities of water. Please provide additional justification for this statement by using the hydrogeologic data collected by the Brook Mine including any reference to the interpreted extent of dry zones based on drill holes, monitor wells and other applicable data. (MK)

Response Muk 11 – Round 1

Section D6.2.1.1 has been updated as requested.

Comment Muk 11 – Round 2

Response not accepted. In addition to a reference to Addendum D5-2, please provide a description/interpretation on the aerial and vertical extent of dry zones. (MK)

Response Muk 11 – Round 2

Discussion of the interpreted dry zones was added to the first paragraph of Section D6.2.1.1 (page D6-14). As discussed, the overburden is primarily dry as indicated by the lithologic logs in Appendix D5. A few boreholes did indicate the presence of water in the overburden; however, water was generally located in the shallow alluvium/colluvium material or in burn areas. These boreholes were generally located near streams or supporting tributaries throughout the permit area and adjacent areas.

Comment Muk 12 – Round 1

Appendix D6, Section D6.2.1 Regional Hydrogeology, 12. Please clarify if there were groundwater springs or seeps observed in the areas within or adjacent to the mine permit boundary. Include a discussion (or reference) on the surface water - groundwater interactions.(MK)

Response Muk 12 – Round 1

Section D6.2.2.5 has been updated as requested.

Comment Muk 12 – Round 2

No comment received.

Response Muk 12 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment Muk 13 – Round 1

Appendix D6, Section D6.2.2.1 Monitor Well Construction, Completion and Development, 13. Page D6-13 states, “No monitoring wells were completed in the overburden or interburden as no water was found in these units during drilling operations”. This information is critical in demonstrating the overlying units are dry. Therefore, for better documentation, please provide (or reference) a map with all the drill holes (both overburden and interburden) and their depths that were used to make this determination. (MK)

Response Muk 13 – Round 1

Section D6.2.2.1 has been updated as requested.

Comment Muk 13 – Round 2

No comment received.

Response Muk 13 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment Muk 14 – Round 1

Appendix D6, Section D6.2.2.1 Monitor Well Construction, Completion and Development, 14. Page D6-13 states, “Also one well 578409-MST-UB showed the presence of water in the underburden, while all the other wells drilled into the underburden were dry and therefore not completed as wells.” Similar to the previous comment, this information is critical in demonstrating the underlying units are dry. Therefore, for better documentation, please provide (or reference) a map with all the drill holes (underburden) and their depths that were used to make this determination. (MK)

Response Muk 14 – Round 1

Please see response to Muk 13.

Comment Muk 14 – Round 2

No comment received.

Response Muk 14 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment Muk 15 – Round 1

Appendix D6, Section D6.2.2.2 Aquifer Tests, 15. Page D6-15 states, “Alluvial materials were also not analyzed during the aquifer testing.” The alluvial aquifer materials are one of the key factors in determining any impacts caused by mining to the alluvial aquifer. Alluvial aquifer tests will be helpful in understanding any surface water – groundwater interactions. Please provide justification for not conducting any aquifer tests in the alluvial wells. (MK)

Response Muk 15 – Round 1

The text in Section D6.2.2.2 has been updated.

Comment Muk 15 – Round 2

Response not accepted. The updated text just notes that there were three alluvial wells completed in Slater Creek. The original comment remains to be addressed. (MK)

Response Muk 15 – Round 2

A short discussion was added to the second paragraph of Section D6.2.2.2 after the context of the response to Comment MuK 16. The discussion explains that aquifer tests weren’t conducted in the alluvial wells because of the confining claystone intervals between colluvial/alluvial material and the differences in potentiometric head between the Carney coal and the colluvial/alluvial material. Therefore, it can be surmised that the confining intervals will provide a suitable barrier between the mining activities and the colluvium/alluvium, not necessitating aquifer tests in the alluvial aquifer.

Comment Muk 16 – Round 1

Appendix D6, Section D6.2.2.2 Aquifer Tests, 16. Please provide justification for not observing the groundwater level responses in the alluvial aquifer during the two aquifer tests conducted by Brook mine. (MK)

Response Muk 16 – Round 1

No alluvial material was present in immediate vicinity of the clusters used for the pumping tests, hence there was no alluvial aquifer to monitor. Hidden Water Creek located to the east of the tested well cluster would be potentially the nearest location of alluvial material. However, as noted in Appendix D11, the fill material in Hidden Water Creek is more colluvial than alluvial.

In addition, as shown on the well completion summary logs in Addendum D6-7, multiple claystone intervals are located between the Carney Coal and the surface at the well cluster where the pumping tests were conducted. The top of the Carney Coal is approximately 90 feet below ground surface at the cluster well location which is approximately 50 feet below the level of any colluvial/alluvial deposits in Hidden Water

Creek. Similarly, the potentiometric head in the Carney coal is some 50 feet below the level of the colluvial/alluvial deposits in Hidden Water Creek and if there were a direct hydraulic connection, there would be no water in the Hidden Water Creek colluvium/alluvium. Given the confining intervals between and the significant difference in potentiometric head between the Carney Coal and the Hidden Water Creek colluvium/alluvium, additional shallow monitoring above the Carney Coal was not necessary.

Comment Muk 16 – Round 2

Response conditionally accepted. Please incorporate the response into the permit application. (MK)

Response Muk 16 – Round 2

The context of the response was added to the second paragraph of Section D6.2.2.2.

Comment Muk 17 – Round 1

Appendix D6, Section D6.2.2.2 Aquifer Tests, 17. Page D6-16 states, “A report of these tests can be found in Addendum D6-8 and summary tabulation of the aquifer test results is included in Table D6.2.2”. Please consider including a comparison of these estimated aquifer properties with the aquifer tests conducted in other similar coal seams in the Powder River Basin (Example: Bighorn Mine). Given the number of tests conducted by the mine, this will increase the robustness of the reported estimates from the two aquifer tests. (MK)

Response Muk 17 – Round 1

As requested aquifer test results from Big Horn Coal Company and from the Youngs Creek Mine were added to the text.

Comment Muk 17 – Round 2

No comment received.

Response Muk 17 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment Muk 18 – Round 1

Appendix D6, Section D6.2.2.2 Aquifer Tests, It is noted that the aquifer tests were conducted for ~640 minutes. Will an increased aquifer test duration change the observed lack of interaction between the coal seams and the underburden? Please clarify with a brief description. (MK)

Response Muk 18 – Round 1

Given the head differences between the static water levels in the Carney Coal, Masters Coal, and the underburden it is unlikely that additional pumping would have resulted in any impacts to the water levels in the underburden. As shown on Table D6-2, (page Addendum D6-8-13) the initial water level in the Carney Coal was approximately 11.5 feet higher than the water level in the Masters Coal and the initial water level in the Masters Coal was approximately 9 feet higher than the initial water level in the underburden well. If there were a hydrologic connection between the aquifers, it is likely that the water levels in the aquifers would have already come into equilibrium.

Comment Muk 18 – Round 2

Response conditionally accepted. Please incorporate the response into the permit application. (MK)

Response Muk 18 – Round 2

The context of the response has been added as the third paragraph of Section D6-8.3.2.3 of Addendum D6-8 “Pumping Test Report.” The context of the response seems to be better suited in the Pumping Test Report than in Section D6.2.2.2 of Appendix D6.

Comment Muk 19 – Round 1

Appendix D6, Section D6.2.2.2 Aquifer Tests, 19. The referenced Addendum D6-8, Table D6-2 shows an increase in water levels in two of the Carney coal seam observation wells during the Masters coal seam well pumping test. Please provide an explanation for this increase in water levels during the aquifer test. (Noordbergum effect?). (MK)

Response Muk 19 – Round 1

Upon review of the raw data collected during the pumping test it was noted that the drawdowns reported in Tables D6-2 and D6-3 were incorrectly reported. Replacement tables are included with this round of comment responses. As shown on the updated version of Table D6-2, the water level in both Carney observation wells (CRN-1 and CRN-OB) increased by 0.23 feet during the Masters coal pumping test. While the Noordbergum effect or other natural phenomena such as earth tides could have potentially influenced the water levels in adjacent aquifers during the pumping test, the increase in water levels can be largely attributed to barometric pressure changes. Water levels in the Carney observation wells were monitored using hand held electric lines and there were no adjustments for barometric pressure reported in Table D6-2. No site specific barometric data was collected during the pumping test period. However, to evaluate how barometric pressure changes may have impacted water levels in the wells, barometric data from the automatic weather observing station (AWOS) at the Sheridan County airport was obtained from the National Oceanic and

Atmospheric Administration (NOAA) database. Barometric data from the Sheridan County Airport AWOS site was compared to water level measurements in Attachment D6-8-K. The data in Attachment D6-8-K demonstrates a clear correlation between barometric pressure and water level variations in the Carney coal monitor wells during the Masters coal pumping test. Generally over the course of the Masters coal pumping test the barometric pressure went down (roughly 0.31 feet). A decrease in the barometric pressure is expected to result in an increase in water levels in a confined aquifer like the Carney coal aquifer which is what was observed.

Similar increases in water levels were also noted in the Masters Coal observation wells (MST-1 and MST-OB) during the Carney pumping test as noted on Table D6-3. Attachment D6-8-K demonstrates a clear correlation between decreasing barometric pressure and rising water levels in the Masters coal observation wells during the Carney Pumping test. In addition, during the Carney coal pumping test, water levels in the Masters coal observation wells were still recovering from drawdowns induced during the Masters coal pumping test which may also have contributed to rising water levels in the Masters coal. The increase in water level measured in the Masters coal observation wells is attributed to a combination of continuing water level recovery and barometric effects.

Only very minor water level variations in the Masters underburden well (MST-UB) were noted during both pumping tests. As shown on the well completion form in Addendum D6-7, (Page D6-7-8) MST-UB was completed in an interval that was predominately claystone and the estimated yield is less than 2 gpm. Essentially the strata in which MST-UB is completed is more of an aquitard than an aquifer. As a result, it takes a lot longer for the water levels in the well to adjust to changing atmospheric pressure because water does not enter or discharge from the formation very fast. The lack of barometric responses in the MST-UB are attributed to the fact that the low yielding aquitard in which the well is completed has a lower barometric efficiency than the wells completed in the coal aquifers.

Vented transducers utilized to monitor water levels in the both the pumping and adjacent monitor wells during each pumping test, automatically compensated for the barometric pressure effects. Therefore, barometric pressure effects did not affect the aquifer analyses that were developed based on the pumping test data.

Comment Muk 19 – Round 2

Response conditionally accepted. Please incorporate the response into the permit application. (MK)

Response Muk 19 – Round 2

The context of the response has been added to Section D6-8.3.2.3 of Addendum D6-8 “Pumping Test Report.” The context of the response seemed to be better suited within the Pumping Test Report than Section D6.2.2.2 of Appendix D6.

Comment Muk 20 – Round 1

Appendix D6, Section D6.2.2.2 Aquifer Tests, 20. Please provide a discussion (or reference) on the role of faults in the results of aquifer tests. (MK)

Response Muk 20 – Round 1

As noted in Addendum D6-8, (page D6-8-9) no hydrologic boundary conditions were observed in the pumping test data. As can be seen on Exhibit D6.2-2, the 578409 well cluster is located approximately 2,100 feet south and east of the nearest mapped fault. Since neither the Carney nor the Masters coal seams are very robust aquifers and have low transmissivity values, it is not surprising that the fault would not influence the pumping test results. For example, using Theis drawdown equations and the aquifer characteristics measured in the Masters coal (transmissivity of 3.2 ft²/day, storativity of 0.00025, and a pumping rate of 0.5 gpm) it is estimated that it would take over 70 days of continuous pumping for a water level response greater than 0.5ft to be observed 2,000 feet away. Therefore the likelihood that the faults would have influenced the pumping test results is very low.

Comment Muk 20 – Round 2

Response conditionally accepted. Please incorporate the response into the permit application. (MK)

Response Muk 20 – Round 2

The context of the response has been added to Section D6-8.4 of Addendum D6-8 “Pumping Test Report.” This seemed like a more appropriate location for the context of the response than within Section D6.2.2.2 of Appendix D6.

Comment Muk 21 – Round 1

Appendix D6, Section D6.2.2.4 Premining Potentiometric Surface, 21. Please provide some additional discussion on the premining potentiometric surface maps, including ranges of estimated hydraulic gradients and groundwater velocity in the different coal seams/aquifers. (MK)

Response Muk 21 – Round 1

As requested, additional discussion on the hydraulic gradients and groundwater velocity in the coal seams were added to Section D6.2.2.4.

Comment Muk 21 – Round 2

Response not accepted. The revised text states, “Groundwater gradients are low ranging from approximately 2 – 4 ft/year in the Masters Coal and 1 to 2.5 ft/year in the Carney Coal.” Please correct the sentence to reflect velocities. (MK)

Response Muk 21 – Round 2

The text in Section D6.2.2.4, second paragraph was revised to correctly refer to 2 to 4 ft/year and 1 to 2.5 ft/ year as velocities rather than gradients.

Comment Muk 22 – Round 1

Appendix D6, Section D6.2.2.4 Premining Potentiometric Surface, 22. Please provide a discussion (or reference) on the hydrologic effects of any adjacent operations (including past coal mining activity by historic mines and Bighorn mine) on the premining information and data. (MK)

Response Muk 22 – Round 1

The last paragraph in Section D6.2.2.4 describes how CBNG production has affected water levels in the eastern side of the permit area. The drawdowns resulting from CBNG production have occurred since any historic coal mining activity and have superseded any drawdowns that may have occurred due to historic mining. Therefore, no lingering hydrologic effects from past coal mining activities are present. The text in the last paragraph in Section D6.2.2.4 has been updated to describe how CBNG impacts have superseded any impacts from historic coal mining activities.

Comment Muk 22 – Round 2

No comment received.

Response Muk 22 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment Muk 23 – Round 1

Appendix D6, Section D6.2.2.5 Recharge and Discharge Areas, 23. This section provides a good discussion on the recharge areas. However, please clarify if there are any discharges from the coal seams within the permit boundary. (MK)

Response Muk 23 – Round 1

Within the permit boundary there are no discharges from the coal seams with the possible exception of the Carney coal on the far west side of the permit area. As shown on Exhibit D6.2-3, the Carney coal outcrops in the far western side of the permit area along the ridge tops but has been eroded away in the stream valleys. As a result, the Carney coal is perched with no real source of recharge and is generally dry. However, on the down dip side of the outcrop the coal may discharge within the permit if there is water in the coal seam to discharge. As shown on Figures MP-3-4.7-1 and MP-3-4.7-2 it was determined during the groundwater modeling efforts that

most of the Carney coal within the far western side of the permit area was dry. Therefore, there is minimal (if any) discharge from the Carney coal within the permit area. Section D6.2.2.5 has been updated to clarify where discharges from coal seams may occur within the permit boundary.

Comment Muk 23 – Round 2

No comment received.

Response Muk 23 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment Muk 24 – Round 1

Appendix D6, Section D6.2.2.5 Recharge and Discharge Areas, 24. Please provide a range of estimates for recharge from precipitation to the aquifers within the permit boundary. Also, provide a discussion if this is the primary recharge mechanism for the aquifers within the permit boundary. (MK)

Response Muk 24 – Round 1

The estimated recharge rates from precipitation are summarized in Section 4.2.2 of Addendum MP-3. Addendum MP-3 describes recharge within the permit area in more detail than Section D6.2.2.5. A reference to MP-3 was added in Section D6.2.2.5.

Comment Muk 24 – Round 2

No comment received.

Response Muk 24 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment Muk 25 – Round 1

Appendix D6, Section D6.2.2.5 Recharge and Discharge Areas, 25. Consider providing a description of the soil properties within the permit boundary and the use of these percent soil distributions in the discussion of infiltration within the permit boundary. (MK)

Response Muk 25 – Round 1

The soil properties within the permit boundary are described in detail within Appendix D7. While different soil types are expected to have variable infiltration rates, the only infiltration rate that is significant for the coal aquifers is the infiltration rate assigned

to the strata near the outcrop of the coal seams. Throughout the permit area the strata overlying the coal aquifer are generally dry. Therefore the primary source of recharge occurs at the outcrops. Scoria, in particular, plays a significant role in recharge of the coal seams because it usually occurs near the coal outcrop. Because of its highly permeable characteristics most of the precipitation that falls on the scoria infiltrates into the scoria where it either infiltrates into the coal or discharges along a seep line at the base of the scoria. As noted in the response to BJ Kristiansen's comment number 57, ash material between the base of the scoria and the coal seams sometimes limits how much of the water in the scoria actually comes into direct contact with the coal. Nevertheless, because a large percentage of precipitation falling on the scoria actually infiltrates into it, the scoria does provide a consistent water source for recharge into the coal outcrops. As noted in Addendum MP-3 Section 4.2.2 the scoria areas were delineated and assigned their own recharge zone because they do play a significant role in recharging the coal seams. Within the permit area, there are several locations where the coal seams outcrop as well. These outcrop areas were also assigned their own recharge zone because they also have a hydrologic connection to the coals. Since the strata overlying the coal seams to be mined in the Brook Mine are generally dry, the recharge component from the overburden to the coal is very low away from the outcrop areas. Because of the limited hydrologic interaction between the recharge at the surface and the coal in areas away from the outcrop, site specific changes in the recharge rates based on soil type will not impact the coal aquifers. For this reason additional analysis of the infiltration properties of the soils within the permit area represents a level of detail that is not necessary to describe the hydrologic impacts to the coal aquifers from the proposed mining operations.

Comment Muk 25 – Round 2

Response conditionally accepted. Please incorporate the response into the permit application to document the justification for not including additional analysis on infiltration. (MK)

Response Muk 25 – Round 2

The context of the response has been added as the second paragraph of Section D6.2.2.5 of Appendix D6.

Comment Muk 26 – Round 1

Appendix D6, Section D6.2.2.5 Recharge and Discharge Areas, 26. Page D6-18 states, "Collected groundwater elevation and hydrographs of the groundwater wells are found in Addendum D6-8". Please revise this statement to reference the correct addendum - Addendum D6-9. (MK)

Response Muk 26 – Round 1

The text has been updated to read "Collected groundwater elevation and hydrographs of the groundwater wells are found in Addendum D6-9".

Comment Muk 26 – Round 2

No comment received.

Response Muk 26 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment Muk 27 – Round 1

Appendix D6, Section D6.2.3 Baseline Water Quality, 27. Page D6-20 states, "A piper diagram of the groundwater wells with measured values is presented in Figure D6.2-1. Please provide a discussion on the water quality types observed at each aquifer (Example: Is the water quality type variable within an aquifer? If yes, explain the potential reasons for this observed variability) based on the piper diagram. (MK)

Response Muk 27 – Round 1

Section D6.2.3 has been updated as requested.

Comment Muk 27 – Round 2

No comment received.

Response Muk 27 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment Muk 28 – Round 1

Appendix D6, Section D6.2.3 Baseline Water Quality, 28. Page D6-20 states, "The constituents that most frequently exceed the standard concentration limitations are ammonia, TDS, sulfate and manganese". Please clarify if these constituents exceed the Chapter 8 standards at all the monitor wells. (MK)

Response Muk 28 – Round 1

Please refer to the Tables D6.2-8 thru D6.2-17 for exceedances of water quality based on Chapter 8 standards. Based on the tables, the concentrations are not exceeded at all monitor wells. No text edits were made in response to this comment.

Comment Muk 28 – Round 2

No comment received.

Response Muk 28 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment Muk 29 – Round 1

Appendix D6, Section D6.2.4 Groundwater Rights, 29. Page D6-20 states, “Adjacent and on-site groundwater rights are listed in Appendix E2 in the Adjudication Volume.” Cheyenne copy of the TFN does not have a sheet separator and a tab for Appendix E2 in the Adjudication volume. Please provide a sheet separator and tab for Appendix E2. (MK)

Response Muk 29 – Round 1

Refer to Comment DM3. Groundwater rights are provided in Appendix B of the Adjudication Volume. This text edit has been made in Section D6.2.4.

Comment Muk 29 – Round 2

Response not accepted. The response indicates Appendix B and the updated text indicated Appendix B2. Please clarify if that is Appendix B or Appendix B2. (MK)

Response Muk 29 – Round 2

The text in Section D6.2.4 was corrected to reference Appendix B as opposed to Appendix B2.

Comment Muk 30 – Round 1

Appendix D6, Section D6.2.4 Groundwater Rights, 30. Page D6-20 states, “Adjacent and on-site groundwater rights are listed in Appendix E2 in the Adjudication Volume.” Please provide a summary discussion/statistics on (i) total number of water rights, (ii) number of wells, (iii) aquifer, (iv) permitted water use and other relevant summary statistics. (MK)

Response Muk 30 – Round 1

Groundwater rights are listed in Appendix B of the Adjudication Volume. All of the aforementioned information is listed for each water right. Due to the constantly changing nature of water rights, a summary table is difficult to construct, and due to summary statistics not being required by WDEQ regulation, a summary statistics table has not been prepared.

Comment Muk 30 – Round 2

Response not accepted. It is acknowledged and noted that water rights vary with time. The intent of this comment is to request a summary of the raw data on the water rights presented in Appendix B, which is a snapshot in time before the approval of the proposed operations. It will enable the reviewers to get a clear understanding of the existing groundwater water uses and if there is a significant dependence on the affected aquifers. In addition, it is very useful information for the CHIA to provide a summary on the groundwater hydrologic concerns within the impact area. Please summarize (i) total number of water rights, (ii) number of wells (iii) wells grouped by aquifer and (iv) permitted water use. Example: Sum the total number of wells, provide a description on the percent of different types of uses. (MK)

Response Muk 30 – Round 2

A summary table (Table D6.2-18) has been added to Appendix D6. Text referencing this table has been added to Section D6.2.4, as well as text referencing discussion of impacted wells found in Addendum MP-3. Table D6.2-18 summarizes the total number wells not including cancelled, expired, abandoned, or suspended water rights. The table lists the permitted water use, the number of wells for each permitted water use, and the percent of total for each permitted use category. The table does not group the wells by aquifer. With nearly 500 wells being reported, the research required to determine the aquifer that each well is completed in would be exhaustive and, ultimately, not possible. Additionally, upon review of several of these water rights, one will note that most water rights have poor completion information. Water rights have either no lithology or have lithology that is so nondescript that a specific aquifer cannot be determined.

Comment Muk 31 – Round 1

Appendix D6, Section D6.2.4 Groundwater Rights, 31. Please provide a discussion (or reference) on the premine groundwater use (including the uses reported to SEO) within the permit boundary and the adjacent areas. (MK)

Response Muk 31 – Round 1

The premine groundwater uses as reported to the SEO within the permit boundary and the adjacent 3 miles are listed with each individual water right in Appendix B of the Adjudication Volume.

Comment Muk 31 – Round 2

Response not accepted. In addition to the reference to Appendix B, please include a textual description and summary of the premine groundwater use within the permit boundary and adjacent areas. (MK)

Response Muk 31 – Round 2

The text in Section D6.2.4 has been changed to include a discussion listing the predominant water uses in permit area and the adjacent 3-mile buffer. The text references the newly created Table D6.2-18 for a groundwater use summary.

Appendix D7

Comment DS 6 – Round 1

Appendix D7, Exhibit D7.3.-1 was compared with Exhibit MP.1-1. As required, it appears that the soil sampling was concentrated in areas where surface disturbance is to be expected. Please provide the contour interval on the soils map. For ease of review and to prevent misinterpretation, however, the map showing sampling locations should also clearly show the locations of proposed surface disturbances instead of providing these details on separate maps which may or may not present differing scale distances.

Response DS 6 – Round 1

The disturbance boundary can be found on Figure D7.1-1 and as the reviewer noted on Exhibit MP.1-1. No revision to exhibit D7.3-1 has occurred in response to this comment.

Comment DS 6 – Round 2

Response is not adequate. Please show the proposed surface disturbance locations on Exhibit D7.3.-1.

Response DS 6 – Round 2

Please refer to Comment DS 22 of the Mine Plan. Soil polygons have been added to Exhibit MP.4-2 integrating the disturbance boundary with the associated soil polygons. No revision to Exhibit D7.3-1 has occurred in response to this comment.

The reasoning behind this is to separate Mine Plan disturbance from baseline studies. It is RAMACO's opinion that baseline studies should only show those conditions prior to RAMACO's proposed operations. Additionally, when future revisions to the Mine Plan are potentially made, references to the Mine Plan in baseline studies could inadvertently be missed causing mistakes in the permit. However, RAMACO is open to showing baseline information within the Mine Plan for an easier evaluation of topsoil types stripped within the topsoil stripping areas.

Comment DS 7 – Round 1

Appendix D7, Page D7-4. The second paragraph of this page contains text that should be deleted. It states "If for whatever reason overall sampling intensity.....was determined to not be enough, it is proposed that any additional sampling be deferred

and included a stipulation of a future pre-stripping soil assessment program.” The Mine Plan and Reclamation Plan soils handling and replacement is contingent on adequate baseline sampling of the proposed area that will be affected by mining operations (topsoil balance and stockpile location planning and bond calculation). Therefore, baseline sampling for soils must be adequate prior to approval of any permit application. Please remove the inappropriate language from the Appendix D7 text. If future changes to the Mine Plan require additional soil sampling the issue will be addressed at that time.

Response DS 7 – Round 1

As requested, the second sentence of the second paragraph on page D7-4 has been deleted.

Comment DS 7 – Round 2

No comment received.

Response DS 7 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment DS 8 – Round 1

Appendix D7, Page D7-9. Text appears in this section that upon NRCS declaration of prime farmlands occurring in the permit area, a letter will be provided to the DEQ. A letter from the NRCS has been received and inserted in the permit declaring no prime farmlands to exist. The text, therefore, is not appropriate and should be removed.

Response DS 8 – Round 1

As requested, the sentence about prime farmland (the last sentence of the first full paragraph on page D7-9) has been deleted. A new reference, citing the letter received on October 31, 2015 (negative determination of prime farmland on Ramaco permit area) has been inserted on page D7-9 and the new reference has been added to the list of references on page D7-33.

Comment DS 8 – Round 2

No comment received.

Response DS 8 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment DS 9 – Round 1

Appendix D7, WS § 35-11-415(b)(iii) and the Coal Rules, Chapter 4, Section (c)(ix) state that if topsoil is virtually nonexistent or is not capable of sustaining vegetation

then subsoil or a selected spoil material may be used as a topsoil or subsoil supplement. Additionally, due to the proximity of this mine to the Tongue River, a Class 2AB stream, limits for chemical contaminants will be imposed on discharges from the permit. Therefore, for areas where unsuitable or marginal topsoil chemistry is located (e.g. Wibaux channery loam, sample R13), an alternative soil replacement material should be identified and used in reclamation. Such a commitment must also be provided in the Mine Plan and Reclamation Plan to provide evidence that such issues that could affect the condition of reclamation and/or lead to off-site impacts will be addressed.

Response DS 9 – Round 1

No “alternate soil replacement material” is necessary for areas of Wibaux channery loam (Map Unit Wx). The lower soil material below 8 inches of Wibaux (any “C” horizon soil substratum below 8 inches, where existent) was not recommended for salvage and would be grouped with the overburden spoil for placement purposes. This lower material had an excessive volume of hard coarse fragments (>35%) and, based on one of the three Wibaux sample sites (R13), an “unsuitable” EC and SAR value for the 8 to 15 inch depth, EC=12.8 and SAR=17.3. Two new sentences, indicating no soil salvage of Wibaux below 8 inches in depth, has been added to the soils report on page D7-26, one sentence each for Map Unit Wx and Map Unit Wx-RO. Furthermore, the amount of suitable soil available for salvage across the entire proposed disturbance area is not limiting, with a calculated weight-average of 20.2 inches. Therefore, additional “alternate soil replacement material” is not necessary.

Comment DS 9 – Round 2

No comment received.

Response DS 9 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment DS 10 – Round 1

Appendix D7, The description of Map Unit G (Bauxson Loam, sample R-19) does not show marginal selenium that occurs between 22 – 48 inch depth range which could affect the salvage depth and may require special handling of the marginally suitable subsoil.

Response DS 10 – Round 1

Two new sentences have been added to the last paragraph on page D7-21 stating the presence of “marginal” rated Selenium values for lower material of Bauxson loam (Map Unit G) sample site R19. Strictly speaking, “marginal” rated soil material is not “unsuitable” and does not need to be specially handled. This lower Bauxson material has been recommended for salvage as “Subsoil”, not “Topsoil”.

Comment DS 10 – Round 2

No comment received.

Response DS 10 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment DS 31 – Round 2 (New Comment)

Section D7-2, Page D7-3 – A quotation and reference related to Schellinger, 2014, must be removed from the permit document as must all other quotations not supported by LQD documentation.

Response DS 31 – Round 2 (New Comment)

This quotation and reference is supported by LQD documentation. Please refer to Exhibit D7.2-1 of Appendix D7 which is a memorandum authored by David Schellinger, Soils Specialist on June 14, 2014. The quotation on page D7-3 accurately represents the sentence in the memorandum. Therefore, the quotation and reference remain in Appendix D7 as evidence for the extent of soil sampling in the Brook Mine permit area.

Appendix D8

Comment JJ 1 – Round 1

Appendix D8, 1. Please update the permit boundaries so that they are the same on Exhibit D8. 2-1 and Addendum D8 Map 1. I note specifically that lands should not be included within the permit boundary south of the interstate and that Section 10 TWN57N RNG85W displays different boundaries along the far west edge of the permit; it appears that the section lines are skewed between the two maps. The Addendum D8 Map 1 also is missing a sizeable amount of lands located in Section 21 TWN54N RNG84W which are included within the permit boundary of the Adjudication Exhibit 1 map. While comparing the maps I find that the maps display the same information in slightly different formats, please explain the necessity for two individual maps and at a minimum make them consistent against one another.

Response JJ 1 – Round 1

Baseline vegetation assessment maps have been updated to include the correct permit boundary. The discrepancy in the permit boundary is attributed to the difference in graphical representation between a USGS quad system and a PLSS system. The USGS quad system is now depicted. Exhibit D8.2-1 is a summary map for this Appendix and future updates made to this Appendix. This map will change throughout the life of the mine as future changes are incorporated. Addendum D8 Map 1 is for this Addendum and will not change throughout the life of the mine.

Comment JJ 1 – Round 2

The response is acceptable. The DEQ now understands the two separate maps and the boundaries now match.

Response JJ 1 – Round 2

Round 1 response is adequate. No response is necessary.

Comment JJ 2 – Round 1

Appendix D8, 2. Why does the study area not include all lands within the proposed permit boundary?

Response JJ 2 – Round 1

Portions of the proposed Brook Mine permit area not included within the study area were added during an October 2014 permit boundary change following completion of the baseline vegetation study. Additional studies were not conducted in these areas due to the limited size and similarity to areas within the study area. Section D8-1.1, page D8-1-5 text has been updated to explain the exclusion of these areas.

Comment JJ 2 – Round 2

The DEQ rules and regulations require vegetative characterization and baseline data for the entire permit area. Therefore, the lands located in Section 21, 22, and 15 that had not been previously included in the 2013 vegetation study area will require further attention. Please contact the DEQ to discuss the required baseline vegetation surveys. Due to the nature of the missing baseline vegetation data more comments may occur once all the data is submitted and applicable tables are updated.

Response JJ 2 – Round 2

The lands that are located in Sections 21, 22, and 15 that were not previously sampled in 2013 were sampled during 2015 quantitative baseline vegetation fieldwork. The data gathered for the areas in the above listed sections will be summarized for the WDEQ when the vegetation report is completed. The study area also needs to be updated on both Exhibit D8.2-1 and Addendum D8 Map 1, and will be provided to WDEQ in a supplemental submittal.

Comment JJ 3 – Round 1

Appendix D8, 3. The acreage displayed on Table D8.2-1 should equal that of the land permitted on the Form 11. The Form 11 displays 4,548.8 acres while the table shows 4,581.7 acres a difference of 32.9 acres. Please update either the Form 11 or Table D8.2-1 to show the true permit acreage as it relates to the vegetation communities. Upon further review I find that Table D8-2 located on page Addendum D8-1-41

exhibits the proper acreages in relation to the Form 11, thus the values represented there may be more accurately displayed in Table D8.2-1.

Response JJ 3 – Round 1

Total acreage of the permit area is 4,548.8 acres as illustrated in Form 11 and Table D8-2. Table D8.2-1 has been updated to reflect the correct acreage.

Comment JJ 3 – Round 2

The response is acceptable.

Response JJ 3 – Round 2

Round 1 response is adequate. No response is necessary.

Comment JJ 4 – Round 1

Appendix D8, 4. Table D8.2-1 states there are 56 acres of agricultural lands; however, I am unable to locate Agricultural lands north of the interstate. Please, discuss and edit the values to display true acreages in relation to the proposed permit boundary. (See comment 3 for more clarification and another table for utilization to update values.)

Response JJ 4 – Round 1

Agricultural Lands within the permit area total 4.5 acres and are located in Section 21 TWN54N RNG84W. Table D8.2-1 has been updated to reflect the correct acreage of Agricultural Lands and other vegetation communities within the permit boundary.

Comment JJ 4 – Round 2

The response is acceptable.

Response JJ 4 – Round 2

Round 1 response is adequate. No response is necessary.

Comment SP 3 – Round 1

Appendix D-8 Vegetation Baseline, Page D8-3. Section D8.1.7. Guideline 2 is a non coal guideline. Please revise this sentence to reference the equation shown in Section D8-1.2.9 Sample Adequacy.

Response SP 3 – Round 1

Changed as requested. Additionally, Appendix D8 reference to Guideline 2 was replaced by reference for Chapter 2 in Section D8.1.1, page D8-1 and Section D8.3, page D8-4. Addendum D8 reference to Guideline 2 was replaced by reference for

Chapter 2 in Section D8-1.2, page D8-1-5 and Section D8-1.9, page D8-1-38.
Reference to Guideline 2 was removed from Section D8-1.2.9, page D8-1-12.

Comment SP 3 – Round 2

No comment received.

Response SP 3 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment SP 4 – Round 1

Appendix D-8 Vegetation Baseline, Page D8-4. Section D8.1.8. Please revise the second sentence to, “The EXREFA is all of the unaffected area for each native vegetation community.”

Response SP 4 – Round 1

Changed as requested.

Comment SP 4 – Round 2

No comment received.

Response SP 4 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment SP 5 – Round 1

Appendix D-8 Vegetation Baseline, Page D8-1-8. Section D8-1.2.4. The last sentence in this section states that no sample locations occurred within the Brook Mine Permit Area. AG-13, 14, 17 and 25 are shown on Addendum: D8, Map 1 inside the permit area. Please correct this statement or the permit boundary on the Map.

Response SP 5 – Round 1

Baseline vegetation assessment maps have been updated to include correct permit boundary which illustrates AG-13, 14, 17, and 25 are not located within the permit boundary.

Comment SP 5 – Round 2

No comment received.

Response SP 5 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment SP 6 – Round 1

Appendix D-8 Vegetation Baseline, Page D8-1-11. Section D8-1.2.8. The last sentence of the first paragraph should be revised to, “Sample adequacy was not required for species diversity and composition.”

Response SP 6 – Round 1

Changed as requested.

Comment SP 6 – Round 2

No comment received.

Response SP 6 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Appendix D9

Comment DM 4 – Round 1

Appendix D9-Wildlife, Page D9-3 states that when a sage grouse confirmation letter is provided by WG&F, it will be provided to DEQ. It appears that the confirmation letter is already part of the package (Page D9-E3). Please reference the location of the letter.

Response DM 4 – Round 1

Page D9-3 was revised to reference Page D9-E3 as the location of the letter.

Comment DM 4 – Round 2

No comment received.

Response DM 4 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment WGF 1 – Round 1

(Appendix D9), We recommend this report become part of the annual reporting which will ensue throughout the operation of the mine.

Response WGF 1 – Round 1

Discussion was added at the end of Addendum D9-1 Section D9-1.6 on Page Addendum D9-1-31 titled “Monitoring and Mitigation” that references the sections of the Mine Plan where the annual wildlife report commitments are contained.

Comment WGF 1 – Round 2

No comment received.

Response WGF 1 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment WGF 2 – Round 1

(Appendix D9), We suggest coordinating with the USFWS regarding raptor mitigation as needed through the mining process.

Response WGF 2 – Round 1

The commitments to coordinate with the USFWS regarding raptors as well as T&E and other species of federal concern are provided in Section MP.18, Addendum MP-8 and Addendum MP-9 of the Mine Plan. Discussion was added at the end of Addendum D9-1 Section D9-1.6 on Page Addendum D9-1-31 titled “Monitoring and Mitigation” that references these discussions.

Comment WGF 2 – Round 2

No comment received.

Response WGF 2 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment WGF 3 – Round 1

(Appendix D9), We recommend mining reclamation practices consider providing suitable habitat for existing wildlife within the specifications required by DEQ-LQD.

Response WGF 3 – Round 1

The commitments to reclaim wildlife habitats are provided in the Reclamation Plan in Section RP.7 Wildlife Restoration. Discussion was added at the end of Addendum D9 - 1 Section D9-1.6 on Page Addendum D9-1-31 titled “Monitoring and Mitigation” that references the Reclamation Plan.

Comment WGF 3 – Round 2

No comment received.

Response WGF 3 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Appendix D10

Comment BJ 63 – Round 1

EXHIBITS, Addendum D10, The permit boundary layer on all of the exhibits covering the aquatic resource boundaries is incorrect. Please correct the permit boundary layers.

Response BJ 63 – Round 1

Aquatic resource inventory maps have been updated to include the correct permit boundary.

Comment BJ 63 – Round 2

No comment received.

Response BJ 63 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment DM 5 – Round 1

Appendix D10-Wetlands, D10-1.4 – Please include a copy of the letter requesting concurrence and jurisdictional determination sent to the ACOE At the end of the text, and reference the letter in the text.

Response DM 5 – Round 1

BKS Environmental Associates, Inc., on behalf of RAMACO, requested concurrence and jurisdictional determination from the USACE on May 29, 2015. A copy of the letter sent to the USACE has been included as Attachment D10-F. Section D10-4, page D10-10 text has been updated to reflect submittal of USACE request.

Comment DM 5 – Round 2

No comment received.

Response DM 5 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 45 – Round 1

Appendix D10-Wetlands, Section D10.2 Results, 19. The text may want to state when (what date) RAMACO requested the jurisdictional determination from the USACE, and include this request letter as an Addendum to Appendix D10. This would provide documentation that the request was submitted, as receipt of the USACE determination may lag behind the LQD permitting process. (MDK)

Response MK 45 – Round 1

See response to DM5.

Comment MK 45 – Round 2

No comment received.

Response MK 45 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Appendix D11

Comment BJ 26 – Round 1

Appendix D11, Alluvial Valley Floor, Section D11.1, RAMACO has requested LQD to make a determination on the nature of the drainages as potential AVF within the permit boundary as well as within ½ mile of the permit boundary. This would then entail analysis of the following drainages (distances are approximations): • Hidden water Creek – all (4 mi.)

- East Fork Earley Creek – lower 1 mile
- Slater Creek – lower 3 miles
- Tongue River – ½ mi. east of Interstate 90 and 4 mi. west of Interstate 90 at the Acme exit.

Prior to such a declaration, LQD staff will have to perform a variety of assessments designed to assist us in making a declarative statement about AVF classification. An AVF declaration will be made after in-depth study of the drainages. Such investigation will consist of, but not be limited to:

1. Field evaluation of the geomorphic and lithologic character of the drainages in question;
2. Determination of the agricultural characteristics of the stream course;
3. Examination of available bore hole logs that can be used to characterize the subsurface materials beneath the valley floor;
4. Determination of groundwater and surface water characteristics, both quantitative and qualitative, within the drainages in question;
5. Other evaluation processes that may be deemed necessary should initial findings warrant further, in-depth analyses.

Response BJ 26 – Round 1

Revised D11 text throughout to expand discussion on the drainages mentioned above. Incorporated previous AVF studies into Appendix D11. Information satisfying each statement can be found in the following locations as well as many other locations throughout the document:

1. Borehole logs provided in Addendum D11-3. Hidden Water Creek test pits dug by Big Horn Mine and discussed in Section D11.3 “Stream Laid Deposits.”
2. Agricultural characteristics of the stream courses are discussed in Sections D11.4.2, D11.4.3, and D11.5, in particular.
3. Bore hole logs are provided in Addendum D11-3. Additional test pit and borehole information was analyzed from the Big Horn Mine Permit No. 213.
4. Groundwater and surface water characteristics are discussed extensively in Appendix D6. Potential impacts to surface water and groundwater are discussed in the Mine Plan. The water resources are generally discussed in Section D11.4.
5. Additional research has been incorporated from the Big Horn Mine Permit No. 213. Corrections and reevaluations of the AVF study have been made throughout Appendix D11.

Comment BJ 26 – Round 2

The response to the Round 1 comment is adequate. The original comment from round 1 was intended to create dialogue between Brook Mine Brook Mine and LQD:

- a) The first goal was to engender further discussion in the permit document covering baseline information regarding the nature of all potential AVFs within the permit boundary. The Round 1 Response effectively established a starting point for both LQD and Brook Mine.
- b) Now that there is a common foundation for all parties, field analysis and data studies can be initiated. This work needs to be scheduled.
- c) Brook Mine must provide written surface owner consent enabling LQD staff access to all acreages covered in the AVF determination analysis. This includes lands defined in Round 1, BJ comment 26, itemized stream lengths by stream name and distance.

Response BJ 26 – Round 2

A field analysis and data study of the potential AVFs within the permit boundary and adjacent areas was scheduled for September 24, 2015. RAMACO has provided LQD personnel with written surface owner consent enabling LQD staff to access acreages covered in the AVF determination analysis. No edits to the text were made in response to this comment.

Comment BJ 27 – Round 1

Appendix D11, Alluvial Valley Floor, Addendum D11-3, Some of the borehole and well logs indicate a damp or wet interval encountered during drilling. Was an attempt made to allow wet materials to produce water prior to continuation of the hole or was water noted after adding another drill steel and lowering the kelly to begin the next 20 feet of hole? Typically, after the steel has been added and the compressor is engaged, a small amount of water can be air-lifted before the rotary table begins to turn. If so, are there field notes indicating water was observed during the connection?

Response BJ 27 – Round 1

It is standard procedure during drilling operations to provide wet or damp intervals an opportunity to produce water. If the intervals had produced water, this would have been noted in the drilling logs provided in Addendum D11-3. There are no other separate field notes that would provide additional information. No changes to the text were made.

Comment BJ 27 – Round 2

No comment received.

Response BJ 27 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 1 – Round 1

Appendix D11-AVF, Section D11.1 Introduction, 1. In the second paragraph on Page D11-1, the possible impacts of the proposed mining operation on the Tongue River AVF are dismissed because the area is planned for facilities level disturbance only. However, the groundwater model (Mine Plan Addendum MP-3) predicts drawdown in the Tongue River alluvium, thereby possibly affecting the AVF. As discussed in subsequent comments, additional analysis and monitoring is needed to comply with LQD Coal Rules and Regulations regarding AVFs. (MDK)

Response MK 1 – Round 1

Revised text to reference Mine Plan Section MP.6 concerning the Brook Mine's effect on the Tongue River AVF.

Comment MK 1 – Round 2

Response not accepted. Mine Plan Section MP.6 does not explicitly mention or discuss the Tongue River AVF, or AVFs in general. Please provide a more thorough discussion in MP.6 on the possible effects of mining on the AVFs, particularly the Tongue River AVF with respect to drawdown in the Tongue River alluvium. Please also see the review of the response to Comment MK 21 below. (MDK)

Response MK 1 – Round 2

Discussion of the Tongue River and Goose Creek AVFs and their associated impacts has been added to the Mine Plan in Section MP.25. In addition, a reference to this section was added to Section D11.7 in Appendix D11 and Section MP.6 in the Mine Plan. As discussed in the text, no significant impacts to the alluvial valley floors within and adjacent to the permit area are expected as no mining is planned within these areas. Potential minor impacts that could occur is the insignificant loss of water due to temporary loss of flow from ephemeral tributaries contributing to the Tongue River and Slater Creek.

Comment MK 2 – Round 1

Appendix D11-AVF, Section D11.2 Purpose and Scope, 2. On Page D11-2, please change “Wyoming Reclamation Act” to “Wyoming Environmental Quality Act”. (MDK)

Response MK 2 – Round 1

Revised text to state “Wyoming Environmental Quality Act.”

Comment MK 2 – Round 2

No comment received.

Response MK 2 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 3 – Round 1

Appendix D11-AVF, Section D11.3 Stream Laid Deposits, 3. For identification of unconsolidated stream laid deposits, LQD Guideline No. 9 (AVF) lists two items that may be used to positively identify unconsolidated streamlaid deposits: (1) channel bars, splays, abandoned meanders, modern flood plains, or terraces, and (2) bedload or washload sediment deposited or transported in a nonbedrock channel bottom. Presumably, item (2) would be met at the streams identified within the AVF study area. However, the permit application does not address whether the channels contain geomorphic features from item (1). Please address in the text whether channel bars, splays, abandoned meanders, modern flood plains, or terraces are observed within the streams within the AVF study area. (MDK)

Response MK 3 – Round 1

Revised text to discuss the lack of channel bars, splays, abandoned meanders, modern flood plains, and terraces that qualify for AVFs in the Hidden Water Creek, Slater Creek, East Fork Earley Creek, and Earley Creek valleys.

Comment MK 3 – Round 2

No comment received.

Response MK 3 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 4 – Round 1

Appendix D11-AVF, Section D11.3 Stream Laid Deposits, 4. On Page D11-5, the conclusion that the materials in Hidden Water Creek valley do not meet the definition of unconsolidated streamlaid deposits, is in conflict with the conclusion from the Big Horn Mine Permit. The Big Horn Mine Permit (Appendix D6, Pages D6-151 to D6-158) describes the evaluation of unconsolidated streamlaid deposits on lower Hidden Water Creek. The permit states: “The conclusion verified from the pit observations is that these deposits are unconsolidated and stream laid. Small isolated patches of colluvium or bedrock can be found throughout the alluvial deposits, but these characteristics do not exclude the deposit from being stream laid.” Please evaluate the data and findings from the Big Horn Mine Permit before a conclusion is drawn about the absence of unconsolidated streamlaid deposits on Hidden Water Creek. (MDK)

Response MK 4 – Round 1

Revised text to discuss the findings of the Big Horn Mine from test pits in the Hidden Water Creek valley. Additionally, Exhibit D11.3-1 was revised to show the locations of the Big Horn Mine test pits in Hidden Water Creek in relation to both the Brook Mine permit area and the Big Horn Mine permit area. Added the Big Horn Mine Permit State Decision Document (SDD) 213-T2 to Addendum D11-2.

Comment MK 4 – Round 2

No comment received.

Response MK 4 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 5 – Round 1

Appendix D11-AVF, Section D11.3 Stream Laid Deposits, 5. The Big Horn Mine Permit also describes subirrigation and flood irrigation studies on lower Hidden Water Creek and concludes: “Due to the lack of subirrigation and extremely low potential for flood irrigation, Hidden Water Creek is not an alluvial valley floor.” Although this is in the approved mine permit, it does not appear that an explicit AVF determination for Hidden Water Creek was ever issued by the LQD, and the AVF findings in the SDDs for the Big Horn Mine Permit do not mention Hidden Water Creek. The Brook Mine

Permit application should incorporate these previous AVF studies on Hidden Water Creek into Appendix D11. (MDK)

Response MK 5 – Round 1

See response to comment MK 4. Additionally, while the Big Horn Mine State Decision Documents do not mention Hidden Water Creek, the SDD 213-T2 states that “No other drainages are of significant size or lack the stream laid deposits necessary to be an Alluvial Valley floor within the renewal and/or amendment areas.” Hidden Water Creek is located within the renewal area and was not included within the originally declared AVF area. Although it was not mentioned by name, it has been declared not to be an AVF within the Big Horn Permit Area. This SDD has been added to Addendum D11-2 and discussion added to the text in Section D11.3.

Comment MK 5 – Round 2

No comment received.

Response MK 5 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 6 – Round 1

Appendix D11-AVF, Section D11.4.2 Extent of Subirrigation, 6. On Page D11-6 it is stated the three monitor wells were installed along the thalweg of Slater Creek. The transects in Exhibit D11.3-2 show that two of the wells (578513-AL and 578418-AL) are not along the thalweg but are rather upgradient of the channel. Please revise this description in the text. (MDK)

Response MK 6 – Round 1

Revised text to more accurately state that the monitor wells are along or near the thalweg.

Comment MK 6 – Round 2

No comment received.

Response MK 6 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 7 – Round 1

Appendix D11-AVF, Section D11.4.2 Extent of Subirrigation, 7. It appears that from Exhibit D11.1-1 that subirrigation is occurring on Earley Creek within the AVF study area. Please explain why subirrigation was not mapped on Earley Creek. (MDK)

Response MK 7 – Round 1

Revised Exhibit D11.1-1 to show potentially subirrigated lands on Earley Creek. The text was revised in Section D11.4.2 to reflect that subirrigation potentially occurs along Earley Creek.

Comment MK 7 – Round 2

No comment received.

Response MK 7 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 8 – Round 1

Appendix D11-AVF, Section D11.4.2 Extent of Subirrigation, 8. On Page D11-6, second paragraph, the alluvial/colluvial potentiometric surface is dismissed as a source of subirrigation along Slater Creek. However, the other hydrologic processes responsible for the subirrigation are not identified. Please discuss in the text why subirrigation is occurring along Slater Creek. (MDK)

Response MK 8 – Round 1

Revised text to discuss the presence of burn areas overlying residual coal ash bands that serve as aquacludes which prevent water from entering or escaping the coal below.

Comment MK 8 – Round 2

No comment received.

Response MK 8 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 9 – Round 1

Appendix D11-AVF, Section D11.4.2 Extent of Subirrigation, 9. The cross-sections in Exhibit D11-3-2 would be improved if the active channel and any floodplains or terraces were shown. A description of the materials in the active channel bottom would also help identify unconsolidated streamlaid deposits. (MDK)

Response MK 9 – Round 1

Revised Exhibit D11.3-2 to show the 2-year, 24-hour flood inundation area and the location of the active channel. Data regarding the materials in the active channel bottom are presented in the borehole logs in Addendum D11-3.

Comment MK 9 – Round 2

Response not accepted. The cross-sections were updated as requested but it is not clear if the materials from the borehole logs truly represent the active stream channel, as many of the borehole logs are shown to be tens to hundreds of feet away from the active channel. Please provide a description of the materials in the active channel bottom of both Hidden Water Creek and Slater Creek. (MDK)

Response MK 9 – Round 2

Borehole locations were chosen in areas that would represent the natural extent of the alluvium in the channel and those that could be accessed in order to obtain these boreholes. So while boreholes are located ten to a hundred feet off the natural channel in actuality, these areas are the closest location that could be physically accessed to obtain the boreholes due to the limitations of the drilling equipment. In addition, to ensure the boreholes were drilled in a location that was properly depicting the potential alluvial/colluvial material of the channel, the presence of scoria alluvial/colluvial material was used as an identifier. As exhibited in Addendum D11-3, scoria material was recorded in the majority of borehole logs. Text has been added to Section D11.3 regarding the selection of borehole locations.

Comment MK 10 – Round 1

Exhibit D11.4-1, the extent of irrigated lands shown in Sections 2 and 11 along Slater Creek may not be correct. According to the summary for the Hart Brothers Ditches water right (permit 1317) in the SEO database, the land being irrigated under the water right has decreased to 23 acres:

THIS FACILITY IS MADE UP OF TWO DITCHES. THE WEST DITCH HAVING A POINT OF DIVERSION IN LOT 2 AND THE EAST DITCH HAVING A POINT OF DIVERSION IN THE SENE OF SECTION 3, T57N, R85W. T57N, AND 58N, R85W HAS BEEN DEPENDENTLY RESURVEYED. REQUEST FROM PADLOCK RANCH TO ELIMINATE 67 ACRES AS FOLLOWS: 32 ACRES IN THE SWSW OF SECTION 2 - 30 ACRES IN THE NENW AND 5 ACRES IN THE NWNW OF SECTION 11 ALL IN T57N, R85W, RECEIVED AND GRANTED. REQUEST OF ELIMINATION AND PROOF OF OWNERSHIP FILED IN MISCELLANEOUS NOTICES. ADJUDICATED WITH H.H. WILLIAMS AS APPROPRIATOR. PERMIT RECORD REFLECTS SOURCE AS SLATER CREEK AND WATER STORED IN THE HART BROTHERS RESERVOIR, P60R, XR7825A, HOWEVER CERTIFICATE RECORD REFLECTS .91 CFS FOR THE IRRIGATION OF 64 ACRES. BOC PETITION II 89-4-2 BY PADLOCK RANCH WAS GRANTED TO ISSUE AMENDED CERTIFICATE C77/290A TO REDESCRIBE LANDS WITHOUT CHANGING LAND TOTALS AND TO CHANGE POINT OF DIVERSION FROM THE RECORD POINT IN THE NWNE AND SENE OF SECTION 3, 57N, R85W AND PARTIAL MEANS OF CONVEYANCE FOR 41 ACRES (.59 CFS) TO THE WILLIAMS DITCH, P8710D, C77/289A DIVERTING WATER FROM

SLATER CREEK IN THE SESW OF SECTION 34, T58N, R85W AS RECORDED IN ORDER RECORD BOOK 36, PAGES 385-390 AND RECEIVED ON CD3/578A. THIS LEAVES 23 ACRES STILL IRRIGATED UNDER THIS PERMIT. LANDS SHOWN BELOW AS "AME" AND "ELI" ARE THOSE ORIGINALLY DESCRIBED UNDER THIS DITCH.

Please clarify the irrigated acreage status for the Hart Brothers Ditches water right with the SEO and revise Exhibit D11.4-1 accordingly. (MDK)

Response MK 10 – Round 1

Exhibit D11.4-1 was revised to more accurately capture irrigated lands on Slater Creek in Sections 2 and 11 of Township 57 North, Range 85 West.

Comment MK 10 – Round 2

No comment received.

Response MK 10 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 11 – Round 1

Appendix D11-AVF, Section D11.4.4 Water Quality, 11. On Page D11-7, it is not necessary to mention the State of Montana water quality classifications of the Tongue River, as only State of Wyoming classifications and standards would apply. Please remove reference to the Montana standards. (MDK)

Response MK 11 – Round 1

Removed text referencing State of Montana water quality standards.

Comment MK 11 – Round 2

No comment received.

Response MK 11 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 12 – Round 1

Appendix D11-AVF, Section D11.4.5 Agricultural Practices, 12. On Page D11-8, second paragraph, it states that Exhibit D11.1-1 shows that sufficient water supply does not exist for consistent agricultural practices in East Fork Earley Creek. However, Exhibit D11.4.1 shows a point of diversion for Earley Creek Ditch No. 1 and several areas of irrigated lands less than 40 acres in East Fork Earley Creek. As documented in Addendum D11-4, there is an adjudicated water right for irrigation in this location. So there may be sufficient water supply for consistent agricultural

practices. The text needs to further expand on this discussion of East Fork Earley Creek since there is an adjudicated water right for irrigation. (MDK)

Response MK 12 – Round 1

Revised text to include the Earley Creek Ditch No. 1 water right, but explained that subirrigation must not be prevalent in East Fork Earley Creek because no culvert or other conveyance structure is present beneath I-90. If subirrigation was prevalent and without a conveyance structure beneath I-90, substantial amounts of water would back up against the interstate.

Comment MK 12 – Round 2

Response not accepted. Please also add to the text any history available on the Early Creek Ditch No. 1 water right and the irrigation associated with the water right. I looked at several years of aerial imagery and it does not appear that any areas have been irrigated under this water right in recent times. I am able to view what appears to be the headgate and two ditches. It is possible that irrigation was abandoned long ago, which would support the contention that there is not sufficient water supply for consistent agricultural practices. Nonetheless, the water right remains fully adjudicated according to the SEO water rights database, so more discussion of this area is warranted in the text. (MDK)

Response MK 12 – Round 2

Text at the end of the second paragraph of Section D11.5 was added regarding the Earley Creek Ditch No.1. As presented in the text, based on CIR, imagery of the area, vegetation studies and absence of a conveyance structure under Interstate 90, the Earley Creek Ditch No.1 doesn't appear to have been used for irrigation purposes for some time.

Comment MK 13 – Round 1

Appendix D11-AVF, Section D11.4.5 Agricultural Practices, 13. On Page D11-8, last paragraph, it states that the hay meadows along Slater Creek in Sections 2 and 11 are not within the boundaries of subirrigation or natural flood irrigation.

(a) The areas symbolized as irrigated lands in Exhibit D11.4-1 do not necessarily correspond to hay meadows, as the imagery shows hay meadows in the SWNE, SENE, and NESE of Section 11, and the NWSW of Section 12. The hay meadows appear to correspond with the area mapped as "AG" in the Vegetation Map (Exhibit D8.2-1) in Addendum D8.

(b) The irrigated area shown in Exhibit D11.4-1 near the Landen Ditch does overlap with subirrigation mapped in Exhibit D11.1-1.

Please re-evaluate the area of hay meadows along Slater Creek and revise the text accordingly. Comments No. 15 and 16 below also relate to this issue. (MDK)

Response MK 13 – Round 1

The text was revised in Section D11.5 to reflect the presence of limited hay meadows and overlapping of irrigation with subirrigation on the upper reaches of Slater Creek in Sections 2, 3, 11, and 12 of Township 57 North, Range 85 West. Exhibit D11.4-1 was revised to show irrigation in Sections 2, 3, 11, and 12 of Township 57 North, Range 85 West.

Comment MK 13 – Round 2

No comment received.

Response MK 13 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 14 – Round 1

Appendix D11-AVF, Section D11.4.5 Agricultural Practices, On Page D11-8, last paragraph, it states that, besides Hart Bros Ditches, the remaining portion of the Slater Creek valley does not contain SEO water rights. This is not the case as Exhibit D11.4-1 shows Landen Ditch in the NENW of Section 11. This water right (P11695) does not appear in Addendum D11-4. Please revise the text and add this water right to Addendum D11-4. (MDK)

Response MK 14 – Round 1

The text was revised in Section D11.5 to discuss the Landen Ditch water right (P11695). A copy of the Landen Ditch water right was added to Addendum D11-4.

Comment MK 14 – Round 2

No comment received.

Response MK 14 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 15 – Round 1

Appendix D11-AVF, Section D11.4.5 Agricultural Practices, 15. The irrigated acreage for the Landen Ditch water right appears to be 18 acres for one point of use and 22 acres for a second point of use. Please add these areas to Exhibit D11.4-1. (MDK)

Response MK 15 – Round 1

Exhibit D11.4-1 was revised to more accurately reflect irrigated lands in the vicinity of the Landen Ditch.

Comment MK 15 – Round 2

No comment received.

Response MK 15 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 16 – Round 1

Appendix D11-AVF, Section D11.4.5 Agricultural Practices, 16. The Hall Ditch (SEO Permit 5195), mapped in Section 11 of Exhibit D11.4.1, apparently provides irrigation water for hayfields in the NESE of Section 11 (30 acres) and the NWSW of Section 12 (22 acres). This water right does not appear in Addendum D11-4. Please add this water right to the Addendum and add the irrigated acreages to Exhibit D11.4-1. (MDK)

Response MK 16 – Round 1

A copy of the Hall Ditch water right (SEO Permit 5195) was added to Addendum D11-4. Exhibit D11.4-1 was revised to depict irrigated lands in Section 12, Township 57 North, Range 85 West. The text in Section D11.5 was revised to discuss the Hall Ditch water right.

Comment MK 16 – Round 2

No comment received.

Response MK 16 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 17 – Round 1

Appendix D11-AVF, Section D11.6 Extent of Alluvial Valley Floor, 17. Portions of Earley Creek and East Fork Earley Creek are within the AVF study area yet the permit application does not attempt to conclude if these streams contain AVFs. Presumably, the LQD will need to make an AVF finding on these streams. (MDK)

Response MK 17 – Round 1

See response to Comment BJ 26. Additional discussion has been added to aid WDEQ in the AVF findings of East Fork Earley Creek and Earley Creek. Both valleys are upstream of mining activities proposed by RAMACO such that no material damages are expected to either valley.

Comment MK 17 – Round 2

Response not accepted. Additional discussion was added for East Fork Earley Creek, but not Earley Creek. However, it is unclear from Comment BJ 26 if the LQD intends to make an AVF determination for Earley Creek. Additional response to this comment may be needed after checking with other LQD staff on whether or not a determination will be made for Earley Creek. (MDK)

Response MK 17 – Round 2

As discussed with LQD personnel, the majority of Earley Creek is outside of the permit area and ½ mile adjacent study boundary, however a small portion of the creek intersects the ½ mile study boundary in T.57N., R.84W. in the northwest quarter of Section 16 and southwest quarter of Section 9. These portions of land are outside of any planned surface disturbance and groundwater impacts to the area are not expected; therefore, a study of these lands was not included in Appendix D11. Discussion of Earley Creek will remain in Appendix D6. No changes to the D11 text were made in response to this comment.

Comment MK 18 – Round 1

Appendix D11-AVF, Section D11.6 Extent of Alluvial Valley Floor, 18. The first bullet for Slater Creek on Page D11-9 dismisses the positive identification of unconsolidated stream laid deposits because a layer of colluvial material was found over alluvial material. However, as stated in Appendix D5 on Page D5-8 and Page D5-9, sub-rounding of the clinker present in the cuttings suggests water driven deposition of limited extent. Also, as discussed in Comment No. 3, the application did not evaluate unconsolidated streamlaid deposits in a manner that is consistent with identification criteria listed in LQD Guideline No. 9. The application has not provided sufficient evidence that unconsolidated stream laid deposits are not present along Slater Creek. (MDK)

Response MK 18 – Round 1

See response to Comment MK 3. The discussion on the Slater Creek valley has been further expanded to include the absence of unconsolidated stream laid deposits such as channel bars, splays, abandoned meanders, modern flood plains, and terraces that qualify for AVFs. Exhibit D11.3-1 clearly indicates the presence of undifferentiated alluvium and colluvium (Qac) in the Slater Creek valley.

Comment MK 18 – Round 2

No comment received.

Response MK 18 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 19 – Round 1

Appendix D11-AVF, Section D11.6 Extent of Alluvial Valley Floor, 19. The third bullet on Page D11-9 for Slater Creek should be clarified that the width of natural flood irrigation in the valley is generally insufficient to provide for economic agricultural practices. However, economic agricultural practices clearly occur immediately upstream of the proposed mine permit boundary because of artificial flood irrigation of hayfields adjacent to the channel. These practices are documented by existing water rights that are approximately 100 years old. Please revise this discussion. (MDK)

Response MK 19 – Round 1

The text in Section D11.6 of Slater Creek's third bullet was revised to include the irrigated hayfield upstream of the permit boundary.

Comment MK 19 – Round 2

No comment received.

Response MK 19 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 20 – Round 1

Appendix D11-AVF, Section D11.6 Extent of Alluvial Valley Floor, 20. The fifth bullet for Hidden Water Creek on Page D11-9 seems to dismiss the positive identification of unconsolidated stream laid deposits because of colluvial material with shallow bedrock. However, as previously noted, this conflict with information in the Big Horn Mine permit concerning unconsolidated stream laid deposits on Hidden Water Creek. (MDK)

Response MK 20 – Round 1

Refer to response of Comment MK 4. The Big Horn Mine permit boundary has been added to Exhibit D11.1-1. The text in Section D11.6 has been updated to include a summary of the discussion stating that the Big Horn Coal Permit No. 213-T2 SDD determined the limits of the AVF, and no portion of Hidden Water Creek was determined as being AVF.

Comment MK 20 – Round 2

No comment received.

Response MK 20 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 21 – Round 1

Appendix D11-AVF, Section D11.7 Mining of Alluvial Valley Floor, Although the LQD has not yet issued its formal finding, the segment of the Tongue River adjacent to the proposed permit area, which was not declared under previous LQD findings, likely contains an AVF.

(a) If this AVF is significant to farming, the applicant must comply with LQD Coal Rules and Regulations Chapter 3, Section 2(d)(ii) and demonstrate that the proposed mining operations will not materially damage the quantity and quality of water that supplies the Tongue River AVF. The absence of direct mining on the Tongue River AVF does not relieve the requirement of assessing the probable hydrologic impacts of the proposed operation to the AVF, particularly since the groundwater model in Mine Plan Addendum MP-3 predicts drawdown in the Tongue River alluvium. (MDK)

(b) Regardless of the significance to farming, the applicant must also maintain and/or restore the essential hydrologic functions of the Tongue River AVF. The applicant must therefore identify the essential hydrologic functions of the Tongue River AVF and either (1) provide an analysis that the proposed operation will not hamper the essential hydrologic functions, or (2) demonstrate that the essential hydrologic functions will be restored. The essential hydrologic functions for another part of the Tongue River AVF are described in the Big Horn Mine Permit SDD (shown in Brook Mine Appendix D11 on Page Addendum D11-2-27), so this may be a good starting point to consider. (MDK)

(c) A monitoring system is also required to demonstrate the essential hydrologic functions are maintained, as per LQD Coal Rules and Regulations, Chapter 5, Section 3(b)(ii). Since the groundwater model (Mine Plan Addendum MP-3) predicts 2.5 feet of drawdown in the Tongue River alluvium, the monitoring system may likely contain alluvial monitoring wells and periodic evaluation of color-infrared imagery. (MDK)

Response MK 21 – Round 1

Revised text as requested. Revised text by adding information regarding the essential hydrologic functions of the declared AVFs (Tongue River and Goose Creek) from the SDD in Addendum D11-2. Also, added portion of text to describe possible monitoring system and plan for the AVFs that may be affected.

Comment MK 21 – Round 2

Response not accepted. Please see the review of the response to Comment MK 1. Please provide a more specific reference to the section of the Mine Plan (MP.6) that discusses the probable hydrologic impacts to the Tongue River and Goose Creek AVFs.

Please also provide a more specific reference to the appropriate portion of the Mine Plan or Reclamation Plan that provides further details on the AVF monitoring plan. (MDK)

Response MK 21 – Round 2

See comment MK 1-Round 2 response. Discussion of the AVF monitoring plan for the Tongue River has been added to the Mine Plan in Section MP.25 as well as the Reclamation Plan in Section RP.10. In addition, monitoring locations have been updated on Table MP.7-4, Exhibit MP.7-1 and Exhibit RP.8-5.

Comment MK 22 – Round 1

Appendix D11-AVF, Section D11.7 Mining of Alluvial Valley Floor, 22. The essential hydrologic functions of the adjacent Goose Creek AVF must also be maintained during the proposed mining operation. The application needs to list these functions, as described in the Big Horn Mine Permit SDD (shown in Brook Mine Appendix D11 on Page Addendum D11-2-27). A monitoring system is also required to demonstrate that the essential hydrologic functions will be maintained. (MDK).

Response MK 22 – Round 1

See response to comment MK 21.

Comment MK 22 – Round 2

Response not accepted. The essential hydrologic functions of the Goose Creek AVF are listed, but the text does not explicitly address a monitoring system for the Goose Creek AVF, only the Tongue River AVF. Please commit to a similar monitoring system for the Goose Creek AVF to demonstrate that the essential hydrologic functions will be maintained. The text should also reference the appropriate portion of the Mine Plan or Reclamation Plan that provides further details on the AVF monitoring plan. (MDK)

Response MK 22 – Round 2

See comment MK 1-Round 2 response. Discussion of the AVF monitoring plan for Goose Creek has been added to the Mine Plan in Section MP.25 as well as the Reclamation Plan in Section RP.10. In addition, monitoring locations have been updated on Table MP.7-4, Exhibit MP.7-1 and Exhibit RP.8-5.

Comment MK 104 – Round 2 (New Comment)

The permit application suggests that the Tongue River and Goose Creek contain AVFs. Appendix D-11 must therefore also include a discussion of the importance of these AVFs to farming, as discussed in LQD Guideline No. 9 (see Part IV, Section C). (MDK)

Response MK 104 – Round 2 (New Comment)

Text in Section D11.5 has been revised to discuss the importance of AVFs to farming.

Comment MK 105 – Round 2 (New Comment)

Appendix D-11 (or perhaps Mine Plan MP.6) should also include a discussion of whether the proposed operation would interrupt, discontinue, or preclude agriculture use of the Tongue River and Goose Creek AVFs. This discussion should evaluate if the predicted drawdown in the Tongue River alluvium (Mine Plan Addendum MP-3) would result in any loss of agricultural use of the AVF. (MDK)

Response MK 105 – Round 2 (New Comment)

Text has been added to Mine Plan Section MP.25 to describe how agricultural use of the Tongue River and Goose Creek AVFs will not be precluded.

Mine Plan

Comment BJ 28 – Round 1

Volume 11, Mine Plan, Section MP.1.2.1, pg. MP-4, Tunnel and pillar widths are discussed in general terms. Please approximate a range for the widths, in feet, in the narrative to give context to the discussion.

Response BJ 28 – Round 1

Added text as suggested.

Comment BJ 28 – Round 2

No comment received.

Response BJ 28 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment BJ 29 – Round 1

Volume 11, Mine Plan, The fifth sentence, beginning with "To minimize the amount of exposure..." does not make sense. Please rewrite the sentence for clarity.

Response BJ 29 – Round 1

Added text as suggested.

Comment BJ 29 – Round 2

No comment received.

Response BJ 29 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment BJ 30 – Round 1

Volume 11, Mine Plan, The narrative also references figure MP.1-3 as a general schematic of the highwall mining operation. The figure depicts significant vertical highwalls above the mining operation. The text mentions that the highwalls will be vertical where the Masters and Carney converge but the illustration depicts conditions where the coal seams appear to be separated by a considerable thickness of parting. It is our experience that vertical highwalls in the Powder River Basin are unstable and should be discourage wherever possible. What would the maximum thickness of burden approximate where the vertical highwalls will exist? Please include an average on the schematic as has been done for pit width and bench width.

Response BJ 30 – Round 1

The figure has been updated to include the average depths.

Comment BJ 30 – Round 2

No comment received.

Response BJ 30 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment BJ 31 – Round 1

Volume 11, Mine Plan, Pages MP-3 and MP-4, These pages describe the highwall mining operation in vague generalities. The narrative states that the continuous miner will advance into the working face to a depth of 2,000 feet. The manufacturer's specifications for the ADDCAR system state that the depth of a cut is 1,600 feet. Is this a discrepancy of 400 feet or is there a difference in mining tools and the ADDCAR system comes with multiple depth capacities. Please clarify.

Response BJ 31 – Round 1

Conversations with ADDCAR representatives indicates that they will be able to extend the range of the highwall mining system so cuts up to 2,000 feet can be achieved.

Comment BJ 31 – Round 2

No comment received.

Response BJ 31 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment BJ 32 – Round 1

Volume 11, Mine Plan, A general word of guidance – Ramps are mentioned in the narrative as designed to an 8% grade. The Cat 777 can generally handle this grade

fairly well under most conditions. The Mack Titan trucks, however, may be problematic under certain conditions. Entering the pit on the ramp could be difficult for the Mack trucks with pups if the ramp has been watered to control dust. The overburden materials used for ramp systems are generally silty with a clay matrix and overwatering can create slipping hazards for vehicles. A truck with multiple trailers will have difficulty navigating these conditions. A 6% ramp under these situations is strongly advised.

Response BJ 32 – Round 1

Revised text as suggested.

Comment BJ 32 – Round 2

No comment received.

Response BJ 32 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment BJ 33 – Round 1

Volume 11, Mine Plan, The narrative describes the tunnel width as variable, depending on the cutting head chosen. Please indicate approximate footages of the tunnel widths. For example, Bucyrus and Joy manufacture continuous miners that have heads ranging from 11 to 12 feet in width. A mention of those widths would clarify the narrative. Also the protective coal pillars are described but have no dimensions indicated. The pillar width to tunnel width is crucial so an approximation of the remnant pillars width in feet is required. Please include approximate widths for tunnel and pillar widths.

Response BJ 33 – Round 1

See response to Comment BJ 28. The text has been updated as requested.

Comment BJ 33 – Round 2

No comment received.

Response BJ 33 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment BJ 34 – Round 1

Volume 11, Mine Plan, Section MP.1.2.2, The dozer push method of overburden removal is not adequately described. Though Figure MP.1-4 does depict the dozer push materials to some extent, the overlapping nature of the multiple lift system can be confusing to some. The narrative on page MP-4 is too brief. Please elaborate

further on the dozer push staging and overburden removal. Perhaps an illustration that depicts the dozer removal in stages would be more appropriate. This can be accomplished by creating a series of illustrations rather than only one. Please clarify the methodology.

Response BJ 34 – Round 1

Revised text as requested. Created Figure MP.1-5.

Comment BJ 34 – Round 2

No comment received.

Response BJ 34 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment BJ 35 – Round 1

Volume 11, Mine Plan, Section MP.1.4, Pg. MP-5, The last sentence does not make sense. Please rewrite the sentence.

Response BJ 35 – Round 1

Removed last sentence for clarity.

Comment BJ 35 – Round 2

No comment received.

Response BJ 35 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment BJ 36 – Round 1

Volume 11, Mine Plan, Section MP.4.2.3, Pg. MP-15, The discussion of temporary topsoil stockpiles describes creating a ring ditch around the topsoil pile if there is a potential for water erosion during the 2 week to 6 month life of the pile. Since the climate is unpredictable and subject to rapid changes, temporary topsoil stockpiles (2 weeks to 6 months) will be required to have ring ditches in all cases with no qualifiers. LQD writes more violations concerning inadequate topsoil practices than any other issue. Rewrite the narrative to indicate that all temporary topsoil stockpiles will have a ring-ditch and berm created for piles having a life of 2 weeks or more. Keep in mind that even a short-lived topsoil stockpile could generate a violation if a sudden rainstorm were to erode the soil and waste it on the surrounding terrain. RAMACO may want to allow for this as well

Response BJ 36 – Round 1

Updated text as requested.

Comment BJ 36 – Round 2

No comment received.

Response BJ 36 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment BJ 37 – Round 1

Volume 11, Mine Plan, Section MP.4.3.4, Pg. Mp-17, A swell factor of 16% is being used to convert bank cubic yards to loose cubic yards. The number was generated from information attained from Big Horn Coal (PT213). Where was this information located? Many of the coal mines in the northwestern corner of the Powder River Basin use a swell factor of 13% - 14% since the overburden material is finer grained, with a higher clay content than mines on the eastern margin of the basin. Please cite the use of a 16% swell factor.

Response BJ 37 – Round 1

Revised text as requested. Table MP.4-9 provides typical swell and load factors of materials.

Comment BJ 37 – Round 2

No comment received.

Response BJ 37 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment BJ 38 – Round 1

Volume 11, Mine Plan, Section MP.6.1, Pg. MP-39, The second paragraph discusses surface runoff attenuation during mine years 4 and 5. The peak flow rates for precipitation events will be attenuated by the mining trenches that lie perpendicular to the flow in the local drainages. What flow events are expected to be attenuated by the trenches? Will the 2 year, 10 year, or 100 year events be considered as an average event? Please modify the narrative, in general terms, to define which precipitation event will be used when designing the pit drainage plans.

Response BJ 38 – Round 1

Updated text as requested.

Comment BJ 38 – Round 2

No comment received.

Response BJ 38 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment BJ 39 – Round 1

Volume 11, Mine Plan, Section MP.8, Pg. MP-47, The narrative mentions that potable water will be hauled to the mine and placed in a cistern. Why is a cistern system being considered for potable water instead of a reverse osmosis unit? The local residents use such systems as do the mines. How large of a cistern will be used for water storage? Please modify the narrative to expand on the rationale behind using a cistern.

Response BJ 39 – Round 1

The text has been revised. The final potable water system has not been determined.

Comment BJ 39 – Round 2

No comment received.

Response BJ 39 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment BJ 40 – Round 1

Volume 11, Mine Plan, Section MP.9.9, Pg. MP-52, When pre-dug mud pits are to be used for exploration drilling, the topsoil must be protected from contamination by removal and stockpiling. The pit location must be stripped to the base of the soil with an areal extent that allows the pit materials to be stacked as spoil without encroaching on native surface. Reclamation shall occur in a manner that will best restore the surface to its pre-disturbance condition. These contingencies need to be better described in the narrative. Please modify the text to reflect the aforementioned conditions.

Response BJ 40 – Round 1

Revised text as suggested.

Comment BJ 40 – Round 2

No comment received.

Response BJ 40 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment BJ 41 – Round 1

Volume 11, Mine Plan, Section MP.18, Pg. MP-68, The second paragraph discusses the speed limits that will be set on haulroads to protect wildlife. Approximately what speed limits will be used?

Response BJ 41 – Round 1

Updated text with a 45 MPH Speed Limit.

Comment BJ 41 – Round 2

No comment received.

Response BJ 41 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment BJ 42 – Round 1

Volume 11, Mine Plan, Section MP.20, Pg. MP-69, The brief description of underground mining should state that no "conventional" underground mining will occur. Highwall coal recovery is an underground mining technique, but no personnel work underground. Thus the mining is modified underground mining.

Response BJ 42 – Round 1

Revised text as requested.

Comment BJ 42 – Round 2

No comment received.

Response BJ 42 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment BJ 43 – Round 1

Volume 11, Mine Plan, Section MP.24, Pg. MP-70, The word "Operation" is misspelled in the title (OPERTATION).

Response BJ 43 – Round 1

Revised text as requested.

Comment BJ 43 – Round 2

No comment received.

Response BJ 43 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment BJ 44 – Round 1

Volume 11, Mine Plan, Section MP.25, Pg. MP-71, The second paragraph, third sentence, discusses requiring additional permitting. The word "additional" is misspelled (additdional).

Response BJ 44 – Round 1

Revised text as requested.

Comment BJ 44 – Round 2

No comment received.

Response BJ 44 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment BJ 45 – Round 1

Volume 11, Mine Plan, TABLE MP.1-1, The total disturbance should read 895 acres, not 775. Please correct the table.

Response BJ 45 – Round 1

Revised text as requested.

Comment BJ 45 – Round 2

No comment received.

Response BJ 45 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment BJ 46 – Round 1

Volume 11, Mine Plan, FIGURE MP.1-3, The average width of the pit floor and safety bench have average widths indicated on the drawing. Please insert the average heights of the vertical highwalls in these situations.

Response BJ 46 – Round 1

Revised Figure MP.1-3 requested.

Comment BJ 46 – Round 2

No comment received.

Response BJ 46 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment BJ 47 – Round 1

Volume 11, Mine Plan, FIGURE MP.1-4, The cross section, as drawn, is confusing. It would appear that dozer pushed, loose material significantly exceeds the bank material available in the highwall. The figure is not drawn to scale but a more accurate attempt to represent dirt volumes would be appreciated. Also, the cross section itself does not make sense in the way that operational steps are illustrated. A series of cross sections over time would be much more beneficial to define the appearance of the dozer push. Please modify the figure accordingly. A sample of an idealized schematic is attached. It is volumetrically accurate.

Response BJ 47 – Round 1

Figure MP.1-4 has been updated to add clarity.

Comment BJ 47 – Round 2

No comment received.

Response BJ 47 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment BJ 48 – Round 1

Volume 11, Mine Plan, FIGURE MP.4-3, Pg. MP-F7, What is the narrow, vertical rectangle located in the center of the coal stockpile coming from the stacker?

Response BJ 48 – Round 1

The figure MP.4-3 has been updated to remove the rectangle.

Comment BJ 48 – Round 2

No comment received.

Response BJ 48 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment BJ 49 – Round 1

Volume 11, Mine Plan, Addendum MP-3, Pg. MP-3-2, The introductory paragraph states that the Brook Mine is approximately 6 miles northwest of Sheridan, Wyoming. However, in earlier narrative, the mine is said to be 6 miles south of the Montana border and 8 miles northwest of Sheridan. This passage is found in the Land Use

Appendix D1-1. The distances should be uniform in all instances throughout the narrative.

Response BJ 49 – Round 1

Revised text as requested.

Comment BJ 49 – Round 2

No comment received.

Response BJ 49 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment BJ 50 – Round 1

Volume 11, Mine Plan, Addendum MP-3, Section 2.3, Figures 2.3-1 and 2.3-2 show the potentiometric surfaces for the Carney and Masters coal beds. The contours daylight and appear to be in mid-air over the Slater Creek drainage. Please adjust the contours so they terminate at the outcrop.

Response BJ 50 – Round 1

Revised Figures 2.3-1 and 2.3-2 in Addendum MP-3-17 as requested.

Comment BJ 50 – Round 2

No comment received.

Response BJ 50 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment BJ 51 – Round 1

Volume 11, Mine Plan, Addendum MP-6, Section MP-6.1, Pg. MP-6-3, The second to last paragraph indicates that the depth of the penetration by the continuous miner will be 2,000 feet. Is this an approximation since the listed depth for the ADDCAR device is 1,600 feet. Please clarify the discrepancy.

Response BJ 51 – Round 1

Based on communication with ADDCAR's representative 2,000 ft penetration is achievable. Generally, users of the ADDCAR system encounter increasing depth of cover with greater penetrations requiring wider web pillar between holes. The loss in recovery due to the wider pillars potentially negates any production gain from increased penetration.

Comment BJ 51 – Round 2

No comment received.

Response BJ 51 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment BJ 52 – Round 1

Volume 11, Mine Plan, Addendum MP-6, Section MP-6.1, Pg. MP-6-4, The discussion in this sections centers around the necessity of maintaining a straight, even cutting depth to prevent pillars from being cut too narrow to hold up the roof material and allow subsidence. The 1:1 ratio suggested by NIOSH is acceptable as long as roof strength tests bear up (no pun intended) the use of the general guidelines. A small sample of tests have been run on roof and coal rock intervals and those tests have been reported. LQD requests a narrative placed either in this location of the text or other location of RAMACO's choosing that discusses the strength tests results as it pertains to roof stability. Also, a commitment must be made in the document to sample roof material for strength testing for at least one location in every panel that will mined by the continuous miner prior to mining. Our concern rests with the competence of the overlying lithologies and their possibility for subsidence. This has been a problem in this area for decades and care must applied to characterize roof materials accurately.

A sampling plan to test compressive strength above each coal panel must be submitted prior to permit approval.

Response BJ 52 – Round 1

RAMACO must submit and have an approved MSHA Ground Control Plan that contains the strength test and commitments requested. RAMACO will provide this information when it is received and include it in the Subsidence Control Plan.

Comment BJ 52 – Round 2

No comment received.

Response BJ 52 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment BJ 53 – Round 1

Volume 11, Mine Plan, Addendum MP-6, Please provide the data used as input for the ARMPS-HWM program.

Response BJ 53 – Round 1

The following input values were used in the ARMPS-HWM program: compressive strength of coal - 660 psi, rock density - 162 lbs/ft³, abutment angle of 21°

Comment BJ 53 – Round 2

No comment received.

Response BJ 53 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment BJ 54 – Round 1

Volume 11, Mine Plan, Addendum MP-6, FIGURE MP-6.2-2, The scale of the photograph is too large to adequately depict the zones of surface subsidence from the old underground mines. Please blowup the scale to allow for clear visibility of the subsidence.

Response BJ 54 – Round 1

Cardno selected the larger scale to show that subsidence was limited to a small portion of the deep mine and not visible over other areas of the deep mine due its increased depth of cover. See revised figure in revision to Cardno's Subsidence Report

Comment BJ 54 – Round 2

No comment received.

Response BJ 54 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment BJ 55 – Round 1

Volume 11, Mine Plan, Addendum MP-6, FIGURE MP-6.2-3, This figure is very effective. It clearly shows the subsidence evident on the air photo as it correlates to the old underground map superimposed on it. One problem, though, is that the air photo base needs to be darker, with greater contrast. The photo is a bit washed out and manipulation of the brightness/contrast aspects of the photo would help its visibility greatly. Please recalibrate the photo tonality.

Response BJ 55 – Round 1

See revised figure in revision to Cardno's Subsidence Report

Comment BJ 55 – Round 2

No comment received.

Response BJ 55 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment BJ 56 – Round 1

Volume 11, Mine Plan, Addendum MP-8, Section MP-8.5.4, The last sentence in this section indicates that there is no suitable habitat available for the Northern Long-Eared Bat. Does this include the climax Cottonwood Forest along Tongue River? The well developed understory along the river is suitable for Long-eared bat habitation though none have been located in this area. Or does the negation of the existence of the bat only apply to the area in the hills above the river where the mining will occur. Please clarify the area that was considered for potential Long-Eared Bat occurrence.

Response BJ 56 – Round 1

The text was revised to clarify.

Comment BJ 56 – Round 2

No comment received.

Response BJ 56 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment BJ 64 – Round 1

EXHIBITS, Mine Plan, Exhibit MP.1-1, The patterns used to depict surface disturbance from year to year are too similar. It is difficult to differentiate between year 0 and year 2, for example. Please recreate the surface disturbance layers to be more unique. The overburden removal sequence map (Exhibit MP.4-4) is a good example.

Response BJ 64 – Round 1

Revised Exhibit MP.1-1 as requested.

Comment BJ 64 – Round 2

No comment received.

Response BJ 64 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment BJ 67 – Round 2 (New Comment)

Mine Plan, Table MP.4-5., Overburden Stockpile Design –

The Estimated Capacity volumetrics for the Overburden stockpiles appear to be low. Based on a recalculation of the volumes given the acreage and average heights, each stockpile has a higher volume of capacity than which is shown in the table. A recalculated table would look like this:

Table MP.4-5. Overburden Stockpile Design

Stockpile Designation	Estimated Capacity <u>E</u> (cy)	Approximate Basal Area <u>A</u> (ac)	Average Height <u>H</u> (ft)	Calculated Capacity <u>C</u> (cy) ¹	Difference ²
OB-1	300,000	4.7	55	417,047	117,047
OB-2	500,000	9.4	55	834,093	334,093
OB-3	950,000	13.4	95	1,189,027	239,027
OB-4	1,000,000	21.4	85	1,898,893	898,893
OB-5	730,000	9.2	70	816,347	86,347
OB-6	400,000	8.3	55	736,487	336,487
OB-7	400,000	8.9	70	789,727	389,727
OB-8	1,100,000	14.2	75	1,260,013	160,013
OB-9	510,000	8.7	55	771,980	261,980
OB-10	260,000	5.6	45	496,907	236,907
OB-11	100,000	4.1	50	363,807	263,807
OB-12	1,200,000	14.0	95	1,242,267	42,267
OB-13	165,000	4.2	45	372,680	207,680
OB-14	122,000	5.6	55	496,907	374,907
OB-15	76,000	3.2	30	283,947	207,947
OB-16	104,000	3.6	20	319,440	215,440
	7,917,000			12,289,567	4,372,567

¹Calculated Capacity C = ((A*43560)*H)/27

²Difference = C-E

Based on the Recreated Table, Volumes derived from acreage and average height formulas give values that are approximately 35% too low. Please reevaluate the table in light of the mathematical calculations. Or, if there are extenuating circumstances that help create the overburden volumes in column B, please explain the seeming inconsistency.

Response BJ 67 – Round 2 (New Comment)

The capacities of the overburden stockpiles calculated by WDEQ do not account for the sideslopes of the overburden stockpiles. The calculations are appropriate for rectangular prisms with a uniform rectangular cross section. This explains why the calculations area significantly higher. The reported volumes by RAMACO are outputs from AutoCAD which uses 3D surfaces to construct stockpiles and calculate volumes. AutoCAD also takes into account the variation in a topographical surface that the stockpiles are placed on, which can affect the extent of the basal area and the average height. The volumes of the stockpiles were also rounded up to be conservative in the reported volumes. The average height is only a rough approximation because the height will change considerably depending upon the topographic surface beneath each

pile. No changes have been made to the volumes of overburden. However, Table MP.4-5 has been revised to indicate sideslope angles and that the volumes have been computed using AutoCAD.

Comment DM 6 – Round 1

Mine Plan, MP.3.1.3 – A primary haul road appears to cross the Tongue River using the bridge that is currently in place from previous mine usage. Please discuss any updates needed for that bridge to be adequate for the intended usage.

Response DM 6 – Round 1

The revised primary haul road alignments do not cross this bridge and the use of this bridge for haul trucks and other traffic associated with the mine is not planned. Updated Exhibit MP.3-1.

Comment DM 6 – Round 2

No comment received.

Response DM 6 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment DM 7 – Round 1

Mine Plan, Exhibit MP4-3 shows Overburden Stockpiles OB-12 and OB-13, and Topsoil Stockpile TS-6 being located directly in the Slater Creek channel, without any mention of redirecting Slater Creek, or otherwise preventing the hydrologic consequences of damming up the creek with Overburden and Topsoil stockpiles. Please correct.

Response DM 7 – Round 1

Revised Exhibit MP.4-3 as requested with OB-12 and 13 as well as TS-6 moved out of Slater Creek channel.

Comment DM 7 – Round 2

No comment received.

Response DM 7 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment DM 8 – Round 1

Mine Plan, MP.7 – Because of the proximity of the planned facilities primarily in T57, R84 Sec.15 to the Tongue River and Goose Creek, I would like to see surface water monitoring upstream of these facilities on Goose Creek and Tongue River, and

downstream of these facilities on Tongue River. Please discuss the feasibility of fulfilling this request, with reasoning.

Response DM 8 – Round 1

Revised text as requested. Revise Exhibit MP.7-1 with USGS stream gage location that is within the viewing area.

Comment DM 8 – Round 2

No comment received.

Response DM 8 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment DS 11 – Round 1

Mine Plan, 11) Depending upon the outcome of required overburden sampling, commitment for special handling of unsuitable overburden will be required to assure that placement of unsuitable materials so as not to hinder plant growth or to adversely affect surface or groundwater quality will be required in the Mine Plan.

Response DS 11 – Round 1

See section MP.4.6.1, fourth paragraph.

Comment DS 11 – Round 2

Response is not adequate. Section MP.4.1.6 does not discuss placement of unsuitable materials above groundwater sources which will undoubtedly be encountered in early mining progressions at this mine. Unsuitable materials taken from above the groundwater level cannot be placed within the groundwater zone. Please address this and describe how the mine plan pit sequence of removal and backfill will be altered to accommodate placement of suitable materials near the surface or in the aquifer zone during mining. This may require stockpiling of materials to assure the best quality materials will be used.

Response DS 11 – Round 2

The majority of the permit area is dry. Therefore, most backfill materials will not be placed in an aquifer. Additionally, it is generally accepted that if unsuitable materials are placed below the water table, there will not be cause for concern. If unsuitable materials are placed below the water table, they will not have the opportunity to oxidize. If unsuitable materials are above the water table, they may oxidize, but they won't be transported by groundwater flow. The only zone that could potentially cause concern is the limited area where the potentiometric surface fluctuates. In this way, unsuitable materials can be oxidized and transported by groundwater flow. Due to the overburden and coal seams being primarily dry and the majority of mining activities

occurring above the potentiometric surface, placement of unsuitable materials within an aquifer is not anticipated to be a concern.

Comment DS 12 – Round 1

Mine Plan, 12) Does RAMACO provide a better detailed description of the topsoil salvage and handling process than that discussed in section MP.4.2.1? The description provided is not detailed so as to provide a description of the equipment used, the methods for assuring adequate soil salvage, or whether topsoil and subsoil salvage will follow the recommendations in Appendix D7 for stockpiling topsoil separate from subsoil. (Map Unit A Cambira Loam, Map Unit B Zigweid Loam, Map Unit C Forkwood Loam, Map Unit G Bauxson Loam, Map Unit H Haverdad Loam, Map Unit U Ulm Clay Loam) Please understand that topsoil and subsoil may only be mixed if both meet Guideline 1 suitability criteria. Please include more detail for topsoil salvage and handling or let the LQD know where the information may be accessed.

Response DS 12 – Round 1

Revised text as requested.

Comment DS 12 – Round 2

Response is not adequate. Details of your topsoil salvage operation have not been adequately provided in the Mine Plan. Please provide the requested details of the topsoil salvage operation as stated above.

Response DS 12 – Round 2

The text in Section MP.4.2.1 has been supplemented to describe the topsoil salvage operation in more detail. The text now states that RAMACO will likely salvage topsoil with dozers, loaders, and trucks based on the current plan for equipment purchase. However, planning is still in its infancy and different, though typical, topsoil salvage equipment could be used. Methods to assure accurate salvage were already outlined in Section MP.4.2.1 in the three bulleted steps provided by WDEQ/LQD Guideline 1. However, these were supplemented with examples. Drilling or test pits ahead of salvage will ensure proper topsoil removal. Equipment operators and qualified personnel will be trained to recognize the difference in soil profiles. Additionally, Section MP.4.2.1 now states that RAMACO will generally follow the recommendations of Appendix D7 for the separation of topsoil and subsoil to ensure that unsuitable subsoil will not be mixed with topsoil. However, RAMACO reserves the right to mix topsoil and subsoil, if subsoil is suitable as a plant-growth medium, according to WDEQ/LQD R&R Chapter 4, Section 2(c). For example, Map Unit A, Map Unit B, Map Unit C, Map Unit H, and Map Unit U are all suitable across the entire profile (topsoil and subsoil) and are not required by rules and regulations to be separated. Therefore, RAMACO will not have separate stockpiles for subsoil. If subsoil is suitable, it will be salvaged. If subsoil is not suitable, it will not be salvaged. Any suitable subsoil that is salvaged will be mixed into topsoil stockpiles.

Comment DS 13 – Round 1

Mine Plan, 13) Section MP.4.2.3 all topsoil stockpiles, even those stockpiled temporarily or windrowed at the edge of a disturbance, must be identified by a topsoil sign from initiation of the salvage operation as required under Chapter 4, Section (c)(D) that states that signs must be in place at the time stockpiling is begun. Therefore, the text in the first paragraph of this section stating that signs will not be required must be corrected. Signs will always be required to identify all salvaged topsoil and must be placed on all approaches to the topsoil and no more than 150 feet from the stockpile location.

- a. Additionally, all stockpiled topsoil, even windrowed along the edge of a disturbance, must be protected against wind and runoff erosion, compaction or potentially toxic materials no matter what the longevity designation of the stockpiled material. The Mine Plan must provide a commitment to these requirements.

Response DS 13 – Round 1

Revised text as requested.

Comment DS 13 – Round 2

No comment received.

Response DS 13 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment DS 14 – Round 1

Mine Plan, 14) Section MP.4.2.4(4.2.1?) does not discuss topsoil salvage during winter months. Salvage during the winter months, especially of shallow soil profiles, is discouraged by the LQD due to a lack of depth control caused by varying depths of permafrost. Please provide discussion concerning this subject.

- a. Even short term and temporary topsoil stockpiles must be identified on maps and the volumes accounted for in annual reports. Several criteria that must be considered are well established for placement of topsoil stockpiles and include:
 - i. Construction of stable areas to minimize wind and water erosion
 - ii. Stockpiles will not be placed in areas where runoff water can contribute to the loss of topsoil (side hills or drainages)
 - iii. Stockpiles will not be constructed on unsuitable backfill locations
 - iv. Stockpiles will have associated sediment control established in advance of construction

- v. Stockpiles will not be constructed at locations of known cultural or wildlife resources for which protection or mitigation is required.
- b. Other topsoil stockpile construction and maintenance considerations include:
 - i. Stockpiles will be constructed with slopes of 3h:1v or less
 - ii. Bypass ditches, berms or equivalent may be used to divert runoff around stockpiles
 - iii. Stockpiles that will remain for less than 1 year may be revegetated or treated with surface roughing methods such as ripping or discing to reduce runoff and wind erosion potential.

Response DS 14 – Round 1

Revised text as requested.

Comment DS 14 – Round 2

Section MP.4.2.1 does not discuss topsoil salvage during winter months. Salvage during the winter months, especially of shallow soil profiles, is discouraged by the LQD due to a lack of depth control caused by varying depths of permafrost. Please provide discussion concerning this subject.

a. Even short term and temporary topsoil stockpiles must be identified on maps and the volumes accounted for in annual reports. Several criteria that must be considered are well established for placement of topsoil stockpiles and include:

- iii. Stockpiles will not be constructed on unsuitable backfill locations
- v. Stockpiles will not be constructed at locations of known cultural or wildlife resources for which protection or mitigation is required.

Responses to the above items were not adequate. Please provide the required permit commitments.

Response DS 14 – Round 2

A statement to Section MP.4.2.1 has been added that states RAMACO will not salvage topsoil if high antecedent moisture conditions have led to deep frost cementing topsoil to overburden. Additionally, the statement has been made that RAMACO will salvage topsoil ahead of planned winter mining activities to avoid complications with deep frost.

All currently planned topsoil stockpiles have been identified on Exhibit MP.4-3. A statement has been added to Section MP.4.2.3 in the first paragraph that any accumulations of topsoil that meet the definition of a stockpile will be mapped with

volumes accounted for in the Annual Report. Another statement has been added to the first paragraph of Section MP.4.2.3 that topsoil stockpiles will not be constructed on unsuitable backfill or known locations of cultural or wildlife significance that require protection and mitigation.

Comment DS 15 – Round 1

Mine Plan, 15) Section MP.4.2.7, page MP 4-5. Aside from operation of soil salvage equipment with the potential for soil contamination due to blown hydraulic hoses or small fuel leaks, the LQD expects not contamination of soil during the mining operation. Contamination of subsoil and overburden is more likely. The LQD recommends that RAMACO re-phrase the section header and text to show petroleum contaminated materials being and not soils.

- a. What criteria will RAMACO use to determine if spills require reporting to the DEQ, and what process will be used in spill reporting?
- b. What will the operational procedure be for management of the proposed on-site landfarm for contaminated materials, and where will it be located? Will it be identified on the ground by a sign?

Response DS 15 – Round 1

Revised text as requested.

- a. See Section MP-4.5.2 of Addendum MP-4
- b. See Section MP-4.5.3 of Addendum MP-4

Comment DS 15 – Round 2

No comment received.

Response DS 15 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment DS 16 – Round 1

Mine Plan, Section MP.4.2.8. Please provide a detailed description for the disposal of empty drums, not just a citation of the EPA Rule which is probably not know by most readers of this public document.

Response DS 16 – Round 1

The EPA Code Federal Regulation cited is public information which may be accessed online or at a public library if the reader desires to know the specifics requirements and steps regarding container disposal.

Comment DS 16 – Round 2

Response is not adequate. The Round 1 review comment was not addressed. Please provide the required detail in the drum disposal discussion. The general public may or may not have access to the Federal Register, but must provide a public document which stands alone, without need to reference other documents to provide the information required to explain the commitments made. Therefore, RAMACO must expand on what the EPA Rule requires for the readers of this permit.

Response DS 16 – Round 2

RAMACO has committed to disposing of empty drums according to Title 40 CFR Part 261.7. RAMACO has cited the federal regulation that stipulates the disposal of empty containers. RAMACO will not summarize this federal regulation in the Brook Mine Permit for two reasons:

1. Federal regulations are made public. Any member of the public has access to the Code of Federal Regulations. This regulation was accessed by WWC on the internet, meaning any person with access to the internet can search and find this regulation. If a member of the public does not personally have access to the internet, said person can go to the local public library to obtain access to the internet.
2. The Code of Federal Regulations is a living document that is subject to change at any time. By committing to the stipulations of Title 40 CFR Part 261.7 without summarizing the regulation, RAMACO commits to observing any requirements of the regulation at any time no matter how the regulation might change in the future. If RAMACO summarizes the regulation and the regulation changes in the future contrary to what it originally stipulated, RAMACO will be automatically stating commitments contrary to federal regulation. The possibility of being out of compliance with federal regulation is avoided by simply citing the regulation RAMACO commits to observing.

Addendum MP-4 remains unchanged.

Comment DS 17 – Round 1

Mine Plan, MP.4.3.1 discusses overburden removal processes. However, little detail is given to explain the actual process for overburden handling. Will the first cut be stockpiled and used to fill the last cut? When special handling is required, which is almost certain given the nature of some overburden and the need for some soil replacement materials, what assurance will be made that poor quality materials will be safely located in the backfill or in separate stockpiles, or that topsoil substitutes will be handled and stored as topsoil in a useful manner as required under Chapter 4, Section 2(b)(x)(A)? Please provide a more detailed overburden handling plan. Perhaps some of these details are observed in later sections. Please provide additional details not provided elsewhere.

Response DS 17 – Round 1

See Sections MP.4.3.5, MP.4.6 and MP.4.7. Revised text as requested.

Comment DS 17 – Round 2

No comment received.

Response DS 17 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment DS 18 – Round 1

Mine Plan, Section MP.4.3.4. The volumetric analysis shown in Table MP.4-4 and MP.4-5 may change depending on results of required additional overburden sampling and volumetric analysis. If the overburden depth overlying coal changes as a result of additional sampling, the volumetric analysis will also change. If post mining contour changes are necessary due to adjusted swell factors permit revision will probably not be required until the changed PMT exceeds plus or minus 20 feet of the approved at which time a Reclamation Plan revision will be required. This kind of detail should be included in the permit commitments.

Response DS 18 – Round 1

Revised text as requested.

Comment DS 18 – Round 2

Response is not adequate. Does the volumetrics of stockpiles include the coal partings and heavily oxidized coal seams that will not be mined for sale and have not been included in overburden quality assessment data? Will swell factors be adequate to meet PMT requirements after mining of coal from box cuts? What steps will be taken, such as borrow areas not currently shown on any maps, would be used to mitigate inadequate backfill, keeping in mind that contouring must provide reestablishment of drainage patterns on the mine.

Response DS 18 – Round 2

The volumes of materials required to be placed in stockpiles were calculated from grid files in AutoCAD. The grid files are based on borehole/exploration hole data. These volumes were then increased by 16% (as stated in Section MP.4.3.4) to account for swell. In response to Comment DS 22 – Round 2, the topsoil volumes have been recalculated using the specified depths in Appendix D7 within each soil polygon. In most of these cases, the salvage depth of topsoil was increased from 0.5 feet to nearly 1.5 feet (or whatever the appropriate salvage depth was in the specific area). This significantly increased the volume expected to be placed in topsoil stockpiles. However, that volume that was originally assumed to be overburden that is now in

topsoil stockpiles was not removed from the overburden stockpiles. Therefore, the volumes shown for overburden stockpiles should be slightly high. This will provide for additional storage of coal partings or materials from heavily oxidized coal seams should such volume requirements be necessary. The overestimate of overburden stockpile size is conservative. This simply shows that the mine does have the capability to store all the overburden materials. It is unnecessary to readjust overburden stockpiles to be smaller after topsoil calculations since this material was planned to be placed during reclamation.

As stated in Section MP.4.3.4, the actual swell factors will be monitored. Also stated in Section MP.4.3.4, if the actual swell factors differ significantly from what is approved, the post mining topography will be adjusted. This is standard practice for coal mines, and RAMACO is prepared to meet this obligation. RAMACO cannot be certain what the swell factors will be until after material is excavated, stockpiled, handled, and reclaimed. Once the material is monitored and volumes of swelled material are better known, this data will be reported in the Annual Report, as stated in Section MP.4.3.4.

In reference to the PMT, please refer to the Reclamation Plan. As shown in Exhibit RP.3-1, all drainage patterns were maintained. Any borrow to tie the PMT into the existing ground occurred within the disturbance boundary. Because of the relatively minimal disturbance by the Brook Mine, reclaiming the surface to nearly premining conditions was relatively simple. Again, should the swell factor vary significantly from what is currently assumed, the PMT will be redone to account for this adjustment and should any additional borrow areas be required, the disturbance boundary will be increased.

Comment DS 19 – Round 1

Mine Plan, Section MP.4.6.1. The typical overburden sampling protocol as stated in Guideline 1 calls for one sample taken every 40 square acres of the permit area. Overburden sampling for underground mining operations differs from typical coal mine sampling protocols and is stated in the Coal Rules, Chapter 7, Section 1(a)(i)(A) which calls for overburden sampling and characterization on areas where surface operations will cause removal of overburden down to the level of the coal seam. Please make changes to the text accordingly and perform additional overburden sampling where required.

Response DS 19 – Round 1

Revised text as requested.

Comment DS 19 – Round 2

No comment received.

Response DS 19 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment DS 20 – Round 1

Mine Plan, Section MP.4.3.5. A statement was made in this section that “Overburden stockpiles will only block ephemeral drainages if runoff control and sediment control measures are made and approved by WDEQ/LQD.” Placement of overburden in ephemeral drainages will require a discussion of how water will be diverted around the overburden stockpile to prevent impoundment of water in addition of a discussion of sediment control measures for the stockpile to prevent off-site impacts of erosion down-slope from the stockpile. The LQD recommends that no overburden stockpiles be placed in ephemeral drainages.

Response DS 20 – Round 1

Revised Exhibit MP.4-3.

Comment DS 20 – Round 2

Response is not adequate. No response was provided. Please make necessary changes to the Mine Plan language concerning placement of overburden stockpiles.

Response DS 20 – Round 2

The statement reflects the allowances made by WDEQ/LQD rules and regulations. The statement was not made as a certainty that overburden piles will be placed in ephemeral drainages. Instead, the statement is provided in case overburden piles have to be placed in ephemeral drainages and provides the guidance as to how this will be done according to WDEQ R&R. WDEQ/LQD R&R Chapter 4, Section 2(c)(xi)(B) states:

“Ephemeral drainages may be blocked if environmentally sound methods for dealing with runoff control and sedimentation are approved by the Administrator.”

The Mine Plan currently states in Section MP.4.3.5 in the first paragraph:

“Overburden stockpiles will only block ephemeral drainages if runoff control and sediment control measures are made and approved by WDEQ/LQD.”

“...runoff control and sediment control measures are made and approved by WDEQ/LQD” implies that if an overburden stockpile blocks an ephemeral drainage, discussion and approvals by WDEQ will be made for diverting water, use of ASCMS, prevention of down-slope impacts, etc. before the placement of the stockpile. Because the permit text meets WDEQ/LQD R&R, no changes have been made to the text.

As shown in Exhibit MP.5-1, all of the overburden stockpiles avoid being placed such that they block ephemeral drainages. All ephemeral drainages flow around the

stockpiles. However, the statement remains in the permit should RAMACO be required to block an ephemeral drainage and seeks the permission and approval of WDEQ/LQD, as allowed by WDEQ/LQD R&R Chapter 4, Section 2(c)(xi)(B).

Comment DS 21 – Round 1

Mine Plan, Tables MP.1-1, MP.1-2 and MP.4-1 must show the actual years for proposed progressions, or the year 1 progression must be tied to a specific year in the Mine Plan text.

Response DS 21 – Round 1

Revised tables as requested. Added note saying that Year 0 corresponds to the year 2016.

Comment DS 21 – Round 2

No comment received.

Response DS 21 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment DS 22 – Round 1

Mine Plan, Tables MP.4-3 and MP.4-5. Topsoil volumes appear to be underestimated in TS- 2, TS-6, TS-10 and TS-11 while underestimating the proposed volume in TS-1. Also overburden volumes appear to be underestimated in OB-4, OB-7, OB-11, OB-14 and OB-15, and overestimated in OB-16, which may affect estimates presented in Table MP.4-4 as well.

Response DS 22 – Round 1

Volumes are estimated based on the stripping volumes and available backfill area with excess material going to and from stockpile for contemporaneous reclamation. No updates will occur in response to this comment.

Comment DS 22 – Round 2

Response is not adequate. Several discrepancies have been discovered during the review. TS-1 capacity according to Table MP.4-3 is 89,600 cubic yards, but Table MP.4-1 shows 120,200 cubic yards added to the stockpile. Our estimate are significantly different from yours based on the footprint and average height.

Stockpile	Basal Area (acres)	Average Height (ft)	Volume Estimate (cy)	RAMACO's Volume Estimate (cy)
TS1	1.4	20	22,587	89,600
TS2	3.5	45	127,051	85,100
TS3	1.5	30	36,300	70,300
TS4	1.1	25	22,183	26,600
TS5	3.0	55	133,101	98,400
TS6	4.5	45	163,351	150,800
TS7	0.7	20	11,293	13,800
TS8	0.9	25	18,150	19,300
TS9	0.8	20	12,907	15,900
TS10	2.0	50	80,667	70,300
TS11	0.9	20	14,520	12,000

The volume of topsoil in stockpiles by year presented in Table MP.4-1 appears to be based on a six-inch salvage depth as shown below. Perhaps the salvage depth was intended to be 2 ft. but the volumes would have to increase by a factor of 4.

Stockpile	Acres Salvaged	Volume Salvaged (cy)	Depth (ft) (Volume (cu.ft./Area (sq.ft.))
TS1	80	64,500	0.50
TS1	43	34,700	0.50
TS1	23	18,600	0.50
TS1	13	10,500	0.50
TS1	19	15,300	0.50
TS1	5	4,000	0.50
TS1	9	7,300	0.50

The LQD requires RAMACO to evaluate topsoil stockpile volumes and depths of soil salvage expressed on specific areas of disturbance since each disturbance will undoubtedly result in different salvage and replacement depths.

All volumetric data in tables presented in the Mine Plan and in the reclamation bond estimate must be must be correct, so the LQD requires that:

- a) All topsoil salvage and bond estimates must be based on depth estimates provided in Appendix D7 and the approximate acreage of each soil series disturbed. Therefore, the soil salvage depth and topsoil volumes expressed in table MP.4-3 must be linked to site-specific soil depths. Table MP.4-1 must also include salvage depths for each calculation.
- b) All following topsoil salvage and volumetric tables must be corrected based on volumes for TableMP.4-1.

- c) All reclamation performance bond estimates must be changed to reflect corrected topsoil volumes.
- d) An average depth of topsoil to be salvaged for the entire mining operation must be provided in the Mine Plan text.
- e) Topsoil stockpile footprints and heights will need to be corrected on tables and figures.

Response DS 22 – Round 2

Responses to the list of WDEQ/LQD requests are as follows:

- a) Topsoil salvage estimates were updated to reflect the salvage depths of specific soil types in Appendix D7. To accomplish this, the soil polygons in Appendix D7 Exhibit D7.3-1 were used to create a 3D grid in AutoCAD that represented the salvage depth for each soil type. Volumes were then “removed” within each topsoil stripping area shown in Exhibit MP.4-2. Outputs from AutoCAD included the average cut depth within each topsoil stripping area. The average cut depth essentially reflects the weighted average of cut depths depending on recommended salvage depth of each soil and the areal extent of each soil type within the stripping areas. The average cut depth is now provided in Table MP.4-1. Again, this depth reflects a weighted average and will not match the recommended salvage depths in Appendix D7. To reflect what topsoil types will be salvaged in each stripping area, the soil polygons shown on Exhibit D7.3-1 were added to Exhibit MP.4-2 which already shows the topsoil stripping areas. This exhibit can be compared to Table MP.4-1 for volume calculations.
- b) Table MP.4-1, Table MP.4-2, and Table MP.4-3 were all updated to show the corrected topsoil volumes.
- c) The weighted average of salvage depth is provided in the Mine Plan text in Section MP.4.2.1 in the second paragraph.
- d) The topsoil stockpile footprints and heights have been corrected on Table MP.4-3 to reflect the new volumes. Please note: Stockpile heights are only averages. The stockpile height varies considerably for most stockpiles because of the nature of the topography in the Brook Mine permit area. When AutoCAD builds the 3D stockpiles, the topography is taken into account for the areal extent of the base. Therefore, hand calculations will unlikely replicate the volumes of stockpile by only considering basal area, average height, and typical side slope. To reflect the change in the topsoil stockpile footprints, the disturbance boundary was updated in Exhibits MP.1-1, MP.4-1, MP.4-2, MP.4-3, MP.4-4, MP.4-5, MP.5-1, MP.5-2, and MP.16-1. The hatches that represent the stockpile footprints were updates in Exhibit MP.4-3 and Exhibit MP.5-1.

Comment DS 23 – Round 1

Mine Plan, Exhibit MP.4-2 and MP.4-3 must show the dates (actual years) for the salvage of topsoil and removal of overburden, or year 1 must be tied to an actual year

when operations will begin (2016, 2017, etc.). The map or tables in the Mine Plan must provide proposed years and volumes for stockpile construction as well.

Response DS 23 – Round 1

Revised Exhibits as requested. Added note saying that Year 0 corresponds to the year 2016 on all Exhibits with years.

Comment DS 23 – Round 2

No comment received.

Response DS 23 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment DS 30 – Round 1

Reclamation Plan, All Mine Plan Maps with progressions must show the actual years of the initial disturbance or mining activity, or the progression must be linked to a specific year in Reclamation Plan text. The maps must also include the contour interval.

Response DS 30 – Round 1

Revised Exhibits as requested.

Comment DS 30 – Round 2

No comment received.

Response DS 30 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment DS 32 – Round 2 (New Comment)

The LQD requests that RAMACO provide pit identification number/names for all proposed initial box cut locations which will reduce confusion for identification of incident locations or for descriptions during inspections. (DS)

Response DS 32 – Round 2 (New Comment)

Exhibits MP.1-1, MP.4-1, MP.4-4, MP.5-1, MP.15-1, and MP.15-2 were all updated to include pit identification numbers. The text in Section MP.6.1 was also updated to include pit identification numbers to more conclusively identify pits in the hydrologic consequences discussion.

Comment DE 1 – Round 1

Mine Plan, Figure MP.1.2 and page MP-3 – MSHA and best practices may require a safety berm on this safety bench which could require a wider bench. Figure MP.1.2 notes a minimum of 35' but the text on page MP-3 just states the bench will be 35' wide. There is a real possibility this safety bench might be used for light plants so it may need to be wider for access and small vehicle use as well as providing a safety bench.

Response DE 1 – Round 1

Revised text as requested.

Comment DE 1 – Round 2

No comment received.

Response DE 1 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment DE 2 – Round 1

Mine Plan, Table MP.1-1 – The total disturbance doesn't seem to match the overall disturbance listed for the trench mining and facilities. Please explain or correct.

Response DE 2 – Round 1

Revised table as requested.

Comment DE 2 – Round 2

No comment received.

Response DE 2 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment DE 3 – Round 1

Mine Plan, Section MP.2.3, page MP-9 – The 1st sentence would be better if it started, "The explosive materials...". The 2nd sentence should replace the word "detonating" with "explosive". The 5th sentence in the 2nd paragraph should include cast boosters. The 6th sentence in the 2nd paragraph should discuss storage of emulsions, water gels, and slurries also. This section should also commit to proper signage of the explosive storage area. Please correct.

Response DE 3 – Round 1

Revised text as requested.

Comment DE 3 – Round 2

The third sentence in the 2nd paragraph needs to be corrected. It states one magazine will contain cast boosters and the other magazine will contain detonating cord and boosters. Boosters cannot be stored with detonating cord or detonators. I believe the text should say, "...the other magazine ...will contain detonating cord, detonators and other initiation products. Please correct.

Response DE 3 – Round 2

The third sentence of the second paragraph in Section MP.2.3 was changed as suggested to reflect that boosters will be stored separately from detonating cord, detonators, and other initiation products.

Comment DE 4 – Round 1

Mine Plan, Section MP.5.7.5, page MP-34 – The word "of" in the 2nd line of the last paragraph should be "or". Please correct.

Response DE 4 – Round 1

Revised text as requested.

Comment DE 4 – Round 2

No comment received.

Response DE 4 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment DE 5 – Round 1

Mine Plan, Section MP.6.1, page MP-39 – The 1st sentence of the 1st full paragraph needs some improvement so it reads properly and makes sense. Please correct.

Response DE 5 – Round 1

Revised text as requested.

Comment DE 5 – Round 2

The 1st sentence of the 1st full paragraph still needs to be improved so it makes sense. The current version says "... Hidden Water Creek watershed will occur..." It doesn't make sense as it is written. Please correct.

Response DE 5 – Round 2

The text was corrected in the fourth paragraph of Section MP.6.1 to state:

“In the fourth and fifth years, mining occurs east of the Slater Creek watershed and west of the Hidden Water Creek watershed. Mining will occur primarily in minor drainages of the Tongue River in Sections 8, 17, and 18, T57N, R84W, as seen on Exhibit MP.1-1.”

Comment DE 6 – Round 1

Mine Plan, Section MP.14.2, page MP-55 – The 2nd paragraph discusses the use of “cast primers”. The term should be “cast boosters” as it doesn’t become a primer until the detonator is added or detonating cord is attached to it. The discussion of priming holes should describe the use of a cast booster and how it is made-up to become a primer, i.e. with detonating cord or a detonator (blasting cap). Please correct.

Response DE 6 – Round 1

Revised text as requested.

Comment DE 6 – Round 2

No comment received.

Response DE 6 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment DE 7 – Round 1

Mine Plan, Section MP.14.3.2, page MP-56 – In the 2nd line the item “(primer with detonator)” should be changed to “(cast booster with detonator)”. Please correct

Response DE 7 – Round 1

Revised text as requested.

Comment DE 7 – Round 2

No comment received.

Response DE 7 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment DE 8 – Round 1

Mine Plan, Section MP.14.3.2, page MP-56 – The 2nd paragraph discusses powder factors in coal and overburden and the high end of the ranges is extremely high for the type of rock and coal in this area. RAMACO should eliminate the range and simply state powder factors will be adequate to effectively fragment the overburden and coal.

Response DE 8 – Round 1

Revised text as requested.

Comment DE 8 – Round 2

RAMACO kept the powder factor range of 0.2-0.7 pounds per ton in the text. As stated in the 1st round review the high end of the range is extremely high for coal. I would recommend that the text simply state that the powder factors will be adequate to effectively fragment the coal and overburden. Please correct.

Response DE 8 – Round 2

In Section MP.14.3.2, the powder factor ranges for coal and overburden were removed as suggested. The text now states that the powder factors will be chosen to adequately fragment coal or overburden, depending upon which is being blasted.

Comment DE 9 – Round 1

Mine Plan, Section MP14.3.3, page MP-56 – RAMACO should reword this to say that initiation will be done using non-electric or electric systems, which may include electronic detonators, shock tube detonators, detonating cord, electric detonators or a combination of these. Igniter cord is used to initiate safety fuse and it's highly unlikely that any safety fuse will be used at this mine. Please correct.

Response DE 9 – Round 1

Revised text as requested.

Comment DE 9 – Round 2

No comment received.

Response DE 9 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment DE 10 – Round 1

Mine Plan, Section MP.14.4, pages MP-56 & 57 – It is probable that emulsions will also be stored on site so it should be mentioned since emulsion/ANFO blends are the most widely used product in wet holes. Please correct.

Response DE 10 – Round 1

Revised text as requested.

Comment DE 10 – Round 2

No comment received.

Response DE 10 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment DE 11 – Round 1

Mine Plan, Section MP.14.6, pages MP-57 & 58 – Residents who request a pre-blast survey must make the request to the permittee and the Administrator of Wyoming Land Quality Division (LQD). The permittee is responsible for getting the pre-blast survey done and distributed to the person that requested it and the LQD Administrator. Please correct.

Response DE 11 – Round 1

Revised text as requested.

Comment DE 11 – Round 2

No comment received.

Response DE 11 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment DE 12 – Round 1

Mine Plan, Section MP.14.7, pages MP-58 & 59 – LQD will not approve protecting uninhabited structures (what LQD refers to as engineered structures) at 8.0 inches per second (ips) of peak particle velocity. LQD would allow a maximum limit of 5.0 ips. RAMACO would have to assure that this limit was not exceeded by the use of a seismograph at these structures on all blasts. RAMACO could apply for a modified scale distance factor to show compliance with this limit of 5.0 ips by submitting a vibration study and doing a regression analysis to show the allowable ppv is not exceeded at a 95% confidence level. However, this will require the vibration study be submitted with seismograph records from shots in the mining area so it cannot be done until after some blasting has been done at the mine. Please correct this text.

Response DE 12 – Round 1

Revised text as requested.

Comment DE 12 – Round 2

No comment received.

Response DE 12 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment DE 13 – Round 1

Mine Plan, Section MP.14.8.1, page MP-60 – The discussion on typical pattern size should be changed to more general language. Using the parameters given the powder factor used would be approximately 0.16 lbs./CY using ANFO and in the 0.23-0.25 lbs./CY range when shooting an emulsion blend. These powder factors are not high enough to adequately fragment the overburden. Please correct.

Response DE 13 – Round 1

Revised text as requested.

Comment DE 13 – Round 2

RAMACO continues to discuss a “typical” pattern size and stemming amount. Given the bench height, pattern size, stemming height, hole diameter listed it would be nearly impossible to get powder factors high enough to adequately fragment the overburden. The large burdens and spacings in a 50’ high bench would likely leave hard zones between the holes. The large amount of stemming compared to powder column height gives poor powder distribution in the holes which will likely lead to hard zones in the upper portions of the bench. This discussion needs to be improved.

Response DE 13 – Round 2

The text in Section MP.14.8.1 has been edited to discuss generalities in overburden blast design as opposed to listing the specifics of before. The text now provides more open design standards for RAMACO to function as necessary for safe and efficient blasting during mining operations.

Comment DE 14 – Round 1

Mine Plan, Section MP.14.8.1, page MP-60 – The 2nd paragraph says if water is in the holes a slurry or water gel explosive will be used. Most likely an emulsion/ANFO blend with good water resistance will be used in wet holes and not a slurry or water gel. Please correct.

Response DE 14 – Round 1

Revised text as requested.

Comment DE 14 – Round 2

No comment received.

Response DE 14 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment DE 15 – Round 1

Mine Plan, Section MP.14.8.1, page MP-60 – The 3rd paragraph discusses the explosive weight per hole and the powder factors. The explosive densities listed are correct but the pounds per hole and powder factors are incorrect. In a 7.875” hole and with a density of ANFO of 0.85 g/cc the pounds/foot of hole is 17.95 lbs. and with 24’ of powder column the pounds/hole is 431 lbs., making the powder factor = 0.16 lbs./CY. Similarly using an emulsion blend of 1.32 g/cc the pounds/foot = 27.87 lbs. and the pounds per hole would be 669 lbs. so the powder factor = 0.25 lbs./CY. In the 50’ hole described with 26’ of stemming and 24’ of powder the powder distribution is poor so it would likely lead to blocky material near the top of the bench. Please correct.

Response DE 15 – Round 1

Revised text as requested.

Comment DE 15 – Round 2

No comment received.

Response DE 15 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment DE 16 – Round 1

Mine Plan, Section MP.14.8.2, page MP-61 – Drilling a 35’ x 35’ pattern in a 15’ thick coal seam with a 7.875” hole and 4.5’ of stemming will probably result in excessive flyrock, stemming ejection, high airblast and hard zones between the holes. Expecting to stem 4.5’ is not realistic – in the field the blaster is going to try to hold for 4’ or 5’ of stemming. Again RAMACO discusses using slurry or water gel in wet hole when an emulsion/ANFO blend with high water resistance would probably be used. Please correct. Also the powder factor listed for coal is probably a little high so it would be better to just say that the powder factor will be sufficient to fragment the coal for the prime movers. Please correct.

Response DE 16 – Round 1

Revised text as requested.

Comment DE 16 – Round 2

RAMACO lists a pattern Drilling size of 35’ x 35’ and then in the text states the burden and spacing will 17.4’ and 35.4’. As stated in the round 1 review comments, this pattern size in a 15’ thick coal seam with a 7.875” drill hole will probably result in excessive flyrock, airblast and leave behind hard zones between the holes. The 2nd paragraph discusses using slurry and water gel and it is likely that an emulsion/ANFO

blend with high water resistance would be used. RAMACO needs to revise the text in this section because this plan will not be effective.

Response DE 16 – Round 2

The text in Section MP.14.8.2 has been edited to discuss generalities in coal blast design as opposed to listing the specifics of before. The text now provides more open design standards for RAMACO to function as necessary for safe and efficient blasting during mining operations.

Comment DE 17 – Round 1

Mine Plan, Section MP.14.10, page MP-63 – The last bullet item says that detonation during electric storms might be a reason for unscheduled blasting. This is confusing because it makes it sound like the operator would shoot during electric storms and the only safe thing to do when an electric storm approaches is clear the pattern and keep everyone a safe distance away until the storm passes. Please correct.

Response DE 17 – Round 1

Revised text as requested.

Comment DE 17 – Round 2

No comment received.

Response DE 17 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment DE 18 – Round 1

Mine Plan, Addendum MP-7, Blaster's Log – Under the "Holes" heading RAMACO should use "burden" not the term "burden spacing". On the 2nd page the word "signiture" should be changed to "signature". Please correct.

Response DE 18 – Round 1

Revised text as requested.

Comment DE 18 – Round 2

No comment received.

Response DE 18 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment KM 11 – Round 2 (New Comment)

LQD recommends that sequence maps be revised to include only yearly backfilling and/or replacement, monthly backfilling and/or replacement areas may not be achievable as a permit commitment.

Response KM 11 – Round 2 (New Comment)

RAMACO appreciates the comment and understands the potential difficulty, but the permit remains unchanged.

Comment KM 12 – Round 2 (New Comment)

Exhibit MP.1-1 shows surface disturbance beginning in 2017. However, other maps show disturbance beginning in Year “0”, which according to the maps is Year 2016. Please be consistent.

Response KM 12 – Round 2 (New Comment)

Exhibit MP.1-1 has been corrected to properly show surface disturbance beginning in 2016.

Comment KM 13 – Round 2 (New Comment)

Exhibits MP.4-2 and RP.5-1 use the same symbol for all years of activities; only color designates different years. Some of the color variations denoting years are not easily discernible from the legend to the map.

Response KM 13 – Round 2 (New Comment)

The exhibits have been changed to use different hatch patterns and colors for years to make separate years more easily discernible.

Comment KM 14 – Round 2 (New Comment)

Do the slot openings include truck ramps? How will truck ramps be constructed in each slot?

Response KM 14 – Round 2 (New Comment)

The slot openings will include truck ramps that will be used to remove spoil and coal from the slots to the haul roads. By WDEQ/LQD definition in Chapter 1, Section 2(ds), ramps are not considered roads. As discussed in Section MP.3.1.4, ramps are exempt from mine plan design considerations. The ramps will move and change frequently as mining progresses. To describe a specific way in which the truck ramps will be constructed in each slot would be difficult to accomplish due to the variability in each slot and at each phase of construction of the slot. As Section MP.3.1.4 states, the ramps will be developed with consideration given to the type of equipment

operating on them, safety considerations, and surrounding conditions. Safety berms will be installed on all elevated edges.

Comment KM 15 – Round 2 (New Comment)

Please confirm the volume of the overburden stockpiles. For example, based on LQD's review of the mine plan and the spoil backfilling sequence maps, it appears that OB-3 will be used to contain all overburden removed from the first slot opening.

Response KM 15 – Round 2 (New Comment)

Please see response to Comment BJ 67. WDEQ/LQD calculations did not consider the side slope of overburden stockpiles, therefore overestimating the volume of overburden stockpiles. Overburden stockpile volumes will be constantly changing over the course of mining due to ongoing reclamation activities. The overburden stockpiles have been sized to accept the required volume of spoil from the trenches, but spoil will likely be cycled in and out of the stockpiles on a regular basis to meet backfilling requirements. Volumes to be placed in stockpiles were calculated from 3D grid files in AutoCAD and given a swell of 16% to approximate the required space.

Comment KM 16 – Round 2 (New Comment)

LQD recommends using a swell factor of 11 to 13%, based on our experience in the area.

Response KM 16 – Round 2 (New Comment)

A swell factor of 16% was used as an average approximation. Swell factors of material at other mines in the area have been as high as 20%-22%. After the first pit has been backfilled, a swell study will be conducted and stockpile and PMT design will be reevaluated if necessary. Refer to Section MP.4.3.4 for a discussion that states that actual swell factors will be monitored and PMT will be adjusted if necessary.

Comment KM 19 – Round 2 (New Comment)

Page MP-8 states that the "approved Spill Prevention, Control, and Countermeasure (SPCC) plan will be on file with WDEQ and available at the Brook Mine. Who is responsible for approving the plan? WDEQ does not require a SPCC plan to be filed with the agency. SPCC plans is a federal requirement.

Response KM 19 – Round 2 (New Comment)

The text in Section MP.2.1.4 was edited to correctly state that the SPCC plan will be kept onsite at the mine for review and inspection by the EPA.

Comment KM 20 – Round 2 (New Comment)

Page MP-8 states that the leachfield(s) will accept water from the change house and equipment service shop. Discharge of industrial wastewater from the equipment service shop into a leachfield may be subject to Chapter 16, Wyoming Water Quality Rules and Regulations.

Response KM 20 – Round 2 (New Comment)

Section MP.2.1.6 states that sewage wastewater from the change house and equipment service shop will be discharged into the leach field. The section does not mention disposal of industrial wastewater into a leach field. However, a statement was added that the septic tank and leach field will be constructed in accordance with WDEQ/WQD rules and regulations.

Comment KM 21 – Round 2 (New Comment)

Page MP-8 states that wash down water will be sent to a wastewater impoundment. However Section MP5.2 (page MP-26) state that no wastewater impoundments are currently planned for the Brook Mine. Please discuss.

Response KM 21 – Round 2 (New Comment)

The statement made in Section MP.5.2 that no wastewater impoundments are currently planned was revised to state that designs for a wastewater impoundment are provided in Addendum MP-2. A wastewater impoundment will be required to treat wash down water.

Comment KM 22 – Round 2 (New Comment)

Groundwater from dewatering pumps is to be pumped to sumps or NPDES treatment for use in road dust control. What kind of “NPDES” treatment is proposed?

Response KM 22 – Round 2 (New Comment)

The third paragraph of Section MP.5.9 states that the treatment facilities will be sedimentation ponds.

Comment KM 23 – Round 2 (New Comment)

The State of Wyoming has primacy for the National Pollutant Discharge Elimination System and issues permits under the Wyoming Pollutant Discharge Elimination System (WYPDES). Please change all references to NPDES to WYPDES to accurately reflect the current regulatory situation.

Response KM 23 – Round 2 (New Comment)

The reference in the third paragraph of Section MP.5.9 to NPDES was removed. A statement was added that all water is intended to be used, and discharge from the permit area is not anticipated.

Comment MK 23 – Round 1

Mine Plan, Section MP.20 Alluvial Valley Floors, The discussion of underground mining in AVFs does not seem necessary given there is no plans for underground mining at the Brook Mine. Furthermore, it is conceivable that circumstances could exist where underground mining of an AVF would not be allowed by the LQD. For example, if the AVF was significant to farming and underground mining of the AVF would result in surface effects such that material damage to the AVF would occur. (MDK)

Response MK 23 – Round 1

While no underground mining is proposed within delineated AVFs, the mine maintains this option. If underground mining is ever planned under the AVF, the appropriate revisions will be made. Revised text as requested.

Comment MK 23 – Round 2

No comment received.

Response MK 23 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 46 – Round 1

Mine Plan, Section MP.4.1 Mining Sequence, 20. On Exhibit MP.4-1, please attempt to show the areas that would be highwall mined versus surface mined. These layers are currently not found until Exhibit MP.15-1. Alternatively, the text in this Section could specify that the areas to be highwall versus surface mined are shown in Exhibit MP.15-1. (MDK)

Response MK 46 – Round 1

Revised text as requested.

Comment MK 46 – Round 2

No comment received.

Response MK 46 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 47 – Round 1

Mine Plan, Section MP.5.1 Surface Drainage and Erosion Plan, 21. Only Slater Creek and Hidden Water Creek are labeled and shown in Exhibit MP.5-1. In order to better evaluate the Hydrologic Control Plan, please provide labels and locations for the other stream channels, including Tongue River, Goose Creek, East Fork Earley Creek, and the other unnamed channels (as shown on the USGS 24K Quad) on the proposed permit area. (MDK)

Response MK 47 – Round 1

Revised Exhibit MP.5-1 as requested.

Comment MK 47 – Round 2

No comment received.

Response MK 47 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 48 – Round 1

Mine Plan, Section MP.5.1 Surface Drainage and Erosion Plan, 22. Exhibit MP.5-1 shows overburden stockpiles OB-13 and OB-12, as well as topsoil stockpile TS-6, occurring directly over the Slater Creek channel. The Exhibit does not show any diversion ditches to be used in these locations. Please either move the location of the stockpiles or present a plan to use a diversion to route Slater Creek around the stockpiles. (MDK)

Response MK 48 – Round 1

Revised Exhibit MP.5-1 as requested.

Comment MK 48 – Round 2

No comment received.

Response MK 48 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 49 – Round 1

Mine Plan, Section MP.5.2 Sedimentation and Wastewater Impoundments, 23. Exhibit MP.5-1 shows the locations of two “sediment basins”. Are these considered the same as “sedimentation impoundments”, as discussed in this Section? If so, the designs for these two impoundments are not found within the Mine Plan. (MDK)

Response MK 49 – Round 1

The “sediment basins” shown in Exhibit MP.5-1 are not considered the same as the “sediment impoundments (reservoirs).” Sediment Basins are considered an Alternative Sediment Control Measure and are discussed in Addendum MP-1. As such, the design for these “sediment basins” are not included in the Mine Plan. However, the design criteria and construction standards for “sediment basins” are similar to those discussed within Section MP.5.2 of the Mine Plan. Revised text as requested.

Comment MK 49 – Round 2

Response accepted. The text states that there are no currently planned sedimentation impoundments planned at the Brook Mine. Please see new Mine Plan and Reclamation Plan comments below that request this clarification elsewhere in the permit. (MDK)

Response MK 49 – Round 2

The statement in Section MP.5.2 was revised to state that sedimentation and wastewater reservoirs will be required for mining operations. The designs of these impoundments are provided in Addendum MP-2. Exhibit MP.5-1 has been revised to show the locations of these impoundments. The disturbance boundary has also been adjusted to encompass the impoundments. Permit-level designs have only been provided for impoundments that are planned to be needed in the first five years of operations. Any potential impoundments required after the first five years will be provided once these impoundments are within five years of ensuing operations. Due to the fact that sedimentation, wastewater, and flood control reservoirs will be required, the text changes referenced in Comments MK 106, 108, 109, 110, 111, 112, 113, and 114 (New Comments) were not made. The responses to these comments reflect that.

Sedimentation reservoirs have been designed to replace the ASCMs originally shown within one half of a mile of the Tongue River and Goose Creek to satisfy the requirements set forth in Guideline 15 (as discussed in Comment MK 116 (New Comment)).

Comment MK 50 – Round 1

Mine Plan, Section MP.5.3 Flood Control, 24. This section discusses flood control reservoirs but it is not mentioned how many flood control reservoirs would be constructed and where their locations would be. Please provide this information to comply with LQD Coal Rules and Regulations, Chapter 2, Section 5(a)(i)(D)(IV). (MDK)

Response MK 50 – Round 1

Revised text as requested.

Comment MK 50 – Round 2

No comment received.

Response MK 50 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 51 – Round 1

Mine Plan, Section MP.5.4 Diversions, 25. This section mentions permanent diversions, but there are no apparent plans for permanent diversions. Please discuss if permanent diversions are anticipated as part of the mining operation, or if all diversions will be temporary. (MDK)

Response MK 51 – Round 1

Revised text as requested.

Comment MK 51 – Round 2

No comment received.

Response MK 51 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 52 – Round 1

Mine Plan, Section MP.5.4 Diversions, 26. Exhibit MP.5-1 shows only one diversion ditch for Hidden Water Creek in T57N, R84W, Section 9. Please discuss this particular diversion and its typical design in more detail in Section MP.5.4. (MDK)

Response MK 52 – Round 1

Revised text as requested. Add design exhibit of the Hidden Water diversion ditch.

Comment MK 52 – Round 2

No comment received.

Response MK 52 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 53 – Round 1

Mine Plan, Section MP.5.5 Culverts, 27. Please provide a brief statement that commits to a periodic culvert inspection and maintenance plan to ensure that culverts will function properly over time. (MDK)

Response MK 53 – Round 1

Revised text as requested.

Comment MK 53 – Round 2

No comment received.

Response MK 53 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 54 – Round 1

Mine Plan, Section MP.5.8 Mine Pit Dewatering Plan, 28. The first sentence references a sedimentation reservoir. Where is the location of this sedimentation reservoir? Are these the “sediment basins” shown in Exhibit MP.5-1? If not these sedimentation reservoirs need to be added to this Exhibit. (MDK)

Response MK 54 – Round 1

Revised text as requested.

Comment MK 54 – Round 2

No comment received.

Response MK 54 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 55 – Round 1

Mine Plan, Section MP.5.8 Mine Pit Dewatering Plan, 29. The first paragraph references treating and discharging pit water. Please also reference in the text that appropriate WDEQ/WQD discharge permits (e.g., WYPDES) will be obtained prior to any discharge. (MDK)

Response MK 55 – Round 1

Revised text as requested.

Comment MK 55 – Round 2

No comment received.

Response MK 55 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 56 – Round 1

Mine Plan, Section MP.6.1 Surface Water, 30. Exhibit MP.1-1 shows surface disturbance directly over a few areas of Slater Creek and Hidden Water Creek. Please identify the source of disturbance in these areas. Direct disturbance of the channel should be avoided unless there is a plan for a diversion to route the stream around the disturbance. (MDK)

Response MK 56 – Round 1

See response to Comment MK 76, 88 and 99. Revised text as requested.

Comment MK 56 – Round 2

No comment received.

Response MK 56 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 57 – Round 1

Mine Plan, Section MP.6.1 Surface Water, 31. The mining trenches are often discussed with reference to Exhibit MP.1-1. However, the trenches are not shown on this Exhibit. Please add the locations of the trenches to Exhibit MP.1-1. (MDK)

Response MK 57 – Round 1

Revised Exhibit MP.1-1 as requested.

Comment MK 57 – Round 2

Response not accepted. Exhibit MP.1-1 does show trenches in the east portion of the mine, but not the western portion. For example, in the first full paragraph on Page MP-42, it discusses trenches being constructed perpendicular to the flow path of the minor Tongue River drainages. On Page MP-43, several trenches are discussed: one trench constructed parallel to Slater Creek's flow in Section 18, a trench in associated with the surface mine to the west of Slater Creek, and a trench parallel to Slater Creek in Sections 11, 12, and 13. On Page MP-43, a trench is discussed along the "TRD5" channel. Please add all of these trench locations to Exhibit MP.1-1. Also, please use a different color other than grey for the trenches, as this color tends to blend with the topographic line color. (MDK)

Response MK 57 – Round 2

A hatch has been added to Exhibit MP.1-1 in the western portion of the permit boundary to more clearly show the trench locations. Another hatch has been added to Exhibit MP.1-1 to more clearly show the location of the surface mine. The hatch colors were chosen to stand out from the topographic line color. Additionally in

response to Comment DS32 (New Comment), RAMACO has provided pit identification numbers on several exhibits and in Section MP.6 to make pit locations more easily understood.

Comment MK 58 – Round 1

Mine Plan, Section MP.6.1 Surface Water, 32. On Page MP-39, in the first carryover paragraph from the previous page, it states that any surface runoff to come in contact with mining disturbance will be treated prior to discharge. Please also reference in the text that appropriate WDEQ/WQD discharge permits (e.g., WYPDES) will be obtained prior to any discharge. (MDK)

Response MK 58 – Round 1

Revised text as requested.

Comment MK 58 – Round 2

No comment received.

Response MK 58 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 59 – Round 1

Mine Plan, Section MP.6.1 Surface Water, 33. Please discuss the diversion ditch for Hidden Water Creek in the first carryover paragraph on Page MP-39. (MDK)

Response MK 59 – Round 1

Revised text as requested. See Hidden Water Creek diversion Exhibit MP.5-2 for further details.

Comment MK 59 – Round 2

No comment received.

Response MK 59 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 60 – Round 1

Mine Plan, Section MP.6.1 Surface Water, 34. On Page MP-40, in the first carryover paragraph from the previous page, it states that any surface runoff to come in contact with mining activities will be treated prior to discharge. Please reference in the text that appropriate WDEQ/WQD discharge permits (e.g., WYPDES) will be obtained prior to any discharge. (MDK)

Response MK 60 – Round 1

Revised text as requested.

Comment MK 60 – Round 2

No comment received.

Response MK 60 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 61 – Round 1

Mine Plan, Section MP.6.1 Surface Water, 35. On Page MP-40, there is a sentence: “The surface disturbance activities will have temporary impacts on Slater Creek geomorphology including ground cover and soil erodibility”. This statement is unclear. Are the impacts to the actual Slater Creek channel or the uplands and other tributaries in the watershed? Is it reduced ground cover and increased soil erodibility? Please provide a more explicit description of the possible impacts. (MDK)

Response MK 61 – Round 1

See response to Comment MK 56, 76, 88 and 99. Revised text as requested.

Comment MK 61 – Round 2

Response not accepted. The text clarified that the only direct disturbance to the Slater Creek channel is where the channel will be redirected through a culvert under a proposed haul road. However, the sentence: “The surface disturbance activities will have temporary impacts on Slater Creek geomorphology including ground cover and soil erodibility” is still unclear. This statement implies that the channel stability of Slater Creek will be affected, and that bed and banks could experience excessive erosion. Please provide more discussion on what is meant by impacts to Slater Creek channel geomorphology. (MDK)

Response MK 61 – Round 2

Text was added to the fifth paragraph of Section MP.6.1 to clarify that the geomorphology of the Slater Creek channel such as the bed and banks will not be impacted. The only impacts to ground cover and soil erodibility will be in upper portions of the Slater Creek drainage where surface disturbance activities are proposed. The text now clarifies that this is the case and that ASCMs and other sediment and runoff control measures will be used to control sediment transport to Slater Creek.

Comment MK 62 – Round 1

Mine Plan, Section MP.6.1 Surface Water, 36. Please provide a discussion on whether the proposed mining operation would affect surface water quality such that designated uses would be affected on the major streams on and adjacent to the proposed permit area. (MDK)

Response MK 62 – Round 1

Revised text as requested.

Comment MK 62 – Round 2

No comment received.

Response MK 62 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 63 – Round 1

Mine Plan, Section MP.6.1 Surface Water, 37. The text describes possible reductions in peak flows and storm volumes. Please describe in the PHC if the proposed mining operation will have any effects on nearby or downstream surface water rights. (MDK)

Response MK 63 – Round 1

Revised text as requested.

Comment MK 63 – Round 2

Response not accepted. The text speaks to impacts to existing reservoirs/water rights on the permit boundary but does not provide a statement as to possible impacts to water rights off or downstream of the permit boundary. Please provide this discussion in the text. (MDK)

Response MK 63 – Round 2

The last paragraph of Section MP.6.1 previously stated:

“...the Brook Mine is expected to have an extremely small effect on surface water quality in the Tongue River and other major streams adjacent to the permit boundary of the Brook Mine. As such, no effect on the designated uses present on major streams adjacent to the permit boundary is expected.”

Two sentences have been added to the last paragraph of Section MP.6.1. The first states:

“There is no anticipated impact to water rights downstream of the permit boundary either.” (In reference to water quality.)

The second sentence states:

“Additionally, the minimal reduction of any surface water runoff in the upper reaches of drainages in the Brook Mine permit area will not likely have any impact on downstream water rights.”

Comment MK 64 – Round 1

Mine Plan, Section MP.6.1 Surface Water, 38. Please add a brief statement to the PHC that if it is determined that the mining operation affects a surface water right, that water right would be replaced with a water source of similar quantity and quality as provided by W.S. § 35-11-415(b)(xii). (MDK)

Response MK 64 – Round 1

Revised text as requested.

Comment MK 64 – Round 2

No comment received.

Response MK 64 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 65 – Round 1

Mine Plan, Section MP.6.1.1 Land Erosion Stability, 39. It is unclear the intent of this section. It seems to be out of place in the mine plan, as it discusses the USLE in the context of only native and reclaimed conditions. Furthermore, no data other than the K factors are presented in Mine Plan Tables (Table MP.6.1). The Reclamation Plan also does not discuss applying the USLE, so it would seem that Section MP.6.1.1 should be removed unless a USLE analysis is completed of pre- vs during- vs postmine erosion predictions. (MDK)

Response MK 65 – Round 1

Section MP.6.1.1 has been removed.

Comment MK 65 – Round 2

No comment received.

Response MK 65 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 66 – Round 1

Mine Plan, Section MP.7.1 Surface Water Monitoring, 40. It is unclear why reservoirs will be monitored in the operational monitoring program when these features were not sampled for during baseline characterization. If the reservoirs have the potential to be affected by the mining operation they should be sampled prior to mining with this information presented in Appendix D6. (MDK)

Response MK 66 – Round 1

Revised text as requested.

Comment MK 66 – Round 2

Response not accepted. Any reservoir potentially disturbed by mining activities should have a baseline water quality sampled collected with the information presented in Appendix D6. Section MP.6.1 states that Big Horn No. 2 Reservoir, Big Horn No. 14 Reservoir, Permanent Impoundment #1 Reservoir, and Legerski #1 Reservoir will be impacted by mining activities and will be reclaimed. At a minimum, the baseline water quality should be provided for these reservoirs in Appendix D6. RAMACO may also wish to expand the list of reservoirs sampled for baseline water quality to match those listed in Table RP.8-9. (MDK)

Also, there is now a statement on Page MP-49: *All existing reservoirs, stockponds, and proposed reservoirs that will be disturbed by surface mining activities as discussed in Section MP.6.1 will be monitored for relevant discharge through grab samples to ensure that any water released from these reservoirs meets the WDEQ/LQD guidelines discussed above.* It is unclear which WDEQ/LQD guidelines are being referred to. Also, if these reservoirs are going to be discharging, a WYPDES permit would likely be required. Please clarify these items in the text (MDK).

Response MK 66 – Round 2

A commitment has been added to the first paragraph of Section MP.7.1 that states RAMACO will collect water quality data from reservoirs that could potentially be impacted by mining prior to its disturbance and this data will be provided in the Annual Reports. Table MP.7-1 provides the expected monitoring locations.

Second, the statement in the third paragraph of Section MP.7.1 referring to discharge and citing aforementioned WDEQ/LQD guidelines was revised. Because these are existing reservoirs, discharge should not be the concern of RAMACO. RAMACO will monitor the reservoirs for the water quality constituents provided in Guideline 8, Appendix 7 for the time during mining upstream to ensure that mining has not impacted the reservoir.

These items should clarify that RAMACO will monitor reservoirs prior to mining operations upstream of the reservoir, and that the water quality monitoring will be to

evaluate the aforementioned list as opposed to discharge. RAMACO does not have control of these reservoirs or how they are operated.

Comment MK 67 – Round 1

Mine Plan, Section MP.7.1 Surface Water Monitoring, 41. Please add the reservoir monitoring locations listed in Table MP.7-1 to Exhibit MP.7.1. (MDK)

Response MK 67 – Round 1

Revised Exhibit MP.7.1 as requested.

Comment MK 67 – Round 2

No comment received.

Response MK 67 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 68 – Round 1

Mine Plan, Section MP.7.1 Surface Water Monitoring, 42. Please add the northing/easting State Plane coordinates for the surface water monitoring stations to Table MP.7.1. (MDK)

Response MK 68 – Round 1

See response MK

Comment MK 68 – Round 2

Response not accepted. The coordinates were not added to the Table. Please see response to Comment MK 35. Please add the northing/easting State Plane coordinates for the surface water monitoring stations to Table MP.7.1. (MDK)

Response MK 68 – Round 2

Table MP.7-1 has been updated to include the State Plane coordinates.

Comment MK 69 – Round 1

Mine Plan, Section MP.7.1 Surface Water Monitoring, 43. Please identify what type of water quantity data will be generated from the continuous stage monitoring. For example, will mean daily flow rates and/or peak daily flow rates be estimated, as these would likely be submitted to the LQD in the Annual Report? (MDK)

Response MK 69 – Round 1

Revised text as requested.

Comment MK 69 – Round 2

No comment received.

Response MK 69 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 70 – Round 1

Mine Plan, Section MP.7.1 Surface Water Monitoring, 44. The text in the last paragraph on Page MP-45 states that water quality samples will be collected from a single station using an ISCO automatic sampler. Please identify in the text which station this is. Also, please explain the rationale for using an ISCO sampler at only one of the four stream monitoring sites. (MDK)

Response MK 70 – Round 1

Revised text as requested. The station equipped with the ISCO automatic sampler was the only station equipped with such a device due to the stations location as well as expected flows. Quarterly grab samples taken at stations upstream of mining disturbances will give an accurate representation of water quality entering the permit boundary. Since the station equipped with an automatic sampler is located near the area in which Slater Creek exits the permit boundary, an automatic sampler allows the operator see if the mining activities of the Brook Mine have an impact on the water quality of Slater Creek as the highest chance water quality is affected will occur during precipitation events. An automatic recorder was not installed at the station downstream of disturbances on Hidden Water Creek because the recorded and modeled flows for the drainage are extremely low. No observable flow had been recorded on any surface water station along Hidden Water Creek, despite precipitation events having occurring. As such, any data collected by an automatic sampler on Hidden Water Creek would occur during extreme precipitation events in which the flows through Hidden Water Creek would likely have high turbidity and be an unrealistic representation of the water quality within Hidden Water Creek.

Comment MK 70 – Round 2

No comment received.

Response MK 70 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 71 – Round 1

Mine Plan, Section MP.7.1 Surface Water Monitoring, 45. The text in the first paragraph on Page MP-46 states that data will be evaluated to determine if any surface water and groundwater interactions exist. It would seem that any interactions

should have already been identified during the baseline characterization of the hydrological system on and near the proposed permit area. It does not appear that the permit application discusses surface/groundwater interactions. (MDK)

Response MK 71 – Round 1

Revised text as requested. The monitoring is a continuation of the baseline monitoring sites.

Comment MK 71 – Round 2

Response not accepted. The response states that the text was revised but the same statement remains without any additional explanation. If surface and groundwater interactions are expected to exist then these should have already been discussed in the baseline characterization of the hydrologic system. It does not appear that the permit application discusses surface/groundwater interactions. Please provide more explanation on this in the text. (MDK)

Response MK 71 – Round 2

The third and fourth to the last sentences in the last paragraph of Section MP.7.1 were edited to state:

“Baseline monitoring has not indicated any interactions between surface water and groundwater. However, surface water data will continue to be compared to groundwater monitoring data to determine if any surface water and groundwater interactions exist that weren’t observed in baseline studies.”

Comment MK 72 – Round 1

Mine Plan, Section MP.8 Water Use, 46. Please state in the text that all water from surface reservoirs or wells will be used under appropriate permits from the State Engineer’s Office (SEO). (MDK)

Response MK 72 – Round 1

Revised text as requested.

Comment MK 72 – Round 2

No comment received.

Response MK 72 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 73 – Round 1

Mine Plan, Section MP.8 Water Use, 47. It is advised that the applicant discuss with the SEO-Interstate Streams Division any implications that water use may have under the Yellowstone River Compact. (MDK)

Response MK 73 – Round 1

Revised text as requested.

Comment MK 73 – Round 2

No comment received.

Response MK 73 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 74 – Round 1

Mine Plan, Addendum MP-6 Subsidence Control Plan, Section MP.6.3 Subsidence Monitoring and Assessment and Section MP-6.4 Subsidence Control and Remediation, 48. The text states that subsidence monitoring would be discontinued if no evidence of subsidence occurred after six months after highwall mining. Please include a clarifying statement that the applicant would remediate subsidence up until bond release is approved, even if the subsidence was detected later than the six months of initial monitoring. (MDK)

Response MK 74 – Round 1

Please see revision to last paragraph of Addendum MP-6.

Comment MK 74 – Round 2

No comment received.

Response MK 74 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 106 – Round 2 (New Comment)

In Section MP.2.1.2 Change House and Equipment Service Shop, on Page MP-8, it states that wash down water will be routed to wastewater impoundment. As stated on Page MP-26, wastewater reservoirs are not currently planned as part of the mining operation. The text in this section should also clarify that wastewater reservoirs are not planned. (MDK)

Response MK 106 – Round 2 (New Comment)

The text in Section MP.2.1.2 was not revised. The text in Section MP.5.2 was changed to reflect that wastewater impoundment(s) will be required. Designs for the wastewater impoundment are provided in Addendum MP-2.

Comment MK 107 – Round 2 (New Comment)

In Section MP.5.2.1 General Design Criteria, there is a sentence: A discussion regarding the USLE method is provided in Section MP.6.1.1. As per to the response to Comment MK 65, Section MP.6.1.1 has been removed. Please remove the sentence that references Section MP.6.1.1. (MDK)

Response MK 107 – Round 2 (New Comment)

The sentence referencing the previously deleted Section MP.6.1.1 was removed.

Comment MK 108 – Round 2 (New Comment)

In Section MP.6.1 Surface Water, there is a sentence on Page MP-42: *Any surface runoff to come in contact with mining disturbance will be treated in the pits or retained in sedimentation control structures in the vicinity of Hidden Water Creek to meet water quality standards before being discharged from the Permit Area.* As noted in the response to Comment MK 49, sedimentation impoundments are not currently planned as part of the mining operation. The text in this section should also clarify that sedimentation impoundments are not planned. (MDK)

Response MK 108 – Round 2 (New Comment)

The text in Section MP.6.1 was not revised. The text in Section MP.5.2 was changed to reflect that sedimentation reservoirs will be required for mining operations. The designs for sedimentation impoundments are provided in Addendum MP-2.

Comment MK 109 – Round 2 (New Comment)

In Section MP.6.1 Surface Water, there is a sentence on Page MP-42: *As previously discussed, any runoff coming into contact with mining activities will be captured in a sedimentation impoundment or ASCM to meet water quality standards prior to discharge from the Permit Area.* As noted in the response to Comment MK 49, sedimentation impoundments are not currently planned as part of the mining operation. The text in this section should also clarify that sedimentation impoundments are not planned. (MDK)

Response MK 109 – Round 2 (New Comment)

The text in Section MP.6.1 was not revised. The text in Section MP.5.2 was changed to reflect that sedimentation reservoirs will be required for mining operations. The designs for sedimentation impoundments are provided in Addendum MP-2.

Comment MK 110 – Round 2 (New Comment)

In Section MP.6.1 Surface Water, there is a sentence on Page MP-43: *Sedimentation impoundments will capture runoff that has come in contact with mining activities, and will treat the water to meet water quality standards before discharge.* As noted in the response to Comment MK 49, sedimentation impoundments are not currently planned as part of the mining operation. The text in this section should also clarify that sedimentation impoundments are not planned. (MDK)

Response MK 110 – Round 2 (New Comment)

The text in Section MP.6.1 was not revised. The text in Section MP.5.2 was changed to reflect that sedimentation reservoirs will be required for mining operations. The designs for sedimentation impoundments are provided in Addendum MP-2.

Comment MK 111 – Round 2 (New Comment)

In Section MP.6.1 Surface Water, there is a sentence on Page MP-44: *Any runoff that does enter disturbed areas will be captured in a sedimentation pond or treated in the trenches to meet water quality requirements before being discharged from the Permit Area.* As noted in the response to Comment MK 49, sedimentation impoundments are not currently planned as part of the mining operation. The text in this section should also clarify that sedimentation impoundments are not planned. (MDK)

Response MK 111 – Round 2 (New Comment)

The text in Section MP.6.1 was not revised. The text in Section MP.5.2 was changed to reflect that sedimentation reservoirs will be required for mining operations. The designs for sedimentation impoundments are provided in Addendum MP-2.

Comment MK 112 – Round 2 (New Comment)

In Section MP.12.5 Mine Facilities, the first bullet is for a Sedimentation Pond. As noted in the response to Comment MK 49, sedimentation impoundments are not currently planned as part of the mining operation. The text in this section should also clarify that sedimentation impoundments are not planned. (MDK)

Response MK 112 – Round 2 (New Comment)

The bullet item in Section MP.12.5 was not deleted. The text in Section MP.5.2 was changed to reflect that sedimentation reservoirs will be required for mining operations. The designs for sedimentation impoundments are provided in Addendum MP-2.

Comment MK 113 – Round 2 (New Comment)

In Section MP.12.5 Mine Facilities, the second bullet is for a Wastewater Reservoir. As stated on Page MP-26, wastewater reservoirs are not currently planned as part of the

mining operation. The text in this section should also clarify that wastewater reservoirs are not planned. (MDK)

Response MK 113 – Round 2 (New Comment)

The bullet item in Section MP.12.5 was not deleted. The text in Section MP.5.2 was changed to reflect that wastewater reservoirs will be required for mining operations. The design for the wastewater impoundment is provided in Addendum MP-2.

Comment MK 114 – Round 2 (New Comment)

In Section MP.12.5 Mine Facilities, the third bullet is for a Flood Control Reservoir. As stated on Page MP-29, flood control reservoirs are not currently planned as part of the mining operation. The text in this section should also clarify that flood control reservoirs are not planned. (MDK)

Response MK 114 – Round 2 (New Comment)

The text in Section MP.5.3 in the second paragraph was revised to reflect that flood control reservoirs will be required for mining operations within the first five years. The designs of these flood control reservoirs are provided in Addendum MP-2 and the locations in relation to the permit area are shown on Exhibit MP.5-1. Therefore, the text in Section MP.12.5 was not revised to remove “Flood Control Reservoir” from the list.

Comment MK 115 – Round 2 (New Comment)

Mine Plan Addendum MP-1 commits to getting LQD approval and doing further sediment yield analysis for ASCMs that drain larger than 30 acres, as per LQD Guideline No. 15. It isn't clear from the Hydrologic Control Plan in Exhibit MP 5-1 if any of the currently proposed ASCMs drain more than 30 acres. Please indicate if any of the ASCMs shown in Exhibit MP 5-1 drain more than 30 acres. (MDK)

Response MK 115 – Round 2 (New Comment)

Exhibit MP.5-1 now shows the drainage areas for any ASCMs that drain more than 30 acres. Any ASCMs with drainage areas of more than 30 acres have designs provided in Addendum MP-2.

Comment MK 116 – Round 2 (New Comment)

LQD Guideline No. 15 states that ASCMs should not be used for disturbed or reclaimed areas that are within one-half mile (channel distance) of Class 1 or Class 2 streams. Since the Tongue River and Goose Creek are Class 2 streams, please provide an analysis of the distance of the currently proposed ASCMs on Exhibit MP 5-1 to the Tongue River and Goose Creek. In accordance with LQD Guideline No. 15, more traditional sediment control methods (i.e., sedimentation impoundments) may be needed for disturbed areas that are close to the Tongue River and Goose Creek. (MDK)

Response MK 116 – Round 2 (New Comment)

Exhibit MP.5-1 now shows a half mile buffer from the Tongue River and Goose Creek. In those locations where ASCMs had been proposed within a half mile of either the Tongue River or Goose Creek, more robust methods of sediment control have been implemented (primarily sediment impoundments and collector ditches). Because several locations that require such sediment control measures are within the first five years of operations, sediment impoundments have been designed and these designs are provided in Addendum MP-2. The locations of the sediment impoundments and collector ditches in relation to the permit area are shown on Exhibit MP.5-1.

Comment MK 117 – Round 2 (New Comment)

LQD Guideline No. 15 provides monitoring guidance for ASCMs based on the drainage area upstream of the ASCM. For large receiving streams (drainage area greater than 1.0 square mile), monitoring should include repeated surveys of channel cross-sections and/or upstream and downstream sediment yield stations. Please provide a commitment to conduct this monitoring to evaluate the performance of the proposed ASCMs that drain to large receiving streams. (MDK)

Response MK 117 – Round 2 (New Comment)

A commitment has been added to the last paragraph of Section MP.5.1 that RAMACO will either monitor the stream channel cross sections or will have upstream and downstream sediment yield monitoring stations to ensure the ASCMs are functioning properly in areas that drain to receiving streams with a drainage area of greater than 1.0 square mile.

Comment MuK 32 – Round 1

Mine Plan, 32. Please provide an electronic copy of the groundwater model referenced in Addendum MP-3. In addition, please provide the GIS projection coordinate of the model files that will enable the LQD to plot the model results in GIS for the purposes of producing the CHIA (Cumulative Hydrologic Impact Assessment). The LQD review of the model files might potentially generate additional comments, clarifications or questions. (MK)

Response MuK 32 – Round 1

An electronic copy of the groundwater model will be provided under separate cover. The elements in the model are based on the Wyoming East Central NAD 83 state plane coordinate system. To convert from model Grid to the state plane coordinates the X offset is 1367387.512 and the Y offset is 1915004.382. There is no rotation from the model grid to the state plane coordinate system.

Comment MuK 32 – Round 2

Response conditionally accepted. Because of a version compatibility issue between the software used by the LQD and the mine, the LQD was not able to review the model files. The LQD has contacted Office of Surface Mining (OSM) to explore the options (if any) to update the Groundwater Vistas software to the latest version. OSM is looking into this issue and has not responded during the completion of the review. The LQD would also welcome any suggestions from the mine to resolve this issue. (MK)

Response MuK 32 – Round 2

RAMACO suggests that WDEQ/LQD obtain a “Student License” for Groundwater Vistas. A student license will allow WDEQ/LQD to view the model but not to make any changes to the model. The Brook Mine model cannot be saved to an older version of Groundwater Vistas without causing significant issues in the functionality of the model. The newer versions of Groundwater Vistas contain features vital to the functionality of the model that are not available in older versions of Groundwater Vistas.

Comment MuK 33 – Round 1

Mine Plan, MP.1.1 Type of Mine, 33. Page MP-1 states, “Below the Tongue River Member is the Lebo shale member of the Fort Union Formation which contains the Masters Seam (Cardno MM&A, October 2013).” This statement is not consistent with Table D5.3-1, Page D5-T1 and other descriptions in Appendix D5. Table D5.3-1 indicates Masters Coal seam is in the Tongue River Member. Please clarify and make appropriate changes throughout the submittal (Example: MP 4.4). (MK)

Response MuK 33 – Round 1

Revised text as requested.

Comment MuK 33 – Round 2

No comment received.

Response MuK 33 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MuK 34 – Round 1

Mine Plan, MP.1.1 Type of Mine, 34. Major coal seams on the Brook Mine include: Dietz (1,2,3), Monarch, Upper Carney, Lower Carney and Masters.”. Dietz (1,2,3) coal seam is not included in the description presented in Section D5.3.3.3, Appendix D5. Please clarify: (i) the seams that will be mined by the Brook Mine and (ii) include the description of all the coals seams as appropriate in Appendix D5 and Appendix D6. (MK)

Response MuK 34 – Round 1

Please refer to Mine Plan Section MP.4.4.1 for targeted coal seams at the Brook Mine.

Comment MuK 34 – Round 2

No comment received.

Response MuK 34 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MuK 35 – Round 1

Mine Plan, MP.5.8 Mine Pit Dewatering Plan, Consider using the groundwater model referenced in Appendix D-3 to provide a description for a range of estimates on anticipated dewatering rates/volumes and groundwater inflows to the mine pit. (MK)

Response MuK 35 – Round 1

The text in Section MP.5.8 is to indicate that water entering the pit from either groundwater or surface water will be controlled using sumps and treated prior to discharge.

Comment MuK 35 – Round 2

Response not accepted. Please provide a range of estimates of the expected groundwater inflows to the pit. The intent of this comment is to understand the volume/rate of water that will be dewatered to facilitate mine operations. In addition, please clarify if the groundwater model provides an estimate of this inflow to the pit. (MK)

Response MuK 35 – Round 2

Yes, the amount of water discharging from the drains to simulate mining can be used to estimate how much water would enter into the mine pits during the mining scenarios. The model predicted pit inflow rates are estimated to range between 0.3 gpm and 75 gpm depending on the location of the mine pits. Model predicted pit inflow rates have been added to Addendum MP-3 Section 4.9 (Table 4.9-2). Also, text describing the range of flows has been added to Section MP.5.8.

Comment MuK 36 – Round 1

Mine Plan, MP.5.8 Mine Pit Dewatering Plan, 36. Please clarify the anticipated effects of the faults on the dewatering plan or groundwater impacts during mining. (MK)

Response MuK 36 – Round 1

Since the water will be collected in a sump, treated, and then discharged, the faults should have no effect.

Comment MuK 36 – Round 2

Response not accepted. It is acknowledged that the water will be collected in a sump. The intent of the comment is to get an understanding on the effects of faults on the inflows to the pit. For example, are the pit inflow rates sensitive to the location and permeability of the faults within the permit boundary? If yes, please provide a range of estimates to account for this sensitivity. (MK)

Response MuK 36 – Round 2

The faults do influence the inflow to the pits. As shown on MP-3 Figures 4.9-12, 4.9-13, and 4.9-14 the faults generally cause a shadow effect where the coals downstream of the faults dry out because the faults prevent efficient recharge of the coal aquifer downstream of the fault. An additional table added to Addendum MP-3 (Table 4.9-2) allows the influence of the faults on the pit inflows to be further evaluated. As shown on Table 4.9-2 the predicted pit inflow rates decline significantly between 2018 and 2019. Between 2018 and 2019 the mining moved closer to the fault located in the northeast side of the permit. The decline in pit inflow is partially due to the fact that the coals immediately downgradient of the fault are drier.

Comment MuK 37 – Round 1

Mine Plan, MP.5.9 Dewatering Wells, 37. Please provide a brief discussion on the anticipated quality of groundwater removed at various stages of mining. (MK)

Response MuK 37 – Round 1

Revised text as requested.

Comment MuK 37 – Round 2

Response not accepted. In addition to the reference to Appendix D6, please provide a description of any expected variability or trends in water quality of the groundwater removed as different coal seams are mined. Are there any expected groundwater constituents of concern based on Appendix D6? (MK)

Response MuK 37 – Round 2

The third paragraph of Section MP.5.9 now includes a short discussion summarizing information from Appendix D6. The discussion states some of reasons why water quality could vary during the progression of mining operations. However, the discussion also states that even with the variability, there are no expected groundwater constituents of concern that could cause problems during dewatering and surface containment. The following table is a summary of the information already provided in Appendix D6:

Constituent of Concern	Units	Acute Standard¹	CRN	MST	CRN-MST
Priority Pollutants					
Arsenic, dissolved	mg/L	0.34	<0.005	<0.005	<0.005 - 0.007
Cadmium, dissolved	mg/L	0.002	<0.001	<0.001	<0.001 - 0.001
Copper, dissolved	mg/L	0.0134	<0.01 - 0.02	<0.01	<0.01
Lead, dissolved	mg/L	0.0646			<0.02
Mercury, dissolved	mg/L	0.0014	<0.001	<0.001	<0.001
Nickel, dissolved	mg/L	0.4682	<0.01	<0.01	<0.01
Selenium, dissolved	mg/L	0.02	<0.005 - 0.005	<0.005	<0.005 - 0.005
Zinc, dissolved	mg/L	0.1172	<0.01 - 0.01	<0.01 - 0.02	<0.01
Non-Priority Pollutants					
Ammonia	mg/L	varies ²	<0.1 - 7.6	2 - 10.6	1 - 2.3
Chloride	mg/L	860	7 - 27	7 - 30	11 - 24
Fluoride	mg/L	2 ³	0.5 - 1.9	0.5 - 1.5	1.7 - 2
Laboratory pH	s.u.	6.5-9.0	7.6 - 8.3	7.6 - 8.4	8.3 - 8.4
Nitrate/Nitrite	mg/L	10 ³	<0.1 - 7.9	<0.1 - 8	<0.1 - 1.2
Barium, dissolved	mg/L	2 ³	<0.1	<0.1	<0.1
Iron, dissolved	mg/L	0.3 ³	<0.05 - 0.22	<0.05 - 0.68	<0.05 - 0.21

¹ WDEQ-WQD Rules and Regulations Chapter 1, Appendix B, Aquatic Life Acute Value

² WDEQ-WQD Rules and Regulations Chapter 1, Appendix C, Ammonia Toxicity is pH and Temperature Dependent

³ WDEQ-WQD Rules and Regulations Chapter 1, Appendix B, Human Health Consumption of Fish and Drinking Water

As can be seen in this summary table, most constituents in the Carney and Masters coal seams fall below the acute standard. This table has not been included in the Mine Plan because this is baseline data that does not belong in the Mine Plan. This table has also not been added to Appendix D6 because the groundwater quality constituent concentrations are already summarized in Appendix D6. RAMACO has committed in the Mine Plan to monitoring groundwater quality during the course of operations in order to ensure that there are no constituents of concern that could cause issues while dewatering the mine pits in potential surface containment.

Comment MuK 38 – Round 1

Mine Plan, MP.5.9 Dewatering Wells, 38. If groundwater is discharged into a stream channel, anticipated discharge flow rate, water quality, and estimated seasonal discharge of the groundwater should be tabulated. The availability and suitability of this water for downstream water users should also be evaluated. Please clarify if this is an expected mechanism to discharge pumped groundwater. (MK)

Response MuK 38 – Round 1

Revised text as requested.

Comment MuK 38 – Round 2

No comment received.

Response MuK 38 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MuK 39 – Round 1

Mine Plan, MP.5.8 Groundwater Rights, Please include a description on any expected degradation of groundwater quality caused by the mining operation (including lateral flow through spoils) in the adjudicated wells. (MK)

Response MuK 39 – Round 1

Revised text as requested.

Comment MuK 39 – Round 2

No comment received.

Response MuK 39 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MuK 40 – Round 1

Mine Plan, MP.6.2.Groundwater, 40. Please provide a brief discussion on any hydrologic effects caused by anticipated changes in recharge to the aquifers during mining. (MK)

Response MuK 40 – Round 1

Revised text as requested.

Comment MuK 40 – Round 2

Response not accepted. Not able to locate the revision made. Typically, the revisions from other operators are highlighted with bolded text or a different color to enable the reviewer to efficiently review the changes made. Without that tracking mechanism, it is difficult to review the exact revisions. Please consider using a distinct tracking mechanism in the future submittals. (MK)

Response MuK 40 – Round 2

RAMACO does not anticipate significant changes to recharge rates due to disturbance at the Brook Mine. Two sentences have been added to the end of Section MP.6.2.1 that state that RAMACO doesn't expect significant fluctuations in recharge rates, but commits to monitoring groundwater levels according to Section MP.7 and will report any significant fluctuations in groundwater levels that could be attributed to altered recharge rates.

Comment MuK 41 – Round 1

Mine Plan, MP.6.2.Groundwater, 41. Please provide an assessment of any subsidence effects (Addendum MP-6) on the hydrologic system during operations. (MK)

Response MuK 41 – Round 1

Revised text as requested.

Comment MuK 41 – Round 2

No comment received.

Response MuK 41 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MuK 42 – Round 1

Mine Plan, MP.6.2.Groundwater, 42. Please discuss if there are any expected impacts on groundwater quality caused by subsidence. (MK)

Response MuK 42 – Round 1

Revised text as requested.

Comment MuK 42 – Round 2

No comment received.

Response MuK 42 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MuK 43 – Round 1

Mine Plan, MP.6.3.2 Plan to Mitigate the Impacts on Groundwater, 43. If the quality or quantity of adjudicated water supplies are affected, then an alternative source should be identified as part of the mitigation plan. Please provide a statement to meet this statutory requirement (W.S. § 35-11-415(b)(xii)). (MK)

Response MuK 43 – Round 1

Revised text as requested.

Comment MuK 43 – Round 2

No comment received.

Response MuK 43 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MuK 44 – Round 1

Mine Plan, MP.7.2 Groundwater Monitoring, 44. Please clarify the lack of any shallow monitor wells near Hidden Water Creek, Goose Creek and Tongue River alluvium and if this will be an impediment to completely characterize the groundwater impacts during mining. (MK)

Response MuK 44 – Round 1

Hidden Water Creek has no alluvium therefore, no shallow well can be installed. Goose Creek in the area of the permit is through a reclaimed mine area (pre-law) therefore there is not alluvium. As discussed throughout we will not impact the Tongue River Alluvium. RAMACO will add wells in the Tongue River Alluvium.

Comment MuK 44 – Round 2

Response not accepted. Please provide a more detailed plan for installing the proposed alluvial monitoring well(s). (MK)

Response MuK 44 – Round 2

See comments MK-21,22 (Round 2) responses. Discussion of the potential AVF impacts and proposed alluvial monitoring plan is presented in Mine Plan Section MP.25.

Comment MuK 45 – Round 1

Mine Plan, MP.7.2 Groundwater Monitoring, 45. Please clarify the possibility of any of the monitor wells shown in Exhibit MP.7-7 being discontinued due to any constraints in the proposed-mine plan (example: mined through). (MK)

Response MuK 45 – Round 1

Revised text as requested.

Comment MuK 45 – Round 2

No comment received.

Response MuK 45 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MuK 46 – Round 1

Mine Plan, MP.8 Water use, 46. Page MP-47 states, “Industrial water will be obtained from groundwater wells or from water collected in sediment and flood control reservoirs.” Please clarify if the groundwater wells mentioned in this statement are wells that will be exclusively used as industrial supply wells or if they are same as dewatering wells. (MK)

Response MuK 46 – Round 1

Revised text as requested.

Comment MuK 46 – Round 2

Response not accepted. Please provide additional description on the source aquifer for the proposed industrial supply wells. (MK)

Response MuK 46 – Round 2

Discussion regarding wells as a water source was removed from Section MP.8. Due to the coal seams being mostly dry and the only reliable aquifers being very deep, RAMACO will rely on surface water rights and water collected in the sediment and flood control reservoirs and other sources for supplying the quantities of water needed for industrial purposes. Refer to Table MP.8-1 for a summary of water quantity obtained from each source.

Comment MuK 47 – Round 1

Mine Plan, MP.8 Water use, 47. Page MP-48 states, “It is estimated that the total water use will be approximately 400 million gallons per year.” Please provide a discussion comparing the reported water use by other mines of similar size in the Powder River Basin.

Response MuK 47 – Round 1

No record of reported water use was discussed in the annual reports submitted to WDEQ for several different mines within the Powder River Basin. As such, a comparison was unable to be made.

Comment MuK 47 – Round 2

Response not accepted. The SEO requires a submittal of the water use by the other mines. In addition, the coal review reports by the BLM also provide a summary of water use. Example: AECOM, Inc., 2014, Update of the Task 1B Report for the Powder River Basin Coal Review – Current Water Resources Conditions, prepared for Bureau of Land Management High Plains District Office and Wyoming State Office, <http://www.blm.gov/pgdata/etc/medialib/blm/wy/programs/energy/coal/prb/coalreview/phase2/Task1B.Par.91805.File.dat/Task1B.pdf>.

Response MuK 47 – Round 2

As discussed in the meeting between WDEQ and WWC on September 1, 2015, the AECOM report has been added as a reference to the Mine Plan. Water usage for the Brook Mine has been reevaluated and presented in Table MP.8-1. The fourth paragraph of Section MP.8 summarizes the expected water usage by the Brook Mine per year. This paragraph states that the approximate annual water usage at the Brook Mine will be 368 acre-feet which is on the lower end of water usage ranges provided in the report (300 to 920 acre-feet).

Comment MuK 48 – Round 1

Mine Plan, MP.8 Water use, 48. Page MP-48 states, “It is estimated that the total water use will be approximately 400 million gallons per year.” Please provide a comparison of this estimated total water use against the various estimated water sources available during mining (Example: from dewatering wells). It will be very helpful to provide a discussion on contingency measures during extreme wet/dry years or if the proposed mine plan does not require extensive dewatering. (MK)

Response MuK 48 – Round 1

RAMACO is currently working to solidify the necessary water right for this water. The sources and associated amounts are in discussions and therefore not presented at this time.

Comment MuK 48 – Round 2

Response not accepted. The information will be reviewed as soon as it is made available to the LQD. (MK)

Response MuK 48 – Round 2

Table MP.8-1 has been added to the Mine Plan to outline the specific water uses with estimated quantities projected at the Brook Mine. Table MP.8-1 also shows the expected volume of water from each source. The fourth paragraph of Section MP.8 has been revised to state that the Brook Mine will use approximately 120 million gallons per year with an expected variability of plus or minus 20 percent. A statement was added to the fourth paragraph of Section MP.8 that enough water is available

from the surface water rights that any variations in the quantities from other sources can be covered by the surface water rights.

Comment MuK 49 – Round 1

Mine Plan, MP.8 Water use, 49. Please clarify if there is any expected variability in this projected water use (example: is it closely related to the mine plan). (MK)

Response MuK 49 – Round 1

Revised text as requested.

Comment MuK 49 – Round 2

Response not accepted. The text indicates that the total water use will be approximately 400 million gallons per year. Please provide at least a range of expected variability in this projected annual water use. (MK)

Response MuK 49 – Round 2

The water usage at the Brook Mine has been reevaluated. Table MP.8-1 has been added to the Mine Plan which summarizes the expected quantities of water usage per day by specific use. This table shows that the Brook Mine is expected to use approximately 328,200 gallons per day. The fourth paragraph of Section MP.8 states that this equates to approximately 120 million gallons per year (significantly less than originally reported). The text in the fourth paragraph of Section MP.8 also states that the water usage has an expected variability of plus or minus 20 percent.

Comment MuK 50 – Round 1

Mine Plan, Addendum MP-3 Groundwater Model, 50. Page Addendum MP-3-19 states, “Since, most of the wells within the modeled domain are stock wells with intermittent pumping and completed in geologic strata below the Masters Coals, they are relatively inconsequential to the groundwater system modeled in this report.” Please provide a Figure (or reference) to show these wells, their depths and discuss on why they are hydrogeologically isolated from the effects of the proposed mine. (MK)

Response MuK 50 – Round 1

All the groundwater rights are tabulated within Appendix B of the adjudication volume and Exhibits 5 and 8 in the adjudication volume show the locations of each respective groundwater right. Please note that adjudication Exhibits 5 and 8 include monitor wells in addition to stock and domestic wells so all the wells shown on the exhibits are not necessarily wells that are being used as water supply wells. In fact, almost all the completed water wells shown on Exhibit 5 of the adjudication volume within the Brook Mine permit area are actually monitor wells. The Cross Sections presented in Exhibit 2 of Addendum D5-3 show the depth of the coal seams at various locations within the

Brook Mine Permit. For comparison, the depths of each well are listed in the tabulation in Appendix B of the adjudication volume.

The statement on Page MP-3-19 “they (the wells) are relatively inconsequential to the groundwater system modeled in this report” means that the wells are not believed to be significant stressors to the groundwater system because of their relatively low pumpage rates. This statement should not be interpreted to mean that all of the stock and domestic wells in the area are hydrologically isolated from the coals proposed for mining within the Brook Mine Permit area. In fact, Section 4.9 of Addendum MP-3 specifically describes 26 wells that, based on their depths and locations, are likely completed within the coals. The expected impacts to these wells were assessed as part of the modeling exercise. Based on a comparison between the reported depths in the water rights tabulation in Appendix B of the adjudication volume and the geologic cross sections in Addendum D5-3, the other stock and domestic wells in the area were determined to be completed either in the Tongue River alluvium, or deeper strata below the Carney coal and do not have a direct hydrologic connection to the coals proposed for mining in the Brook Mine and were not specifically evaluated in the groundwater model.

Along the eastern edge of the model domain there are a large number of CBM wells and, based on available data presented in the water rights tabulation in Appendix B of the Adjudication volume, these wells are likely pumping water from the Carney and Masters coal seams. The impacts from the CBM wells are described in detail within later sections of the report. However, the text on page MP-3-19 does not speak to the CBM wells. Minor changes to the text on page Addendum MP-3-19 and additional explanatory text have been added to this page to provide further clarification.

Comment MuK 50 – Round 2

Response conditionally accepted. Please incorporate the context of the response into the permit application. (MK)

Response MuK 50 – Round 2

Section 2.2 of Addendum MP-3 had previously been updated to incorporate this comment response. Additional explanatory text has also been added to Addendum MP-3 Section 2.3 to further incorporate the context of this response into the Permit Application.

Comment MuK 51 – Round 1

Mine Plan, Addendum MP-3 Groundwater Model, 51. Page Addendum MP-3-20 states, “The faults are significant in lateral extent and form natural no flow boundaries”. Please provide a discussion (or refer to a discussion) on how these faults were determined to be no flow boundaries. (MK)

Response MuK 51 – Round 1

Faulting within the permit area was mapped by B.E. Barnum on the USGS Monarch Quadrangle. As noted in Section D5.3.2, Barnum indicates fault displacements on the order of 50 feet within the mine area. Lithologic logs provided in Addendum D-5-3 demonstrate that the dominating lithology in the column is claystone and coal thicknesses are less than 20 feet. This offset geology from faulting results in a claystone hanging or footwall adjacent the coal aquifer and therefore discontinuity of the aquifer and an assumed hydrologic flow boundary.

Comment MuK 51 – Round 2

Response not accepted. It is appreciated and acknowledged the note of lithologic logs. In addition, please clarify or substantiate if there is any hydrologic evidence to support the interpretation that the faults are no flow boundaries (Example: water levels, water quality or other hydrologic evidence). This will increase the validity of the no-flow assumption. (MK)

Response MuK 51 – Round 2

In addition to the lithological evidence discussed in the previous response that supports treatment of the faults as no flow barriers, comparisons of water levels in coal monitor wells on either side of the fault also demonstrate that the faults serve as no flow barriers. Exhibits D6.2-2 and D6.2-3 in Addendum D6 illustrate the potentiometric surface in Masters and Carney coal seams, respectively. As shown on Exhibits D6.2-2 and D6.2-3, within the northeastern portion of the Brook Mine permit area there are two monitor well clusters that straddle both sides of a fault (578408 and 578409). In the case of the Masters coal, the measured water level in the monitor well on the upper side of the fault (578408-MST) is 173 feet higher than the water level measured in the monitor well completed on the downblock side of the fault (578409-MST). Similarly, the measured water level difference across the fault in the Carney monitor wells is approximately 180 feet. The change in potentiometric head between the monitor wells on both sides of the fault is significantly higher than would be expected due to the natural gradient in this area. Therefore, the variation in the measured potentiometric head across the fault demonstrates that it does serve as a hydraulic barrier. Additional text has been added to Addendum MP-3 Section 2.4.1 to more fully describe the effects that the faults have on the conceptual flow model.

Supplemental analysis of water quality on opposite sides of the faults has been conducted to note any difference in water quality that would indicate that the faults serve as no-flow barriers. This analysis and discussion has been added to Addendum MP-3 in Section 2.4.1.

Comment MuK 52 – Round 1

Mine Plan, Addendum MP-3 Groundwater Model, 52. Please clarify the reason for not estimating vertical hydraulic conductivity of the interburden using an aquifer test. (MK)

Response MuK 52 – Round 1

Response to this comment is partially clarified in responses to MK's Comments 18 and 19 above. During the aquifer test conducted at the 578409 well cluster no response was observed across the interburden, therefore, the vertical hydraulic conductivity of the interburden was too low to measure in the aquifer test. Furthermore, the static water levels in the Masters and Carney coal seams are different which demonstrates that the hydraulic conductivity of the interburden is very low. Therefore, literature values were utilized and adjusted within reasonable bounds to improve model calibration.

Comment MuK 52 – Round 2

Response conditionally accepted. Please incorporate the context of the response into the permit application. (MK)

Response MuK 52 – Round 2

The context of this response was incorporated into Addendum D6-8 "Pumping Test Report." The context was added into Section D6-8.4 "Determination of Aquifer Parameters."

Comment MuK 53 – Round 1

Mine Plan, Addendum MP-3 Groundwater Model, 53. Page Addendum MP-3-25 states, "With no unnatural stresses on the system ..." Please provide a discussion of the CBM impacts on the water levels. It appears that the hydrographs presented in Appendix D6 do not show the impacts of CBM. (MK)

Response MuK 53 – Round 1

There are multiple CBM production wells located along the eastern side of the groundwater domain. In order for the CBM producers to be able to produce gas it is necessary to significantly lower the water levels in the coal to release the gas in the coal fractures. CBM production began in this area around 1999. Therefore, it was conservatively assumed that CBM production has already resulted in lowering the water levels in the coal aquifers to the top of the coal aquifer along the eastern edge of the model domain and the general head boundaries were set accordingly to simulate this effect. Even though water level data in the coal aquifer prior to CBM production is limited because of the lack of monitor well data, prior to CBM production, the potentiometric head in the coal was estimated to be significantly higher than the top of coal.

The hydrographs presented in Appendix D6-9 do not show the impacts of CBM because they show water level changes over a one year period roughly 13 years after CBM production began in the area, and if the wells were going to be impacted by CBM, it is likely that they have already been impacted. Please note that the model assumed that CBM production would continue into the future resulting in the water levels in the coal being maintained at unnaturally low levels. Therefore, the model has conservatively estimated the combined impacts from both CBM and the proposed coal mining activities. Currently, a large majority of the CBM wells are being plugged and abandoned which may result in higher than predicted water level recovery rates in the coal aquifer.

Text edits were made to page MP-3-25 to help clarify the discussion.

Comment MuK 53 – Round 2

No comment received.

Response MuK 53 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MuK 54 – Round 1

Mine Plan, Addendum MP-3 Groundwater Model, 54. There are two sub-sections for recharge, Section 2.5.3 and Section 2.6.1. Please clarify/consolidate. (MK)

Response MuK 54 – Round 1

The two subsections have been combined into one subsection under Section 2.6.1.

Comment MuK 54 – Round 2

No comment received.

Response MuK 54 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MuK 55 – Round 1

Mine Plan, Addendum MP-3 Groundwater Model, 55. Page Addendum MP-3-26 states, "... drain cells were placed in the model to simulate seeps from the outcrops." Please provide a discussion on the evidence for seeps (or reference) observed during field surveys. Were there any field data collected on the location and flow rates of these seeps? (MK)

Response MuK 55 – Round 1

Evidence of seeps from outcrops can be seen in Color Infrared Imagery (CIR), which is included in the permit as Exhibit D11.1-1. The areas of seepage are manifested on the

CIR imagery as areas with more vegetation. Evapotranspiration from the vegetation growing along the seep removes all the water before it emanates from the formation into the drainage. Therefore, no measurements of the seepage rate at the outcrops were possible or are available. Additional discussion explaining the need for drain cells within the model is provided in Section D6.2.2. Also, text was added to Section D6.2.2 to clarify that no field flow measurements were available.

Comment MuK 55 – Round 2

Response conditionally accepted. Please include the discussion on CIR into the permit application (MK)

Response MuK 55 – Round 2

Additional text describing the seeps was added to Addendum MP-3 Section 2.6 to incorporate the context of this response.

Comment MuK 56 – Round 1

Mine Plan, Addendum MP-3 Groundwater Model, 56. Page Addendum MP-3-27 states, “River cells from MODFLOW’s river boundary conditions package were placed in the model to simulate the Tongue River and Goose Creek.” Please provide a conceptual discussion supported by field observations on the type/nature of interaction of these streams with groundwater (Gaining stream vs. losing stream). (MK)

Response MuK 56 – Round 1

As described in Section 2.3 of MP-3, the dip of the strata in the project area is generally east-southeast into the Powder River Basin and the groundwater flow direction follows this trend regionally. As such, the Tongue River comes into contact with the coal seams of interest near the updip side of the coal seams. Interactions between the surface water and groundwater occur at those points where permeable formations sub-crop into alluvial/surface water bodies. Both the Carney and the Masters coal subcrop under the Tongue River near the western edge of the model domain. Conceptually these subcrops are the only places where the coals would be in contact with the surface water. Section 2.3 of Addendum MP-3 describes the conceptual groundwater flow in some detail.

As described in Addendum MP-3 Section 2.3, the Carney coal is largely dry to the north and west of its subcrop into the Tongue River alluvium and becomes saturated at an elevation just above the elevation where it subcrops beneath the Tongue River alluvium. Therefore it is likely that the Carney Coal would lose water to the Tongue River alluvium. The potentiometric surface in the Masters Coal is roughly the same as the potentiometric surface of the Tongue River where the Masters coal subcrops beneath it. A review of the steady state groundwater model shows that where the River boundary cells are immediately above the Masters Coal the net effect is that the River boundary cells input approximately 3.2 gpm into the model. Conversely, near

the upper and lower Carney Coal/Tongue River outcrops the River cells are taking roughly 0.16 gpm out of the model. Since the coal outcrops occur beneath the Tongue River there is no way to field verify these flows but conceptually they do seem reasonable.

The river boundary cells extend to the bottom of the layer in which they are placed as discussed in response to comment MUK 74 and MUK 84. The River boundary cells were placed in Layer 1 to the confluence of Goose Creek and the Tongue River which extends east of the area where the Carney Coal would be in communication with the Tongue River alluvium. Due to the fact that the River boundary cells extend to the bottom of the layer they do provide a conduit for the River to provide recharge into the Carney Coal even though the River would be physically separated from the coal by multiple zones of low permeability shales. The estimated recharge occurring in this area from the Tongue River to both layers 1 and 2 is approximately 8 gpm. The discharge into the coals is likely conservatively overestimated and not all of the 8 gpm would necessarily end up in the coal as some of it also discharges to layer 1. As such, the model conservatively estimates that up to 11.2 gpm would be discharged from the river to the coals or overburden between the Carney Coal and the Tongue River.

The strata located above the coal seams of interest is generally claystone with low permeability as discussed in MP-3 Section 2.2. Therefore, interaction of groundwater between these units and the Tongue River or Goose Creek is very limited. Within the model domain, the Tongue River Alluvium does have large deciduous trees and other vegetation immediately adjacent to the river. Conceptually, evapotranspiration from the vegetation along the Tongue River would indicate that through the model domain the Tongue River is a losing Stream. Throughout most of the model domain where the Tongue River is present, there low permeability overburden strata between the Tongue River alluvium and the coal seams which hydrologically isolate the Tongue River from both the Masters and the Carney coal seams. Since Goose Creek is located in the eastern portion of the model domain where the coal is significantly below the alluvium and the clay intervals are even thicker, the Goose Creek alluvium is also hydrologically separated from the Masters and Carney Coals. The Goose Creek alluvium would likely see similar losses to evapotranspiration that would be observed in the Tongue River alluvium.

Comment MuK 56 – Round 2

Response conditionally accepted. Please incorporate the context of the response into the permit application. (MK)

Response MuK 56 – Round 2

Text from this response has been incorporated into Addendum MP-3 Sections 2.3 and 4.7.2 as appropriate.

Comment MuK 57 – Round 1

Mine Plan, Addendum MP-3 Groundwater Model, 57. Please provide a discussion on any contribution of groundwater baseflow to the major surface water bodies within the permit boundary. (MK)

Response MuK 57 – Round 1

As described in the response to comment MuK 56, conceptually, very little groundwater base flow from the Carney and Masters coal seams are expected to contribute to the surface water bodies within the permit boundary. The mass balance table provided in response to comment MuK 73 demonstrates that much more water is expected to enter the groundwater system from the surface water bodies (river cells) than is contributed to the surface water bodies from groundwater baseflow.

Comment MuK 57 – Round 2

Response conditionally accepted. Please incorporate the context of the response into the permit application. (MK)

Response MuK 57 – Round 2

The context of this response has been added to Addendum MP-3 via additional text to address comments MuK 56 and MuK 73. Specifically, text additions to Addendum MP-3 Section 4.10 include the context of the Round 1 response.

Comment MuK 58 – Round 1

Mine Plan, Addendum MP-3 Groundwater Model, 58. In section 3.2 MODFLOW Input Files, was aerial recharge used as an input file? Please clarify if evapotranspiration was considered as a discrete input or lumped into net aerial recharge. (MK)

Response MuK 58 – Round 1

Yes, the recharge package was used as an input file. Section 3.2 of Addendum MP-3 was updated to include a discussion of the recharge package. The evapotranspiration (ET) package was not utilized in the model. To address the effects of ET, the recharge rates were adjusted down in proportion to the estimated losses created by ET. Within most of the model domain where evapotranspiration would occur, the low permeability overburden between the surface and the coal seams of interest provide a hydrologic barrier so the evapotranspiration was ignored in these areas.

Comment MuK 58 – Round 2

Response conditionally accepted. Please incorporate the context of the response into the permit application. (MK)

Response MuK 58 – Round 2

Addendum MP-3 Section 4.2.2 was updated to incorporate the context of the Round 1 response.

Comment MuK 59 – Round 1

Mine Plan, Addendum MP-3 Groundwater Model, 59. Page Addendum MP-3-31 states, “Layer 1 – represents the coal overburden”. Please clarify if the alluvial aquifer was included in the model. Please provide justification for not considering the alluvial aquifer in the model. (MK)

Response MuK 59 – Round 1

As described in the responses to comments MuK 56 and MuK 57, the only place within the model domain where there is potential for interactions between any alluvial aquifers and the coal seams of interest is where the coal is directly below the Tongue River alluvium or Slater Creek colluvium. Where the coal is in direct contact with alluvium/colluvium, layer 1 (the coal overburden) was assigned a higher vertical hydraulic conductivity to allow the layer to better emulate the alluvial/colluvial aquifer in this location. This zone of higher hydraulic conductivity in layer 1 is depicted on Addendum MP-3 Figure 4.2-1. Groundwater Vistas does not allow discontinuous layers throughout the model domain so this allowed the alluvium/colluvium to be effectively be modeled without the need to add an additional layer across the top of the entire model domain. This helped to improve the computational efficiency of the model. Since the overburden has a very low hydraulic conductivity and hydrologically separates the coals from the other alluvial/colluvial deposits within a large portion of the model domain, there is no reason to model any additional alluvial/colluvial deposits. To help clarify this comment Figure 4.2-1, was prepared and sections 2.5 and 4.2 of MP-3 have been updated.

Comment MuK 59 – Round 2

Response conditionally accepted. Please incorporate the context of the response into the permit application. (MK)

Response MuK 59 – Round 2

With the addition of the text to address comments MuK 56 and Muk 57 as well as the text added to Addendum MP-3 Section 4.2.1, the context of this comment has been incorporated into Addendum MP-3.

Comment MuK 60 – Round 1

Mine Plan, Addendum MP-3 Groundwater Model, 60. Page Addendum MP-3-31 states, “Layer 3- Carney Interburden. This interval is generally of low to very permeability in the western portion of the Project Area”. Please clarify how the areas where Layer 3- Carney Interburden is absent are treated in the groundwater model. (MK)

Response MuK 60 – Round 1

Ground Water vistas does not allow discontinuous layers. Therefore, Layer 3 is continuous across the entire model domain. Where the coal seam coalesces on the east portion of the model, the Layer 3 interburden was modeled as coal by setting hydraulic properties of the layer equivalent to the values of the overlying and underlying coal seams. Additional text has been added to Section 4.2.1 of Addendum MP-3 to further describe how the hydraulic conductivities were assigned to layer 3.

Comment MuK 60 – Round 2

Response conditionally accepted. Please incorporate the context of the response into the permit application. (MK)

Response MuK 60 – Round 2

The context of the Round 1 response has been incorporated into Addendum MP-3 Section 4.2.1.

Comment MuK 61 – Round 1

Mine Plan, Addendum MP-3 Groundwater Model, 61. Please include a discussion of the thickness of all model layers. (MK)

Response MuK 61 – Round 1

Addendum MP-3 Section 2.5 describes the thickness of the various coal seams. Additional text has been added to MP-3 Section 4.1 to generally describe the thickness of each layer. Following are the modeled thicknesses for each layer:

- Layer 1-The thickness for this layer varies throughout the model domain. Near the western side of the model the layer is often absent where all the strata geologically younger than the Carney coal has been eroded off. These areas are generally represented as no flow cells in the model. Within the eastern portion of the model Layer 1 can be substantial. In the model the maximum thickness of Layer 1 in the eastern side of the model domain was approximately 1,100 feet.
- Layer 2-The Upper Carney coal was modeled with a constant thickness of 7 feet throughout the model.
- Layer 3-The Carney coal interburden layer varied in thickness from 4 feet up to 15 feet within the active portion of the model.
- Layer 4-The Lower Carney coal was modeled with a constant thickness of 8 feet within the model.
- Layer 5 The Carney/Masters coal interbuden layer varied in thickness from 4 feet up to 107 feet within the model.

- Layer 6-The Masters coal was modeled with a constant thickness of 6 feet within the model.

Comment MuK 61 – Round 2

Response not accepted. It is acknowledged that Section 4.2.1 provides the thickness of the model layers. Also, the response states, “*Addendum MP-3 Section 2.5 describes the thickness of the various coal seams.*” Addendum MP-3, Section 2.5 does not describe the thickness but it is a section on hydraulic properties. Please clarify. (MK)

Response MuK 61 – Round 2

The previous sections reference was incorrect. Addendum MP-3 Section 2.5.1.3 provides a statement regarding the thickness of the Carney Coal. Addendum MP-3 Section 2.5.1.4 provides a statement regarding the thickness of the Masters Coal.

Comment MuK 62 – Round 1

Mine Plan, Addendum MP-3 Groundwater Model, 62. Please include a justification for not considering the underlying zones beneath the Masters coal seam in the model. (MK)

Response MuK 62 – Round 1

The Masters coal is underlain by the Lebo Shale. The Lebo Shale is a thick (Appendix D5 Section D5.2.3), regional confining interval in the project area as described in Mine Plan Addendum MP-3 Section 2.1. There are no aquifer units identified within the model domain within the Lebo Shale with direct hydrologic connection to any of the elements of the model. Since the Lebo Shale is a regional confining unit, if it had been included in the groundwater model, it would have been assigned hydraulic parameters typical of a shale interval (very low hydraulic conductivity) and it would have essentially been a no flow barrier to the more permeable Masters coal above it. Groundwater Vistas treats the bottom of the model as a no flow boundary. Therefore, the Lebo Shale is for all practical purposes included in the model as a confining interval with the way the model is currently defined.

Comment MuK 62 – Round 2

Response conditionally accepted. Please incorporate the context of the response into the permit application. (MK)

Response MuK 62 – Round 2

The second to last paragraph in Addendum MP-3 Section 4.1 incorporates the context of the Round 1 response.

Comment MuK 63 – Round 1

Mine Plan, Addendum MP-3 Groundwater Model, 63. Please provide appropriate cross section(s) of the model grid overlaid with the drill hole data collected during baseline characterization. This will help the evaluation of the adequacy of model layer thicknesses against the stratigraphic field data. (MK)

Response MuK 63 – Round 1

As noted in Addendum MP-3 Section 4.1, the Groundwater model layers were developed from a 3D geologic model developed from drill hole data within the project area developed for the purposes of making volumetric coal estimates. Minor updates to the surfaces were made where new data provided by additional exploration drilling was completed. An additional figure was developed (Addendum MP-3 Figure 4.1-3) and included in Addendum MP-3 that depicts actual cross sections cut from the groundwater model. Addendum D5-3 of Appendix D5 includes geologic cross sections with drill hole data that can be compared back to the actual cross sections included in Figure 4.1-3 of Addendum MP-3.

Comment MuK 63 – Round 2

No comment received.

Response MuK 63 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MuK 64 – Round 1

Mine Plan, Addendum MP-3 Groundwater Model, 64. Please clarify how the layers were modeled to represent the confined/unconfined aquifer types. (MK)

Response MuK 64 – Round 1

Groundwater Vistas has a “layer type” control that was set to #5: Confined/Unconfined, which allows the model to determine whether to use storativity or specific yield for the storage coefficient based on the elevation of the water elevation vs. formation tops. Groundwater Vistas handles the aquifer type classification without further inputs.

Comment MuK 64 – Round 2

Response not accepted. It is acknowledged and noted that GW Vistas handles it in an automated mode. Please provide a description on if there were any additional checks conducted on the results from the groundwater model to verify if the aquifer type used by GW Vistas is consistent with the conceptual model and field data. Example discussion: Are the deeper layers confined for the entire simulation or do they change from confined to unconfined due to mine operations? (MK)

Response MuK 64 – Round 2

Within the model domain the coal aquifers are relatively thin, ranging in thickness from 4 to 15 feet. Because the coal aquifers are relatively thin, during the model simulation the coals were typically either confined or dry. The only place where unconfined conditions occurred in the groundwater model simulations were near the outcrops or in the cells immediately adjacent to cells that went dry during the modeling simulations. Similarly, during mining simulations the cells immediately next to the mining areas became unconfined as well. When the water level in a cell drops below the top of the layer, Groundwater Vistas treats that cell as an unconfined aquifer which means that instead of using the specific storage term to calculate the amount of water in storage, the program uses specific yield to calculate the amount of water in storage. The total area of unconfined coal aquifer was relatively small as compared to the portion of the aquifer that was dry or fully saturated. Due to the relatively small area of potential unconfined aquifer, no specific analyses were conducted to determine whether changes in the specific yield in the unconfined aquifer would affect model calibration.

Comment MuK 65 – Round 1

Mine Plan, Addendum MP-3 Groundwater Model, 65. In addition to model calibration, please provide justification for the recharge rates applied in the model including any literature references. (MK)

Response MuK 65 – Round 1

The initial recharge rates utilized in the model were initially estimated based on a USGS study (Water-Resources Investigations Report 01-4278) conducted on the eastern side of the Powder River basin and the Black Hills area. The study entitled, “Estimated Recharge to the Madison and Minnelusa Aquifers in the Black Hills Area, South Dakota and Wyoming, Water Years 1931-98.” was prepared by J.M. Carter and D.G. Driscoll. In the study Carter and Driscoll reported recharge rates varying from 0.04 inches per year to 2.93 inches per year. The 2.93 inch per year recharge rate was reported within the Madison limestone formation outcrops in the Black Hills while the lower range of recharge rates reported by Carter and Driscoll were estimated for areas in the eastern periphery of the Powder River Basin where the precipitation and soil types are similar in nature to the Brook Mine Permit area. Since calibrated recharge rates in the key recharge areas (the coal outcrops and the scoria outcrops) were within the range of values developed by Carter and Driscoll, the recharge rates used in the model are considered reasonable. Please note that the recharge rate throughout Layer 1 is much lower than the range of recharges developed by Carter and Driscoll. This is reasonable because much of Layer 1 has no hydrologic connection to the underlying coal seams. Additional justification for recharge rates applied in the model is discussed in response to comment BJ57.

Comment MuK 65 – Round 2

Response conditionally accepted. Please incorporate the context of the response into the permit application. (MK)

Response MuK 65 – Round 2

Addendum MP-3 Section 4.2.2 has been updated to incorporate the context of the Round 1 response.

Comment MuK 66 – Round 1

Mine Plan, Addendum MP-3 Groundwater Model, 66. Page Addendum MP-3-33 states, “Recharge is applied within the modeling software by applying the recharge to the highest active layer.” Please clarify the presence of any modeled ‘dry cells’ in the model and the influence of applying the recharge to the layers below the dry cells. (MK)

Response MuK 66 – Round 1

As noted in the responses for comments MuK 59 and MuK 60, Groundwater Vistas does not allow for discontinuous layers across the model domain. Along the north and the west sides of the model there is a good portion of the model domain where the upper layers have been eroded off and do not actually exist. These areas of erosion were accounted for using no flow cells. As shown on Figures 4.4-1 through 4.4-4 of Addendum MP-3, the no flow cells in the top layer are the largest in areal extent while each underlying layer has a slightly decreased areal extent of no flow cells. In this case the no flow cell distribution was adjusted to match the outcrop of each layer. The fact that the software applies the recharge to the highest active layer was taken advantage of during the modeling process, since it is an effective way to apply recharge to an outcropping layer which is under another layer that is eroded away but due to software limitations is still present in the model.

Because CBM operations have generally removed most of the water from the coal seams, there are some locations within the model domain where dry cells during the modeling have caused cells in layer 1 to go dry and the recharge is applied to the next active layer below. While this could be problematic if a high recharge rate were assigned to the model cells, generally throughout the model domain the recharge rate is very low. Therefore, this results in a very minor amount of water coming into the model and did not significantly affect the model calibration.

Comment MuK 66 – Round 2

Response conditionally accepted. Please incorporate the context of the response into the permit application. (MK)

Response MuK 66 – Round 2

Addendum MP-3 Section 4.2.2 has been updated to incorporate the context of this response.

Comment MuK 67 – Round 1

Mine Plan, Addendum MP-3 Groundwater Model, 67. Table 4.2-3. lists model porosity values. Typically, MODFLOW (flow model) does not use porosity in its calculations. Please clarify the need for this input parameter. (MK)

Response MuK 67 – Round 1

Modflow does not utilize porosity as part of its calculations. However, other modules included in the Groundwater Vistas package such as MODPATH do utilize porosity. In the case of this model, no MODPATH simulations were conducted. Therefore, the porosity term as put into the model has no impact on the calculations. However, porosity is a hydraulic parameter of the aquifer and may be important for future modeling simulations, therefore, the porosity values developed for each aquifer/aquitard unit will be left in the model report. Minor changes to the text in Addendum MP-3 have been made to clarify the role of porosity in this model.

Comment MuK 67 – Round 2

Response conditionally accepted. Please incorporate the context of the response into the permit application. (MK)

Response MuK 67 – Round 2

The context of the Round 1 response was incorporated into Addendum MP-3 Section 4.2.3 as part of the first round of comment responses.

Comment MuK 68 – Round 1

Mine Plan, Addendum MP-3 Groundwater Model, 68. The faults are not modeled in Layer 1. Please clarify the procedure for determining the vertical extents of the faults in the model. (MK)

Response MuK 68 – Round 1

The composition of Layer 1 is predominately claystone. Because Layer 1 is not composed of aquifer material and because the hanging and footwalls are composed of strata with similar hydraulic properties, displacement due to faulting does not substantially change the flow through the aquitard and placing Horizontal flow barriers in the model in layer 1 was not necessary.

Comment MuK 68 – Round 2

Response conditionally accepted. Please incorporate the context of the response into the permit application. (MK)

Response MuK 68 – Round 2

Addendum MP-3 Section 4.4.1 was updated to incorporate the context of the Round 1 response.

Comment MuK 69 – Round 1

Mine Plan, Addendum MP-3 Groundwater Model, 69. Please provide the input parameters used to model the horizontal flow barriers in the model and discuss their technical reasonableness. (MK)

Response MuK 69 – Round 1

Horizontal Flow Barriers were used in the model to simulate no-flow boundaries created by faulting within the project area. Horizontal flow barriers require two input parameters in Groundwater Vistas including wall thickness and hydraulic conductivity. The input parameter used in the model for wall thickness was 10 feet and a hydraulic conductivity of 1.0×10^{-5} ft/day was used. The horizontal flow barrier parameters as applied will essentially limit all but a very minor amount of flow across the barrier. As described in the response to comment MuK 51, the coal seams within the project area are relatively thin as compared to the fault offsets so it is reasonable to assume that the faults will significantly impede flow in the aquifer units.

Comment MuK 69 – Round 2

Response conditionally accepted. Please incorporate the context of the response into the permit application. (MK)

Response MuK 69 – Round 2

Addendum MP-3 Sections 4.4.2, 4.4.3, and 4.4.4 were updated to incorporate the context of the Round 1 response.

Comment MuK 70 – Round 1

Mine Plan, Addendum MP-3 Groundwater Model, 70. Page Addendum MP-3-40 states, “As the current, post-CBM potentiometric surface is considered the static level.....” Please provide the implications of this assumption, on the model calibration of hydraulic parameters and the mode predicted hydrologic impacts (over estimation of drawdown vs. underestimation) (MK)

Response MuK 70 – Round 1

Addendum MP-3 Sections 4.8.1, 4.10, and 4.11 all discuss the implications of CBM impacts. In addition, the response to comment MuK 53 also discusses CBM impacts to water levels. As discussed in the response to comment MuK 53, the model conservatively assumed that CBM operations have lowered the water levels in the eastern portion of the model domain to a level near the top of the coal seams. To simulate this drawdown, the elevations of each general head boundary on the east side of the model were set at an elevation just above the top of the coal seam. The general head boundaries elevations remained the same in both the steady state and the transient models. Essentially, this means that the model operated under the assumption that the post CBM impacts were permanent prior to and after the Brook Mine mining activities.

The assumption that the water levels have been permanently impacted by CBM did have a significant impact on model calibration. The severely depressed water levels caused by CBM operations have resulted in a large number of cells going dry. The hydraulic parameters of the aquifer units within the eastern portion of the model domain were not adjusted to eliminate the dry cells since it is reasonable to assume that, with the severe drawdown modeled, the coal seams could have been dewatered in these areas. Therefore, even though the effects of the CBM drawdowns were observed during calibration, no specific adjustments were made to the modeled aquifer characteristics to eliminate these impacts. The dry cells did complicate calibration of the model because they cause instability in the MODFLOW model calculations and results.

The model was developed to take into account impacts from the combined effects of CBM and the proposed coal mining. In general, CBM development impacts are significantly larger than the predicted impacts from the Brook Mine. Therefore, ignoring CBM impacts would have significantly under predicted the potentiometric surfaces within the model domain and overestimated the impacts that Brook Mine would have on the system.

Many of the CBM wells are actively being plugged and abandoned. If this trend continues, there is a chance that recovery of water levels from CBM impacts may begin which will result in recharging of the coal seams. If this happens, it is anticipated that the model conservatively over predicts the impacts to the region especially in the long term recovery scenarios.

Comment MuK 70 – Round 2

Response conditionally accepted. Please incorporate the context of the response into the permit application. (MK)

Response MuK 70 – Round 2

Most of the discussion in the original comment has already been incorporated into Addendum MP-3 with the first round of comment responses. However, an additional concluding statement from this response was added to Addendum MP-3 Section 4.1.1 to incorporate the context of the Round 1 response into the permit application.

Comment MuK 71 – Round 1

Mine Plan, Addendum MP-3 Groundwater Model, 71. It is noted that Table 4.7-1 summarizes the calibration residuals and statistics from the calibrated model. Please consider providing additional presentations of the calibrated model statistics. This will enable an easier evaluation of any spatial bias in the model calibration. (MK)

- a. X-Y plot of observed vs. simulated water levels.
- b. A map plotting the residuals to show the spatial distribution
- c. Provide a summary statistics table with Mean Error, Mean Absolute Error, Sum of Squared residuals for the calibrated model. It is noted that some of these values are presented in the sensitivity analysis. However, a compiled summary statistics table would be very helpful.

Response MuK 71 – Round 1

As requested the following additions have been made to the groundwater model report:

- A. An X-Y plot of observed versus simulated water levels has been added in the report as Addendum MP-3 Figure 4.7-1.
- B. The residuals have been added to figures 4.7-2, 4.7-3, and 4.7-4 of Addendum MP-3.
- C. Table 4.7-1 of Addendum MP-3 has been updated to include additional statistics.

Comment MuK 71 – Round 2

No comment received.

Response MuK 71 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MuK 72 – Round 1

Mine Plan, Addendum MP-3 Groundwater Model, 72. In addition, to the measured water levels, please clarify if there were any flow measurements used for model calibration. (MK)

Response MuK 72 – Round 1

There are no areas within the model domain where it was possible to collect any flow measurements that would support the modeling effort therefore, no flow measurement were used in the calibration.

Comment MuK 72 – Round 2

Response conditionally accepted. Please incorporate the context of the response into the permit application. (MK)

Response MuK 72 – Round 2

Discussion was added Addendum MP-3 Section 2.6 to clarify that no measurements of seepage at the outcrop were available. Also, text has been added to Section 4.7.2 clarifying that there are no measurements available for water that may leave or enter the Tongue River from the coal seams.

Comment MuK 73 – Round 1

Mine Plan, Addendum MP-3 Groundwater Model, 73. Please provide a water budget table (in acre-feet per year or cubic-feet per day) showing all the inflows into the model and outflows from the model.

Response MuK 73 – Round 1

The following tables summarizes the inflows and outflows from the model domain during the steady state period, 5 years into mining, the end of mining, and at the end of recovery.

Mass Balance of Steady State Calibrated Model		
Source/Sink	Inflows (ft ³ /d)	Outflows (ft ³ /d)
General Heads	16,107	22,890
River	2,569	410
Drains	-	560
Recharge	5,168	-
Total	23,846	23,860

Mass Balance 5 years into Mining		
Source/Sink	Inflows (ft ³ /d)	Outflows (ft ³ /d)
Storage	12,496	11,431
General Heads	16,130	22,904
River	2,688	385
Drains	-	1,774
Recharge	5,434	-
Total	36,749	36,494

Mass Balance End of Mining		
Source/Sink	Inflows (ft ³ /d)	Outflows (ft ³ /d)
Storage	3,670	4,146
General Heads	16,135	22,902
River	2,705	365
Drains	-	532
Recharge	5,430	-
Total	27,941	27,945

Mass Balance End of Recovery		
Source/Sink	Inflows (ft ³ /d)	Outflows (ft ³ /d)
Storage	1,698	2183
General Heads	16,138	22,901
River	2,714	363
Drains	-	535
Recharge	5,427	-
Total	25,978	25,983

Comment MuK 73 – Round 2

Response conditionally accepted. Please incorporate the tables into the permit application. (MK)

Response MuK 73 – Round 2

Addendum MP-3 Section 4.10 has been updated to include the water budget. Specifically, Table 4.10-1 includes the mass balance throughout the mining simulations. A cross reference to the mass balance discussion in Addendum MP-3 Section 4.10 was also added to Addendum MP-3 Section 4.6 for clarity.

Comment MuK 74 – Round 1

Mine Plan, Addendum MP-3 Groundwater Model, 74. Please provide a comparison of model simulated inflows and outflows against conceptual estimates of inflows and outflows. This comparison will act as another verification/check for the technical adequacy of the groundwater model (Example model GHB flows vs. reasonable estimated conceptual flows). (MK)

Response MuK 74 – Round 1

Response to comment MuK 73 includes tables that show the inflows and outflows from the model during the steady state period, 5 years into mining, the end of mining, and at the end of recovery. The five main categories of inflows and outflows include 1) storage, 2) general head boundaries, 3) river boundaries, 4) drains, and 5) recharge. Following is discussion regarding model predicted inflows and outflows for each category:

- 1) Storage – During the steady state model there is no inflow or outflow from storage so storage is not included in the first mass balance table in prepare for comment MuK 73. The model predicts that during active mining more water will come out of storage than will go into storage. Conceptually this is reasonable since during mining, water from the coals would be draining into the mined out areas. There is a trend of water continuing to come out of storage even after mining ceases. Even though the volume of water coming out of storage is quite low, it is contrary to the conceptualization of the system to have water leaving storage after mining because at this point water should be going back into storage. This phenomenon is attributed to the fact that many of the cells in the model go dry during mining because CBM operations have significantly dewatered the coals and there is not much water available in storage (see comment MuK 70). When the cells go dry, MODFLOW treats them as no flow areas and there can be a ripple effect that causes additional cells going dry. Since MODFLOW is not very efficient at rewetting dry cells when they should be resaturated, this ripple effect has caused permanent changes in the model. Over a long time the model would be expected to come to a steady state condition. The tables prepared in response to comment MuK 73 indicate

that even at the end of recovery, the model is not yet at the new equilibrium that would eventually be reached with the additional dry cells.

- 2) General Head Boundaries – The amount of water going into and out of the model domain via the general head boundaries remains relatively consistent throughout the modeled operations. This is reasonable because the general head boundaries are a long distance from the mining area and would not be expected to be significantly impacted by mining. In addition, the total volume of outflows from the general head boundaries generally balances the inflows from other sources. This is conceptually correct.
- 3) River Boundaries – The conceptual inflow and outflow from the coals to the Tongue River are discussed in detail in comment MuK 56. Groundwater Vistas does apply the River Boundary cells to the bottom of the layer in which they are inserted. The Tongue River Boundary cells were inserted into the model up to the point where Goose Creek joins the Tongue River. At that location the top of the Carney coal is estimated to be approximately 100 feet below the surface. Since the alluvium is generally much thinner in this area and there is actually a large amount of low permeability strata between the Tongue River alluvium and the coal (described in comment MuK 56), the model likely overestimates the contribution of the River boundary cells to the model because the river boundary cells provide a direct connection (in the model) between the river and the coals where there is not a physical connection. This conservatively over estimates how much water discharges from the River Boundary Cells to the model.
- 4) Drains – One drain was placed into layer 1 in the northeast side of the model domain to allow water to drain from the model where the Tongue River crosses the domain boundary. This represents the amount of water in layer 1 lost to the surface water system. The total discharge from this drain during steady state conditions is 560 ft³/day (2.9 gpm). While no physical measurements were (or can be) made to verify this amount, conceptually it is reasonable. The strata along the Tongue River likely does discharge a small amount of water to the River where it cuts through the numerous perched sand lenses that become saturated from natural recharge. There is no evidence of large groundwater discharges to the Tongue River in this area so it makes sense that a small discharge to the River (rather than a large discharge) would be observed in the model. During mining, drains were added to the model to remove water from the mine pits. The tables indicate that during mining the discharges from the drains do increase as expected. After mining is complete, discharges from the drains return approximately to premining levels which is conceptually correct.
- 5) The recharge amount used in the model stays at relatively the same level throughout the simulations. Total recharge across the model area is approximately 28 gpm. As is described in comment #65 the recharge rates are reasonable based on available studies.

Comment MuK 74 – Round 2

Response conditionally accepted. Please incorporate the context of the response into the permit application. In addition, clarify the reason for increased recharge from the steady state to transient models (5,138 vs 5,434 cu.ft/day).

Response MuK 74 – Round 2

Addendum MP-3 Section 4.10 was updated to include the context of the Round 1 response. The model was also reviewed to determine why there was a slight difference in the recharge rates during the steady state simulation and the transient simulation period (5,168 vs 5434 cu ft/day). During the review of the model it was found that one of the recharge options in the MODFLOW options dialogue box was incorrect. The check box in the dialogue box entitled “Apply recharge from stress period 1 to all stress periods” had not been checked. After checking the option, the model was rerun and during the subsequent run the recharge was the same during the steady state portion and the transient portion of the model. Other minor changes in the mass balance numbers presented in Table 4.10-1 were also noted and the numbers were updated to reflect the model predicted values after changing the recharge settings.

Comment MuK 75 – Round 1

Mine Plan, Addendum MP-3 Groundwater Model, 75. Page Addendum MP-3-40 states, “Due to a system of thin aquifers with similar sources and sinks and homogeneous hydraulic conductivities, the head values of the steady-state model were nearly identical between the separate coal layers as noted in Table 4.7-1.” Please clarify whether this statement implies that the interburden (where present) between the coal seams is not a confining unit. (MK)

Response MuK 75 – Round 1

This statement is an observation only based on review of modeled values and does not suggest a lack of confinement exists. Pumping tests conducted in separate aquifers demonstrated that the interburden provides confinement between the Carney and Masters aquifers as described in Section D6-8.3.2.3 of Appendix D6. In addition, Table 4.7-1 of Addendum MP-3 shows that at each cluster where both coal seams contained measureable water, the difference in measured water levels between the coal seams was higher than the modeled difference. This suggests that the vertical hydraulic conductivity assigned to the interburden in the model may be higher than the actual hydraulic conductivity of the interburden in the field. The use of a higher hydraulic conductivity for the interburden in the model will overestimate the drawdown in the other coal seam therefore, the predicted drawdown will be conservative.

Comment MuK 75 – Round 2

Response conditionally accepted. Please incorporate the context of the response into the permit application. (MK)

Response MuK 75 – Round 2

The last sentence in the first paragraph of Addendum MP-3 Section 4.7.2 has been revised for clarification. The Round 1 responses have been incorporated into Addendum MP-3.

Comment MuK 76 – Round 1

Mine Plan, Addendum MP-3 Groundwater Model, 76. In figures 4.7-1, 4.7-2 and 4.7-3, please consider including the observed/interpreted water level contours and the measured water level elevations. This will enable to visually evaluate the observed vs. simulated water levels. (MK)

Response MuK 76 – Round 1

Figures 4.7-1, 4.7-2, and 4.7-3 of Addendum MP-3 have been updated to include both observation wells and observed elevations as well as observed potentiometric contours. Please note that in response to Comment MuK 71 an additional figure was added to this section (Figure 4.7-1) and these figures have since been renumbered to 4.7-2, 4.7-3, and 4.7-4.

Comment MuK 76 – Round 2

Response conditionally accepted. Please incorporate the context of the response into the permit application. (MK)

Response MuK 76 – Round 2

The figures previously added to the report (4.7-2, 4.7-3, and 4.7-4) during the first round of comment responses incorporate the context of the Round 1 response into Addendum MP-3.

Comment MuK 77 – Round 1

Mine Plan, Addendum MP-3 Groundwater Model, 77. Page Addendum MP-3-45 states, “.....and if CBM production ceases, recovery rates will likely be higher than estimated in the model.” Please clarify if this statement implies that currently, there are CBM wells that are operational in the area and are pumping out groundwater. (MK)

Response MuK 77 – Round 1

Although substantially less than past years, some CBM wells in the area are still producing groundwater. Since CBM production has been ongoing for the last 15+ years the CBM operations have significantly lowered the water levels in the coals as is

noted in the report. Records of groundwater withdrawals can be found on the Wyoming Oil and Gas Conservation Commission's (WOGCC) online database at: wogcc.state.wy.us. According to WOGCC records there has been no groundwater production associated with CBM in Townships 57 and 58N Range 84W since 2012. However production is still occurring in Townships 57 and 58N Range 83W as well as Township 56N Range 83 and 84W. The portions of the model domain where CBM production may occur are located in Townships 56 and 57N Range 84W.

Comment MuK 77 – Round 2

Response conditionally accepted. Please incorporate the context of the response into the permit application. (MK)

Response MuK 77 – Round 2

Additional text was added to Addendum MP-3 Section 2.3 to describe the timeframe over which CBM wells have been in operation. Also Addendum MP-3 Section 4.8.1 was updated to further capture the context of the Round 1 response.

Comment MuK 78 – Round 1

Mine Plan, Addendum MP-3 Groundwater Model, 78. Please consider removing the model sensitivity to storage coefficients and porosity. Steady state groundwater model equations do not include these parameters in any of the model calculations. (MK)

Response MuK 78 – Round 1

As noted in this comment, the final model did not include a transient calibration and a sensitivity analysis on storage coefficient and porosity is not appropriate. The section and discussion regarding model sensitivity to the storage coefficient and porosity has been updated and removed as appropriate.

Comment MuK 78 – Round 2

Response conditionally accepted. Please incorporate the context of the response into the permit application. (MK)

Response MuK 78 – Round 2

Addendum MP-3 Section 4.8.5 (last two sentences) was previously updated during the first round of comment responses to incorporate the context of the Round 1 response.

Comment MuK 79 – Round 1

Mine Plan, Addendum MP-3 Groundwater Model, 79. Please clarify if the faults in the model and their parameters were considered in any of the sensitivity analyses. If not, please consider performing a detailed and thorough sensitivity analysis, as the faults appear to influence the drawdowns simulated by the groundwater model. (MK)

Response MuK 79 – Round 1

The faults do influence the drawdowns and flow patterns simulated in the groundwater model. However, as noted in the response to comment MuK 51 the displacement observed in the faults roughly 5 times as thick as the modeled coal seams. Given the fact that the dominant lithology in the area is low permeability claystone/siltstone, it is very likely that where faulting has occurred the displacement has resulted in coals being immediately adjacent to the low permeability strata. Therefore the faults are assumed to be hydrologic barriers to water flow. Based on the best available mapping, these faults have been placed into the model. Because the faults are physical parameters that were developed along with development of the geological model (i.e. elevations and thicknesses of the geological layers), a sensitivity analysis was not performed on the faults.

Part of the reason that the faults influence the groundwater responses in the groundwater model to the degree that they do is because of the CBM impacts. Because the CBM operations have significantly lowered the water levels in the coal seams, the faults create a shadow effect that results in many of the cells immediately downstream of the faults going dry. If there had not been any CBM dewatering operations performed in the coals, the water levels would be significantly higher and the effects of the faults would not be as pronounced.

Comment MuK 79 – Round 2

Response conditionally accepted. Please incorporate the context of the response into the permit application. (MK)

Response MuK 79 – Round 2

The context of the Round 1 response has been added to Addendum MP-3 Section 2.4.1.

Comment MuK 80 – Round 1

Mine Plan, Addendum MP-3 Groundwater Model, 80. In addition to the simulated drawdown maps, please consider providing hydrographs at strategically selected locations. This will enable a better presentation of the impacts over time. (MK)

Response MuK 80 – Round 1

As suggested, Appendix A has been added to Addendum MP-3 which depicts the modeled water elevations during the model simulation period at all the water supply wells identified within the model domain (CBM wells excepted) and at selected alluvial target locations within the model domain.

Comment MuK 80 – Round 2

Response not accepted. Appendix A is missing with the electronic files provided to the Cheyenne Office. The hydrographs will be reviewed after the receipt of this Appendix A. (MK)

Response MuK 80 – Round 2

All the appendices for Addendum MP-3 for the first round of comment responses were inadvertently left out of the submittal. Both Appendix A and B are included in this round of comment responses.

Comment MuK 81 – Round 1

Mine Plan, Addendum MP-3 Groundwater Model, 81. Please clarify if the three wells listed in Table 4.9-1 are the only wells considered for the analysis. Also, provide a discussion on the methodology to narrow down the analysis from several wells shown in the groundwater rights maps to these three wells. (MK)

Response MuK 81 – Round 1

Additional wells beyond those originally presented in Table 4.9-1 were considered in the analysis. Table 4.9-1 has been updated to include all the wells considered in the analysis. To determine which wells were included in the analysis, completions were compared to modeled surfaces to estimate which formation in which the well was completed. Those thought to be completed in the Carney/Masters sequence were included. Please note that the wells included in Table 4.9-1 error on the side of being over inclusive. Some of the wells are believed to be completed in multiple zones but the analysis assumes that they are only completed in the coal seams of interest. In addition, the well depths were determined based on the State Engineer's database and in many cases well depth data was left blank or was questionable. If there was a question whether a well was actually completed in the coal aquifer of interest the well was assumed to be completed in the coal. Therefore, the well list may include some wells that are not completed in the coals of concern.

Comment MuK 81 – Round 2

Response conditionally accepted. Please incorporate the context of the response into the permit application. (MK)

Response MuK 81 – Round 2

The context of the Round 1 response was added to Addendum MP-3 Section 4.9 during the first round of comment responses. In addition to updating Table 4.9-1, the text was also updated with verbiage from the round 1 comment response to describe how the wells were chosen for inclusion into the model.

Comment MuK 82 – Round 1

Mine Plan, Addendum MP-3 Groundwater Model, 82. Please provide (or reference) a discussion about the three wells listed in Table 4.9-1, their depths, screened intervals and other pertinent information. (MK).

Response MuK 82 – Round 1

Table 4.9-1 has been updated to include total depth as well as the screen intervals for all the wells. Additional details on the wells can be found in Adjudication Appendix B.

Comment MuK 82 – Round 2

Response conditionally accepted. Please incorporate the context of the response into the permit application. (MK)

Response MuK 82 – Round 2

Addendum MP-3 Table 4.9-1 was previously updated as noted in the round 1 comment responses. Between the updated text in response to comments and this table, the context of this comment response have been captured in Addendum MP-3.

Comment MuK 83 – Round 1

Mine Plan, Addendum MP-3 Groundwater Model, 83. Page Addendum MP-3-60 states, “ To measure the impacts to the Tongue River and Goose Creek, a series of targets were placed along these drainages in Layer 1” Please define the term target. Also, clarify if these targets are located in the alluvial aquifer. (MK)

Response MuK 83 – Round 1

The targets as used in Groundwater Vistas are simply locations where heads are measured and compared with measured heads (if there are any available). Ground Water Vistas generates a hydrograph throughout the transient period of mining and recovery for each target. These targets were placed in Layer 1 to estimate the impacts of mining to surface water bodies. These targets are located where the alluvial aquifer is simulated in Layer 1. Targets representing existing well locations were also put in layers 4 and 6 as well as discussed in Comment MuK 81.

Comment MuK 83 – Round 2

Response conditionally accepted. Please incorporate the context of the response into the permit application. (MK)

Response MuK 83 – Round 2

Additional text was added to Addendum MP-3 Section 4.9 to define what a target is. Also, the inclusion of Appendix A has been included with this round of comment

responses, which was inadvertently left out of the first round of comments. The appendix should also help incorporate the context of the Round 1 response.

Comment MuK 84 – Round 1

Mine Plan, Addendum MP-3 Groundwater Model, 84. Page Addendum MP-3-60 states, “These targets demonstrate that the estimated maximum impact to Tongue River Alluvium is conservatively estimated to reach 2.5 feet drawdown near the river.” Please expand the discussion on the impacts to surface water flows including translating the drawdown to an estimated decrease in the groundwater baseflows to Tongue River and Goose Creek. (MK)

Response MuK 84 – Round 1

As shown on the hydrographs included in Appendix A, the maximum water level decline of 2.5 feet to the Tongue River alluvium occurred permanently and was caused by dry cells. This 2.5 foot drawdown is not believed to be a real drawdown because it resulted from model instability rather than a real predicted result. If the model did not have dry cells that caused permanent changes in the model, the maximum drawdown due to mining is estimated to be less than 0.5 feet.

As noted in the response to comment MuK 56, the model estimates the coals will contribute a relatively insignificant amount to water to the base flow of the Tongue River. As noted in Comment MuK 73 in the steady state model the River contributed approximately 2,569 cubic feet per day to the model while the river received 410 cubic feet per from the model. The net result is that in the steady state model 2,159 cubic feet per day (11.2 gpm) was contributed from the river to the model. For comparison, at the end of mining, the River contributed 2,714 cubic feet per day to the model and received 363 cubic feet per day from the model. The net result at the end of mining was that 2,351 cubic feet per day (12.2 gpm) was contributed from the River to the model. Over the simulated mining period the model estimates that the increased contribution of flow from the River to the model will be 1 gpm which represents approximately a 9% increase in flow.

Please note that in Groundwater Vistas the river boundary cells go to the bottom of the layer which likely overestimates the impacts to the River. Within the eastern portion of the model domain the coal aquifers can be 200 or more feet below the level of the river while the Tongue River Alluvium is estimated to be between 15 and 30 feet thick based on the thickness of alluvial wells constructed by Big Horn Coal in the area. Therefore, within the eastern portion of the model domain, the coals may be significantly below the alluvium and no River boundary was included in this portion of the model. However, there is an intermediary region where the actual level of the River is some 30-70 feet higher than the coals. At these locations the River boundary cells were left on to conservatively show the impacts to the river. However, the alluvium in these areas is likely thinner than 40-70 feet. As a result, the model allows the River to

directly contribute water to the coals below and the model is expected to overestimate the impacts to the Tongue River in these locations.

Comment MuK 84 – Round 2

Response conditionally accepted. Please incorporate the context of the response into the permit application. The comment will be reviewed after the receipt of Appendix A. (MK)

Response MuK 84 – Round 2

Additional text was added to Addendum MP-3 Sections 2.6.3 and 4.9 to incorporate the context of the Round 1 response. Also, text was added to Section 4.10 in response to Comment MuK 73 which helps capture the context of the Round 1 response.

Comment MuK 85 – Round 1

Mine Plan, Addendum MP-3 Groundwater Model, 85. Please provide a statement on any hydrologic impacts predicted by the groundwater model to areas outside the Brook mine permit boundary. (MK)

Response MuK 85 – Round 1

The only impacts outside of the Brook Mine Permit Boundary would be observed at the existing water supply wells. Table 4.9-1 describes the estimated impacts at all the water supply wells in the Model domain that will be impacted both inside and outside of the Brook Mine Permit Boundary. Please note that most of these wells are located outside of the Brook Mine permit boundary. As shown on Table 4.9-1 the largest model predicted impact seen at any existing well outside of the Brook Mine Permit boundary is 20 feet which would be observed at P48251W. As shown in the hydrograph for this well in Addendum MP-3 Appendix A, this impact is estimated to be short lived (approximately 4 years). Model predicted drawdowns at the rest of the wells are less than 5 feet. At many of the wells predicted drawdowns are less than 1 foot over the life of the mine.

Comment MuK 85 – Round 2

Response conditionally accepted. Please incorporate the context of the response into the permit application. The comment will be reviewed after the receipt of Appendix A. (MK)

Response MuK 85 – Round 2

Additional text to capture the context of the Round 1 response has been added to Addendum MP-3 Section 4.11.

Comment MuK 86 – Round 1

Mine Plan, Addendum MP-3 Groundwater Model, 86. Please provide a discussion on the simulated impacts caused by mining to surface water – groundwater interaction within the model domain. (MK)

Response MuK 86 – Round 1

Please see the response to comment MuK 84.

Comment MuK 86 – Round 2

Response conditionally accepted. Please incorporate the context of the response into the permit application. The comment will be reviewed after the receipt of Appendix A. (MK)

Response MuK 86 – Round 2

Additional text has been added to Addendum MP-3 to incorporate the context of the Round 1 response (also see response to MuK 84).

Comment MuK 87 – Round 1

Mine Plan, Addendum MP-3 Groundwater Model, 87. Please compare the model simulated water balance between pre-mining, during mining and post mining conditions. Consider including a table that presents the water balance during select periods showing the flows from all sources and discharges to all the sinks within the model domain. Provide a detailed discussion addressing any changes in the model simulated water balance between pre-mining, during mining and post mining conditions. (MK)

Response MuK 87 – Round 1

Please see responses to comments MuK 73 and MuK 74. A detailed discussion is included in the responses to these comments.

Comment MuK 87 – Round 2

Response accepted. (MK)

Response MuK 87 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MuK 88 – Round 1

Mine Plan, Addendum MP-3 Groundwater Model, 88. In addition to the maps presented on the recovery estimates, please provide hydrographs at strategically selected locations. This will enable a better presentation of recovery over time. (MK)

Response MuK 88 – Round 1

As described in response to Comment MuK 80, an appendix (Appendix A) has been added to Addendum MP-3 which depicts the modeled water elevations at a number of well and target locations within the model domain.

Comment MuK 88 – Round 2

Response not accepted. Appendix A is missing with the electronic files provided to the Cheyenne Office. The hydrographs will be reviewed after the receipt of this Appendix A. (MK)

Response MuK 88 – Round 2

Appendix A will be included with this second round of comment responses.

Comment MuK 89 – Round 1

Mine Plan, Addendum MP-3 Groundwater Model, 89. The modeling documentation lacks discussion on the backfill aquifer. In the recovery model, please clarify how the model treats the backfill aquifer (spoils aquifer) and its resaturation. Please provide a discussion (or reference) to the hydraulic properties of the backfill materials used to create the backfill aquifer and the aerial extent of the backfill aquifer. (MK)

Response MuK 89 – Round 1

Mine Plan Section 4.10 discusses the backfill aquifer. Within the areas where the highwall miner is used for mining, an open cavern will be left behind. Unless the mined out areas collapse, the backfill aquifer is essentially an open cavern with 100% porosity. The modeling software used for this effort does not have the ability to transiently change aquifer properties, and during resaturation of the mined areas the assigned storage coefficients remained the same as the original aquifer properties. As a result, the model may underestimate the time that it takes for the aquifer to resaturate where the mining methods have increased the porosity and thereby resaturation volume. Inversely, in the slots mined with traditional open cut mining techniques, coal will be removed and replaced with overburden material. In these locations the backfilled material is expected to have poor aquifer characteristics because it will primarily be a mix of fine grained clay and silt with some sand. In these areas the aquifer will essentially be removed. Again, the modeling software does not have the ability to transiently change aquifer properties and this effect was ignored during the modeling.

Figure MP-3-4.9-1 shows the areal extent of mining and Addendum MP-3 Figures 4.7-2, 4.7-3, and 4.7-4 depict the areas that were modeled as dry within the Brook Mine permit area. It is important to note that a large percentage of the area that will be mined is dry prior to the initiation of mining. In addition, figures in MP-3 Section 4 show that after mining, some of the areas go dry and do not rewet. In the areas where slots are excavated this prediction is reasonable because the backfill will act as an

aquitard with poor aquifer characteristics. A layer by layer review of the mined area at the end of mining was conducted to determine conceptually how ignoring the changes in the coal porosity and changes in backfill material may have impacted the model predictions.

Upper Carney-With exception of a very small portion of mine block 9 (Figure MP-3-4.9-1). The entire Upper Carney coal is unsaturated. Therefore, there is no resaturation and no recovery. The model estimates are appropriate for the Upper Carney coal.

Lower Carney - Most of the mine blocks as well as the open slots are dry in the Lower Carney at the end of mining. Only mine blocks 1, 2, 5, 9, and 10 had substantial portions that were saturated. As a result, the potential error created by transient aquifer properties in model predicted resaturation rates to the underground mined coal blocks in the Lower Carney coal, if any, is expected to be very low. With the exception of the slots cut to mine blocks 5, 9, and 10, all of the slots cut to mine the Carney Coal will also be dry; therefore, resaturation at those locations will not substantially impact model predictions. The slots cut for blocks 9 and 10 generally run parallel to the direction of water flow. If the coal in these locations is completely removed and replaced with an aquitard, the impact to the aquifer will be minimal because water will simply flow around the portion of the backfilled aquifer. The open pit slot cut adjacent to mine block 5 does run perpendicular to the direction that water is flowing and may change the groundwater flow patterns in this area. However, the location of the slot is near the groundwater divide caused by the fault just to the south. Therefore, this slot is not expected to substantially impact groundwater flows either

Masters - Most of the Masters Coal mine blocks are saturated. Only blocks, 4, 5, 6, and 7 have substantial areas that are not saturated. In the mine blocks where underground mining techniques are employed the model may underestimate the time it takes for resaturation to occur because the storage coefficient is not updated to account for the increased porosity of the mined out block. However this resaturation time will be balanced out by the fact that there will be no aquifer replaced in the open cuts to resaturate, and thus these areas would not resaturate as the model predicts. With the exception of the open cut for mine block 5, all of the open cuts are oriented so that they will have minimal impacts on the natural flow gradients in the wellfield or are located within or adjacent to dry areas. As previously noted, the open cut near mine block 5 is located adjacent the drainage divide so it will not significantly change the water flow within the aquifer.

Due to the fact that much of the mined area is dry, the actual area mined that is below the water table is relatively small, and that the open cuts are oriented such that they have minimal impacts to groundwater flow, the recovery analysis performed by the model is reasonable. Also, as noted, the areas where underground mining is employed and the model overestimates the rate at which the aquifer is resaturated are counterbalanced by the areas of open cuts where the aquifer will not be replaced and the model underestimates the time it takes for the strata to resaturate.

Comment MuK 89 – Round 2

Response conditionally accepted. Please incorporate the context of the response into the permit application. (MK)

Response MuK 89 – Round 2

Text from this comment response was added to Addendum MP-3 Section 4.10 to capture the context of the Round 1 response.

Comment MuK 90 – Round 1

Mine Plan, Addendum MP-6 Subsidence Control Plan, 90. Figure MP6.1-1 shows “Monarch Seam Surface Only Mining”. Please clarify if the Monarch seam is targeted for mining in the appropriate sections of Appendix D5, Appendix D6 and mine plan. (MK)

Response MuK 90 – Round 1

The appropriate sections of Appendix D5 and D6 have been updated.

Comment MuK 90 – Round 2

No comment received.

Response MuK 90 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Reclamation Plan

Comment BJ 57 – Round 1

Volume 12, Reclamation Plan, Section RP.8.3, Pg. RP-37, The narrative describes the sources of recharge to the coal seams. One lithology mentioned as a positive recharge contributor is the overlying burn, scoria, or clinker material, generated by coal fires. It is a common misunderstanding that the scoriaceous material recharges coal or overburden. It would appear, at first glance, that the broken, vuggy material would be capable of conveying large amounts of water from the surface to materials beneath. That is not the case, however, as the coal/scoria interface has a zone of partially metamorphosed coal ash that lies between the burned material and the remnant coal. I have seen this zone many times during my 25 year career in the coal mines when supervising coal and overburden removal. This zone is characterized by a white to light gray, clay band that ranges in thickness from 6 inches to a foot or more. It is the same high silica ash found in the bottom ash of the local power plants that burn PRB coal. This ash band acts as an aquaclude, preventing water from entering or escaping the coal. Because of this, any recharge models that were run using the scoria as a

recharge source must be reevaluated using new layers that do not include the scoria. Rerun recharge models if needed.

Response BJ 57 – Round 1

It is true that the partially metamorphosed coal ash layer between the coal and the scoria has the potential to limit recharge from the scoria to the coal. However, even though the permeability of this layer is low, there will be areas where the coal has collapsed or other geologic variances such as a thinning section which will allow for water from the scoria to come into contact with the coal. Therefore, even though the scoria may not be directly in contact with the coal, there is still a recharge component to the scoria, albeit; significantly lower than if the scoria and coal were in direct contact. This low recharge rate is reflected in the groundwater model. The calibrated recharge rate used in the groundwater model for the areas covered by scoria was 0.35 inches per year. For comparison purposes, the recharge rates assigned to the Carney and Masters outcrops, where no scoria was present, varied from 0.2 to 0.88 inches per year. Considering that in the scoria areas a very large percentage of direct precipitation is expected to infiltrate into the scoria, the 0.35 inch per year recharge rate represents a significant reduction in the amount of water available (which could be upwards of 10 inches per year) to infiltrate into the coal seams. Therefore, the calibrated recharge rate included in the groundwater model does take into account the low permeability layer between the coal and the scoria.

Comment BJ 57 – Round 2

No comment received.

Response BJ 57 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment BJ 58 – Round 1

Volume 12, Reclamation Plan, Section RP.8.3, Pg. RP-39, The second sentence in the first paragraph has an odd, difficult to understand syntax. Please rewrite the sentence for clarity.

Response BJ 58 – Round 1

Revised page RP-39 text as requested. The sentence will now read “The mine will consult with WDEQ/LQD to determine the number of spoil wells that will be tested”.

Comment BJ 58 – Round 2

No comment received.

Response BJ 58 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment BJ 65 – Round 1

EXHIBITS, Reclamation Plan, Exhibit RP.6-1, The permit boundary on this map is inaccurate. Please recreate the permit boundary layer.

Response BJ 65 – Round 1

Revised Exhibit RP. 6-1 as requested.

Comment BJ 65 – Round 2

No comment received.

Response BJ 65 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment BJ 66 – Round 1

EXHIBITS, Reclamation Plan, Exhibit RP.8-3 and Exhibit RP.8-4, The post mining potentiometric surfaces for the Carney and Masters beds are suspended in mid-air over Slater Creek. Please terminate the contour lines at the outcrop or use a dotted line to indicate the calculated potentiometric surface.

Response BJ 66 – Round 1

Revised Exhibit RP.8-3 and RP.8-4 as requested.

Comment BJ 66 – Round 2

No comment received.

Response BJ 66 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment DS 24 – Round 1

Reclamation Plan, Section RP.4. This brief section discusses what is considered spoil material to be removed during mining. The section states that spoil does not include coal, but there are some very narrow coal seams with numerous stringers of clay or of such low quality that will probably not be mined and will be placed in backfill. Also, the top layers of most coal seams are quite “dirty” and would also be removed and backfilled. In order to provide the readers with a more accurate description of the mining and reclamation processes, please revise the text to show that some coal-laden materials will also be considered spoils and will be backfilled during reclamation.

Response DS 24 – Round 1

Revised text as requested.

Comment DS 24 – Round 2

No comment received.

Response DS 24 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment DS 25 – Round 1

Reclamation Plan, Section RP.5.2. Please provide a description of the methods used to control topsoil depth during replacement. Most mining operations use stakes with surveyed marks as guides for controlling soil application depths.

Response DS 25 – Round 1

See Section RP.5.4 for a description of the methods used to control topsoil depth during replacement.

Comment DS 25 – Round 2

No comment received.

Response DS 25 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment DS 26 – Round 1

Reclamation Plan, Section RP.5.4. Variability in topsoil depth cannot be avoided due to limitations imposed by the equipment used and the pre-application preparations which may include ripping of the compacted overburden surface. Typically, the depth of topsoil application may vary 25%, but the average depth should be closely monitored and should not exceed the average availability. Also, because some soils exhibit unsuitable characteristics and will not be used for reclamation, discussion of the use of substitute topsoil materials is warranted in this section.

Response DS 26 – Round 1

Revised text as requested. Added discussion about substitute topsoil being an option if not enough suitable topsoil is salvaged.

Comment DS 26 – Round 2

No comment received.

Response DS 26 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment DS 27 – Round 1

Reclamation Plan, Section RP.5.6. Sediment control measures will be required to prevent untreated runoff from exiting reclaimed lands onto adjacent native lands. Please provide a discussion of the sediment control measures to be used.

Response DS 27 – Round 1

Revised text as requested.

Comment DS 27 – Round 2

Response is not adequate. Use of ASCMs during mining and following reclamation as sediment control must follow the requirements of Guideline 15. Brook Mine must provide some detail about how the ASCMs will be sized, certified, permitted and terminated. ASCMs may not be used within ½ mile of the Tongue River. Please provide requested information in the Mine Plan.

Response DS 27 – Round 2

In response to Comment MK 116 (Round 2), ASCMs have been removed as the primary form of sediment control within half of a mile of the Tongue River and Goose Creek. In the place of ASCMs within the half-mile buffer, sediment impoundments have been designed. These designs are now provided in Addendum MP-2. Design standards for ASCMs, inspection and maintenance standards for ASCMs, and ASCM removal and site reclamation standards are provided in Addendum MP-1.

Comment DS 28 – Round 1

Reclamation Plan, Section RP.8.2. This section states only that impoundments will require Landowner, LQD and SEO approval. Prior to construction of post mining impoundments, SEO approved plans for the impoundments must be submitted for inclusion in the permit Reclamation Plan. Please include a statement that a Reclamation Plan revision will be approved by the LQD prior to construction of impoundments.

Response DS 28 – Round 1

Revised Section RP.8.2 to include a statement regarding LQD approval before the construction of postmine impoundments.

Comment DS 28 – Round 2

No comment received.

Response DS 28 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment DS 29 – Round 1

Reclamation Plan, Section RP.11.1. The primary final land use for the permitted acreage will be grazing and wildlife. Only areas where the current use is industrial will remain industrial land uses after mining is completed. Therefore, in order for any constructed buildings or railroad access to remain following mining, and a permit revision to change the land use will be required. It is not just a matter of demonstrating usefulness to the LQD and receiving landowner consent. This will be a major revision to the permit that will require public notice. Clarification should be provided concerning the steps involved to allow building to remain.

Response DS 29 – Round 1

Revised text as requested. Eliminated discussion in Section RP.11 regarding leaving any buildings, facilities, and equipment following completion of mining.

Comment DS 29 – Round 2

No comment received.

Response DS 29 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment DS 30 – Round 1

Reclamation Plan, All Mine Plan Maps with progressions must show the actual years of the initial disturbance or mining activity, or the progression must be linked to a specific year in Reclamation Plan text. The maps must also include the contour interval.

Response DS 30 – Round 1

See Mine Plan MP.1.6 for a description of permit terms and initial year. Revised text in Reclamation Plan Section RP.13 to reference Mine Plane MP.1.6. Revised Exhibit RP.5-1 adding “Note: Year 3 corresponds to the year 2019” in Legend.

Comment DS 30 – Round 2

No comment received.

Response DS 30 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment DS 33 – Round 2 (New Comment)

New Comment: Reevaluate the average topsoil replacement depth based on salvage depth estimates shown in Appendix D7 and expected disturbance of each soil series during mining. 18 inches may not be adequate.

Response DS 33 – Round 2 (New Comment)

The topsoil depth has been revised in the first paragraph of Section RP.5.4.

Comment DE 19 – Round 1

Reclamation Plan, Section RP.5.1, page RP-6 – RAMACO states that the contoured surface will be scarified or ripped, if necessary. The mine should commit to scarifying or ripping all surfaces prior to topsoil replacement.

Response DE 19 – Round 1

Revised text as requested. Remove “if necessary” from sentence.

Comment DE 19 – Round 2

No comment received.

Response DE 19 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment DE 20 – Round 1

Reclamation Plan, Section RP.5.6, page RP-8 - The 1st sentence of the 2nd paragraph doesn't make sense. Please correct.

Response DE 20 – Round 1

Revised text as requested. The sentence now reads “Rills and gullies occurring in redistributed soil precluding the achievement of the approved postmining land use or the reestablishment of vegetative cover will be rectified”.

Comment DE 20 – Round 2

No comment received.

Response DE 20 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment DE 21 – Round 2 (New Comment)

There still has been no Reclamation Bond Estimate submitted at this time so there is nothing to review.

Response DE 20 – Round 2 (New Comment)

Reclamation Bond calculations are pending.

Comment JJ 5 – Round 1

Reclamation Plan, 5. Exhibit RP 6-1 also displays permit boundary discrepancies in regards to the section lines on it and those located on the Adjudication Exhibit 1. Please update accordingly.

Response JJ 5 – Round 1

See response to comment BJ 65. Revised Exhibit RP.6-1 as requested.

Comment JJ 5 – Round 2

No comment received.

Response JJ 5 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment JJ 6 – Round 1

Reclamation Plan, 6. Table RP 6-1 states that there are 11.6 acres of wetlands and other aquatic resources. Please discuss where these acres are to be reclaimed and show them on the Exhibit RP. 6-1 which displays the reclaimed vegetation communities and their locations.

Response JJ 6 – Round 1

Revised Section RP.9 to include reference to Exhibit RP.6-1 for location of reclaimed wetlands and OAR. Revised Exhibit RP.6-1 to include reclaimed wetlands and OAR locations.

Comment JJ 6 – Round 2

No comment received.

Response JJ 6 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 24 – Round 1

Reclamation Plan, Section RP.10 Reestablishment of Essential Hydrologic Functions and Agricultural Utility on Alluvial Valley Floors, Assuming the Tongue River is an AVF, this section should discuss how the essential hydrologic functions will be maintained and/or reestablished, as required by LQD Coal Rules and Regulations, Chapter 5, Section 3(c)(ii). As noted in Comment No. 21, the essential hydrologic functions of the Tongue River AVF need to be identified and a monitoring system needs to be installed. (MDK)

Response MK 24 – Round 1

Revised text as requested in Section RP.10.

Comment MK 24 – Round 2

Response not accepted. Please provide a more thorough discussion for each identified essential hydrologic function to demonstrate that the functions will be maintained throughout the mining operation. In particular, since mining is predicted to cause some amount drawdown in the Tongue River alluvium (Mine Plan Addendum MP-3), this needs specific discussion to demonstrate that the essential hydrologic functions will be maintained and/or reestablished.

Please also provide more detail on the plan and frequency of analyzing the aerial imagery. In addition, please note that given that Mine Plan Addendum MP-3 predicts some amount of drawdown in the alluvium of the Tongue River, installation of alluvial monitoring wells would be required to monitor the AVF. Otherwise there will be no way to assess the validity of the predicted drawdowns. Please provide a more detailed plan for installing the alluvial monitoring well(s). (MDK)

Response MK 24 – Round 2

The text at the end of Section RP.10 has been revised to include the pertinent details on the essential hydrologic function monitoring plan. The plan includes obtaining infrared photography every 5 years and photo documentation annually, as well as installing and monitoring alluvial wells on the Tongue River and Goose Creek during mining and reclamation periods. Exhibit RP.8-5 has been revised to include the proposed locations of the alluvial wells. Also, Guideline 9 Alluvial Valley Floors has been added to the Reference Section RP.17.

Comment MK 25 – Round 1

Reclamation Plan, Section RP.10 Reestablishment of Essential Hydrologic Functions and Agricultural Utility on Alluvial Valley Floors, 25. As noted in Comment No. 21, the adjacent Goose Creek AVF also needs a monitoring system to demonstrate essential hydrologic functions are maintained and/or reestablished as required by LQD Coal Rules and Regulations, Chapter 5, Section 3(c)(i) and (ii). (MDK)

Response MK 25 – Round 1

Revised text as requested in Section RP.10.

Comment MK 25 – Round 2

Response not accepted. Please revise the discussion on the Goose Creek AVF monitoring system as per the response to Comment MK 24. (MDK)

Response MK 25 – Round 2

See response MK 24 for discussion on the Goose Creek AVF monitoring system.

Comment MK 26 – Round 1

Reclamation Plan, Section RP.10 Reestablishment of Essential Hydrologic Functions and Agricultural Utility on Alluvial Valley Floors, 26. This section may also need to be addressed if the LQD finds that other AVFs exist on or near the permit area. If AVFs are determined to be present, the essential hydrologic functions must be maintained and/or reestablished as required by LQD Coal Rules and Regulations, Chapter 5, Section 3(c)(i) and (ii). (MDK)

Response MK 26 – Round 1

Revised text as requested in Section RP.10.

Comment MK 26 – Round 2

No comment received.

Response MK 26 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 75 – Round 1

Reclamation Plan, Section RP.3.3 Postmine Slope Analysis, 49. Please provide a discussion that compares the pre-mine vs. post-mine slope characteristics. A table would be helpful that compared the minimum, maximum, and average slopes under pre-mine and post-mine conditions. (MDK)

Response MK 75 – Round 1

Added Table RP.3-1 comparing premining and postmining slopes. Updated Section RP.3.3 of text to include reference to the new table.

Comment MK 75 – Round 2

No comment received.

Response MK 75 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 76 – Round 1

Reclamation Plan, Section RP.3.5 Drainage Reestablishment, 50. It is stated that mining will disturb portions of the Slater Creek channel and the reclamation will entail reconstruction. However, the Mine Plan PHC (Section MP.6.1) stated that Slater Creek

“will still flow naturally around the trench”, and “Because Slater Creek’s flow will not come into contact with mining activities, no impact will be made to water quality”. Please provide a clear and explicit description of the extent of direct disturbance to the Slater Creek channel. This description should be consistent between the Mine Plan and Reclamation Plan. (MDK)

Response MK 76 – Round 1

As stated in the revised Section MP.6.1 of the Mine Plan, the only anticipated surface disturbance to Slater Creek during mining will be the redirection of the channel through a culvert under a proposed haul road. No text was edited in response to this comment.

Comment MK 76 – Round 2

No comment received.

Response MK 76 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 77 – Round 1

Reclamation Plan, Section RP.4.2 Mitigation of Unsuitable Material , 51. Minor channels are defined as ephemeral streams but there is no definition provided for “major channels”. Please provide a definition and also illustrate an example of a major channel within the proposed permit boundary that would fit into this category. (MDK)

Response MK 77 – Round 1

Revised text in Section RP.4.2 to provide the definition of major channels.

Comment MK 77 – Round 2

No comment received.

Response MK 77 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 78 – Round 1

Reclamation Plan, Section RP.5.6 Erosion Control and Conservation Practices, 52. The first sentence of the second paragraph...”Rills and gullies...” needs revised, as it appears to be missing one or more words. (MDK)

Response MK 78 – Round 1

See response to Comment DE 20. Text revised as requested.

Comment MK 78 – Round 2

No comment received.

Response MK 78 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 79 – Round 1

Reclamation Plan, Section RP.7.4 Aquatic Habitat, 53. The second sentence discusses stockponds possibly being disturbed by mining activities. The Mine Plan PHC did not mention that any existing stockponds would be disturbed by mining activities. If stockponds are to be disturbed by the mining operation, this should be discussed in the Mine Plan PHC. (MDK)

Response MK 79 – Round 1

The text in the Mine Plan PHC has been revised to clarify the disturbance to stockponds within the permit area. Section RP.7.4 has been revised to clarify the anticipated aquatic habitat locations.

Comment MK 79 – Round 2

No comment received.

Response MK 79 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 80 – Round 1

Reclamation Plan, Section RP.7.4 Aquatic Habitat, 54. The text states that two additional postmine impoundments will be constructed and their location is shown in Exhibit RP.3-1. This Exhibit shows ten permanent impoundments, both on and adjacent to the proposed permit area. Please revise this discrepancy in the text or change the symbology in the Exhibit to clearly show the two permanent post-mine impoundments. (MDK)

Response MK 80 – Round 1

Revised text in Section RP.7.4. to clarify the postmine impoundment locations.

Comment MK 80 – Round 2

No comment received.

Response MK 80 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 81 – Round 1

Reclamation Plan, Section RP.8.1 Drainage Basin Reconstruction, 55. Please add the major stream name labels (Tongue River, Goose Creek, East Fork Earley Creek, Slater Creek, Hidden Water Creek) to Exhibit RP.8-1. (MDK)

Response MK 81 – Round 1

Revised Exhibit RP.8-1 as requested.

Comment MK 81 – Round 2

No comment received.

Comment MK 81 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 82 – Round 1

Reclamation Plan, Section RP.8.1 Drainage Basin Reconstruction, 56. Please explain in the text how the postmine drainage basin parameters in Table RP.8-1 were determined. (MDK)

Response MK 82 – Round 1

Revised text in Section RP.8.1 as requested.

Comment MK 82 – Round 2

No comment received.

Response MK 82 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 83 – Round 1

Reclamation Plan, Section RP.8.1 Drainage Basin Reconstruction, 57. The text states that a comparison of drainage basin parameters in Table RP.8-1 and Exhibit RP.8-1 show that the overall hydrologic balance will remain largely unchanged. This conclusion is not obvious from the Table and Exhibit. How similar are the postmine drainage basin parameters to the pre-mine parameters? Which sub-drainages show the largest change from pre-mine conditions? The text needs to include a more thorough discussion to demonstrate to the reader why exactly the postmine hydrologic balance will be unchanged. (MDK)

Response MK 83 – Round 1

Revised text to include reference to Appendix D6 tables and exhibits regarding drainage basin parameters. Minor disturbance and mining methods contribute to the largely unchanged postmine drainage basin parameters.

Comment MK 83 – Round 2

No comment received.

Response MK 83 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 84 – Round 1

Reclamation Plan, Section RP.8.1.1 Discharge Estimates, 58. The text provides no discussion of the comparison between the pre-mine and postmine modelled discharge values. Please provide this discussion so the reader can determine if the differences are minor or major. (MDK)

Response MK 84 – Round 1

Revised text in Section RP.8.1.1 as requested.

Comment MK 84 – Round 2

No comment received.

Response MK 84 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 85 – Round 1

Reclamation Plan, Section RP.8.1.1 Discharge Estimates, 59. Please add the year to the Miller reference within the text (2003) and add this citation to the references list in Section RP.17. (MDK)

Response MK 85 – Round 1

Revised text as requested.

Comment MK 85 – Round 2

No comment received.

Response MK 85 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 86 – Round 1

Reclamation Plan, Section RP.8.1.1 Discharge Estimates, 60. Similar to Comment No. 8 made for Appendix D6, the HEC-HMS runoff estimates in Table RP.8.4 are much higher than the Miller (2003) equations. Please provide a discussion in the text as to the reasonableness of the HEC-HMS estimates and why the HEC-HMS estimates are so much higher than the Miller (2003) regression equations.

Response MK 86 – Round 1

See response to Comment MK 34. No revisions to the text were made.

Comment MK 86 – Round 2

No comment received.

Response MK 86 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 87 – Round 1

Reclamation Plan, Section RP.8.1.2 Channel/Floodplain Design, The last sentence in the first paragraph states that stream reaches for which designed cross sections are provided are identified in plan on Exhibit RP.8-1. There is nothing on this Exhibit that shows which stream reaches have designed cross sections, nor which stream channels are being reconstructed. Please clearly identify this information on this Exhibit. (MDK)

Response MK 87 – Round 1

Exhibit RP.8-1 has been revised as requested.

Comment MK 87 – Round 2

No comment received.

Response MK 87 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 88 – Round 1

Reclamation Plan, Section RP.8.1.2 Channel/Floodplain Design, 62. Exhibit RP.8-2 shows that the main Slater Creek channel will not be disturbed. Please consider this in light of Comment No. 50 that requested clarification on the extent of disturbance to the Slater Creek channel. (MDK)

Response MK 88 – Round 1

See response to Comment MK 76(referred to as Comment No. 50). Revised Exhibits RP.8-1 RP.8-2 as requested. A reconstructed Slater Creek (Figure RP.8-9) cross section has been added to reflect the correct disturbance boundary.

Comment MK 88 – Round 2

No comment received.

Response MK 88 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 89 – Round 1

Reclamation Plan, Section RP.8.1.2 Channel/Floodplain Design, 63. On Page RP-35, second paragraph, it references “reclaimed Slater Creek channel” and channel hydraulics are presented in Table RP.8-5. It is not clear why channel hydraulics are presented for Slater Creek when it will not be disturbed. Is this because reclaimed tributaries to Slater Creek are changing such that the main channel of Slater Creek is expected to be change? Please clarify this in the text. (MDK)

Response MK 89 – Round 1

Slater Creek is included Table RP.8-5 to show that the postmine Slater Creek Channel will be hydraulically similar to premine conditions after mining and reclamation operations have been completed as reclamation of a portion of Slater Creek is expected.

Comment MK 89 – Round 2

No comment received.

Response MK 89 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 90 – Round 1

Reclamation Plan, Section RP.8.2 Permanent Impoundments, 64. It is unclear exactly how many new postmine impoundments will be constructed. Table RP.8-6 identifies two impoundments (Enhancement Stock Pond 1 and Replacement Stock Pond 1), and these are shown in Exhibit RP.3-1. Exhibit RP.3-1 shows eight other permanent impoundments. Please identify if these are new features to be constructed or if they are existing stockponds that may be affected by the mining operation. (MDK)

Response MK 90 – Round 1

The text in Section RP.8.2 has been revised to clarify that only the new features to be constructed are displayed in Table RP.8-6. Affected existing stockponds will be constructed approximately to premine conditions.

Comment MK 90 – Round 2

No comment received.

Response MK 90 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 91 – Round 1

Reclamation Plan, Section RP.8.2 Permanent Impoundments, 65. Please identify in this section if there will be a net increase or decrease in post-mine water storage capacity relative to pre-mine capacity. (MDK)

Response MK 91 – Round 1

Revised text in Section RP.8.2 to clarify a net increase in water storage capacity is expected due to the addition of two postmine impoundments.

Comment MK 91 – Round 2

No comment received.

Response MK 91 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 92 – Round 1

Reclamation Plan, Section RP.8.2 Permanent Impoundments, 66. As mentioned Comment No. 47, it is advised that the applicant discuss with the SEO-Interstate Streams Division any implications for the Yellowstone Compact if new water storage features are proposed that potentially decrease water quantity to the Tongue River. (MDK)

Response MK 92 – Round 1

See response to Comment DS 28(Comment No. 47 mentioned above). Revised text as requested.

Comment MK 92 – Round 2

Response not accepted. The response referenced Comment DS 28, which did not mention consulting with the SEO about the Yellowstone Compact. As indicated in the

response to Comment MK 73, RAMACO is aware of the Yellowstone Compact and will act in accordance with the guidelines outlined. Please add a similar statement to Section RP.8.2. (MDK)

Response MK 92 – Round 2

The text in Section RP.8.2 Permanent Impoundments has been revised in the second paragraph to acknowledge that RAMACO will obtain a permit from the SEO, therefore any implications to the Yellowstone Compact will be analyzed by the SEO.

Comment MK 93 – Round 1

Reclamation Plan, Section RP.8.4.2 Surface Water Monitoring, 67. The text on Page RP-40 states that the surface water monitoring stations are shown on Exhibit RP.8-4. However, the stations are not shown on this Exhibit. It may be make the most sense to add these to Exhibit RP.8-5 and rename the Exhibit “Postmine Hydrologic Monitoring Locations” so the surface water stations and monitoring wells are on one Exhibit. (MDK)

Response MK 93 – Round 1

Revised the reference in text to state “locations of these sites are shown on Exhibit RP.8-5”. Exhibit RP.8-5 was revised to include surface water monitoring stations and renamed as requested. Table RP.8-9 was edited to include all planned surface water stations including postmine impoundment monitoring sites.

Comment MK 93 – Round 2

No comment received.

Response MK 93 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 94 – Round 1

Reclamation Plan, Section RP.8.4.3 Postmine Impoundments, 68. The text on Page RP-41 states that water quality samples will be collected at each of the postmine impoundments listed in Table RP.8-6 and presented on Exhibit RP.3-1. Please clarify in the text that this sampling list includes all ten impoundments shown. (MDK)

Response MK 94 – Round 1

Revised text in Section RP.8.4.3 to reference Table RP.8-9 and Exhibit RP.8-5 for postmine surface water monitoring sites including postmine impoundments.

Comment MK 94 – Round 2

No comment received.

Response MK 94 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 95 – Round 1

Reclamation Plan, Section RP.8.4.3 Postmine Impoundments, 69. Please add the list of impoundments to be sampled to Table RP.8-9 “Surface Water Monitoring Sites”.
(MDK)

Response MK 95 – Round 1

Revised Table RP.8-9 as requested.

Comment MK 95 – Round 2

No comment received.

Response MK 95 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 96 – Round 1

Reclamation Plan, Section RP.8.4.3 Postmine Impoundments, 70. The postmine impoundments to be sampled appears to be slightly different from the impoundments listed in Mine Plan Table MP.7-1 “Operational Surface Water Monitoring Locations”. Table MP.7-1 lists three impoundments (Hall Reservoir, Black Mountain No. 1 Stock Reservoir, and Legerski Bros #1 Stock Reservoir) that are not listed as postmine impoundments to be sampled. Please explain why there is a difference in the operational monitoring and postmine monitoring of some impoundments. (MDK)

Response MK 96 – Round 1

Black Mountain No.1 Stock Reservoir has been added as a postmine impoundment that will be monitored. Legerski No. 1 Stock Reservoir and Hall Reservoir are outside of the areas planned for mining disturbance, however in an effort to further monitor the surface water of the Brook Mine permit area, the reservoirs were added to be sampled quarterly during mining. Table RP.8-9 and Exhibit RP.8-5 have been updated to include Black Mountain Reservoir No. 1 Stock Reservoir.

Comment MK 96 – Round 2

No comment received.

Response MK 96 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 97 – Round 1

Reclamation Plan, Section RP.8.4.3 Postmine Impoundments, 71. In the second full paragraph on Page RP-41, “The water quality samples..” please also state that the water quality samples will be compared against WDEQ/WQD Class III groundwater standards, as suggested by LQD Guideline No. 17 for replacement and enhancement stockponds. (MDK)

Response MK 97 – Round 1

Revised text as requested in Section RP.8.4.3.

Comment MK 97 – Round 2

No comment received.

Response MK 97 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 98 – Round 1

Reclamation Plan, Section RP.8.5.2 Surface Water, 72. At the end of the first paragraph on Page RP-44, it predicts a “slight change” in event peaks and volumes. Please further discuss what is meant by a “slight change”, i.e., what is the magnitude of the increase or decrease? (MDK)

Response MK 98 – Round 1

Section RP.8.5.2 has been updated to reflect the change in event peaks and volumes will be less than one percent when compared to premining conditions.

Comment MK 98 – Round 2

No comment received.

Response MK 98 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 99 – Round 1

Reclamation Plan, Section RP.8.5.2 Surface Water, 73. In the second paragraph on Page RP-44, please clarify the extent of direct mining disturbance to Slater Creek versus tributaries of Slater Creek. This comment relates to previous Comments No. 50 and 62. (MDK)

Response MK 99 – Round 1

See response to Comments MK 76 (comment No. 50) and Mk 88 (Comment No. 62).

Comment MK 99 – Round 2

No comment received.

Response MK 99 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 100 – Round 1

Reclamation Plan, Section RP.8.5.2 Surface Water, 74. Please provide a discussion as to whether the planned postmine impoundments will affect surface water quantity on or downstream of the proposed permit area. (MDK)

Response MK 100 – Round 1

Section RP.8.5.2 has been revised to include discussion of the effect of postmine impoundments to the surface water quantity on and downstream of the proposed permit area.

Comment MK 100 – Round 2

No comment received.

Response MK 100 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 101 – Round 1

Reclamation Plan, Section RP.9.1 Introduction, 75. The second paragraph references Appendix D8. Should this be Appendix D10 (Wetlands)? Please revise this if necessary. (MDK)

Response MK 101 – Round 1

The reference has been revised to D10 as requested.

Comment MK 101 – Round 2

No comment received.

Response MK 101 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 102 – Round 1

Reclamation Plan, Section RP.9.1 Introduction, 76. Please add a statement up front in the Wetland Mitigation section that the USACE has not yet issued a jurisdictional determination for the proposed Brook Mine. Please also provide a statement in the

text that the information in Section RP.9 may be subject to change pending the USACE determination. The USACE jurisdictional determination should also be incorporated somewhere into the Mine Permit once that is received by the Brook Mine. (MDK)

Response MK 102 – Round 1

Sections RP.9.1 has been revised as requested.

Comment MK 102 – Round 2

No comment received.

Response MK 102 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 103 – Round 1

Reclamation Plan, Section RP.14 Bond Release, 77. The LQD no longer requires a bond release verification for “sediment control release”. This is now termed “surficial stability verification”. More information is available in LQD Guideline No. 23. Please revise the text for this change. (MDK)

Response MK 103 – Round 1

The text in Section RP.14 has been revised by removing the reference to sediment control release.

Comment MK 103 – Round 2

Response accepted. However please note that RAMACO may wish to also cite LQD Guidelines No. 20, 21, 22, 23, and 25, as these are key documents for assisting operators with bond release procedures. (MDK)

Response MK 103 – Round 2

The text in Section RP.14 Bond Release has been revised to include discussion of WDEQ/LQD Guidelines No. 20, 21, 22, 23 and 25 for bond release. In addition, the Guidelines mentioned above have been added to Section RP.17 References.

Comment MK 118 – Round 2 (New Comment)

In Section RP.3.4 Erosion and Sedimentation Control Practices, the first sentence on Page RP-4 references sedimentation impoundments. As noted in the response to Comment MK 49, sedimentation impoundments are not currently planned as part of the mining operation. The text in this section should also clarify that sedimentation impoundments are not planned. (MDK)

Response MK 118 – Round 2 (New Comment)

The Mine Plan has been revised to state that sedimentation impoundments will be required. Designs for sedimentation impoundments required in the first five years of operations are now provided in Addendum MP-2. Therefore, the reference to sedimentation impoundments in the Reclamation Plan has been left in place.

Comment MK 119 – Round 2 (New Comment)

In Section RP.8.5.2 Surface Water, the third sentence of the last paragraph on Page RP-46 references sedimentation reservoirs. As noted in the response to Comment MK 49, sedimentation reservoirs are not currently planned as part of the mining operation. The text in this section should also clarify that sedimentation reservoirs are not planned. (MDK)

Response MK 119 – Round 2 (New Comment)

The Mine Plan has been revised to state that sedimentation impoundments will be required. Designs for sedimentation impoundments required in the first five years of operations are now provided in Addendum MP-2. Therefore, the reference to sedimentation impoundments in the Reclamation Plan has been left in place.

Comment MuK 91 – Round 1

Reclamation Plan, RP 8.5.3 Groundwater, 91. Section 8.3, page RP-38 states, “The estimated Postmine Potentiometric surfaces for the reclaimed aquifer for the Masters and Carney Seams are presented respectively in Exhibit RP.8.3 and Exhibit RP.8-4. Please provide a summary comparing and contrasting the premine potentiometric surfaces vs. post mine potentiometric surfaces. This comparison should also consider any changes in the hydraulic properties (hydraulic conductivity, storativity, recharge capacity) of the premine aquifers vs. post mine aquifers. (MK)

Response MuK 91 – Round 1

Section RP.8.5.3 has been revised to include discussion regarding the comparison of premine and postmine potentiometric surfaces.

Comment MuK 91 – Round 2

No comment received.

Response MuK 91 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MuK 92 – Round 1

Reclamation Plan, RP 8.5.3 Groundwater, 92. Please discuss any changes in the interaction between the surface water and groundwater systems from the premining through the postmining phases of the operation. (MK)

Response MuK 92 – Round 1

The response to Comment MuK 84 describes interaction between the surface water and groundwater systems from the premining through the postmining phases of operation. In general the changes between the surface water systems and the groundwater systems are expected to be minimal. For a short time during mining it is anticipated that there will be a small (less than 6%) increase in the amount of water that recharges the coal seams from the Tongue River. Once the water levels in the coals recover, no further impacts are expected.

Comment MuK 92 – Round 2

No comment received.

Response MuK 92 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MuK 93 – Round 1

Reclamation Plan, RP 8.5.3 Groundwater, 93. Please discuss the intersection of the postmining topographic and potentiometric surfaces and their effects on the location and size of groundwater-fed water bodies. (MK)

Response MuK 93 – Round 1

Revised Section RP.8.5.3 as requested.

Comment MuK 93 – Round 2

No comment received.

Response MuK 93 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MuK 94 – Round 1

Reclamation Plan, RP 8.5.3 Groundwater, 94. Section 8.5.3, page RP-46 states, “These water quality changes can be qualitatively predicted from the overburden mineralogy and projected post mine hydrology.” Please expand this discussion on projected groundwater quality. Provide a discussion on the estimated/ projected post mining groundwater quality. A detailed description of potential changes in water quality from flow through backfill/mined out areas should be included. Any potential changes to

water quality in adjacent aquifers should be discussed with respect to the potential for offsite material damage. (MK)

Response MuK 94 – Round 1

Revised Section RP.8.5.3 text as requested.

Comment MuK 94 – Round 2

No comment received.

Response MuK 94 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MuK 95 – Round 1

Reclamation Plan, RP 8.5.3 Groundwater, 95. Please provide a discussion on any anticipated water use during the reclamation period. (MK)

Response MuK 95 – Round 1

As discussed in Addendum MP-3, the only anticipated groundwater uses during the reclamation period are at existing water supply wells. Section RP.8.5.3 has been revised to include additional discussion.

Comment MuK 95 – Round 2

No comment received.

Response MuK 95 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MuK 96 – Round 1

Reclamation Plan, RP 8.5.3 Groundwater, 96. Please address (or reference) any expected post-reclamation subsidence effects on the hydrologic system (both quantity and quality) and the plan to minimize these effects. (MK)

Response MuK 96 – Round 1

Section RP.8.5.3 has been revised to include discussion of expected postmine subsidence effects on the hydrologic system.

Comment MuK 96 – Round 2

No comment received.

Response MuK 96 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment SP 7 – Round 1

Reclamation Plan, Page RP-13. Section RP.6.2.6. In the last sentence please add that substitutions to the seed mix will be made only with WDEQ approval.

Response SP 7 – Round 1

Revised text in Section RP.6.2.6 as requested, the statement will now read “In the event that seed for primary species is not available, alternatives will be considered which match the life form and morphology of the primary choice only with WDEQ approval.”

Comment SP 7 – Round 2

No comment received.

Response SP 7 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment SP 8 – Round 1

Reclamation Plan, Page RP-16. Section RP.6.4.1. To demonstrate that all of the unaffected acres of each vegetation community are sufficient for an extended reference area please create a table with total acres and affected acres and reference this table in this section.

Response SP 8 – Round 1

Table RP.6-6 has been created to display the number of extended reference acres for the respective vegetation communities. The text in Section RP.6.4.1 has been revised to include a reference to the newly created table.

Comment SP 8 – Round 2

No comment received.

Response SP 8 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment SP 9 – Round 1

Reclamation Plan, Page RP-17. Section RP.6.4.1. Please add to the Ch. 4 reference in the first sentence on this page that the Handbook of Approved Sampling and Statistical Methods for Evaluation of Revegetation Success on Wyoming Coal Mines.

Response SP 9 – Round 1

Revised Section RP.6.4.1 as requested.

Comment SP 9 – Round 2

No comment received.

Response SP 9 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment SP 10 – Round 1

Reclamation Plan, Page RP-17. Section RP.6.4.1. Please remove the first sentence in the third paragraph. It appears in conflict with the next sentence which cites Ch. 4.Sec. 2(d)(ii)(B).

Response SP 10 – Round 1

Removed sentence as requested in Section RP.6.4.1.

Comment SP 10 – Round 2

No comment received.

Response SP 10 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment SP 11 – Round 1

Reclamation Plan, Page RP-19. Section RP.6.4.5.1. Please add a third sentence to the first paragraph to Pastureland land use with a full shrub density greater than 1 shrub/m² is also eligible.

Response SP 11 – Round 1

Sentence including pastureland land use as eligible added to Section RP.6.4.5.1 as requested.

Comment SP 11 – Round 2

No comment received.

Response SP 11 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment SP 12 – Round 1

Reclamation Plan, Page RP-24. Please revise the sentence after the • Shrub density bullet to “Additionally, a species list will be prepared” and delete the remainder of the sentence.

Response SP 12 – Round 1

Revised text as requested.

Comment SP 12 – Round 2

No comment received.

Response SP 12 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment SP 13 – Round 1

Reclamation Plan, Page RP-25. Section RP.6.7.3. Under Sampling Frequency in Guideline 14 the third sample may be included as part of your revegetation success (bond release) sampling which can begin in year seven. You may add more flexibility to your sampling interval such as beginning year 3 or 4, with the second sampling in year 5, 6 or 7 and then the third may be year 7 – 13 and may be used for revegetation success.

Response SP 13 – Round 1

Revised text per recommendations.

Comment SP 13 – Round 2

No comment received.

Response SP 13 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment SP 14 – Round 1

Reclamation Plan, Page RP-29. Section RP.7.2. There is a reference to RP.8 in this section. Please correct the reference if it is not correct.

Response SP 14 – Round 1

Revised text to reference Section RP.6 for seed mixtures and revegetation operations.

Comment SP 14 – Round 2

No comment received.

Response SP 14 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment SP 15 – Round 1

Reclamation Plan, Table RP6.1. Could you please add a footnote listing the disturbances that are included in the 87.3 acres of Disturbance and what the disturbances will be postmining in the 56.1 acres.

Response SP 15 – Round 1

Added footnote describing disturbance for premining and postmining to Table RP.6-1 as requested.

Comment SP 15 – Round 2

No comment received.

Response SP 15 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment SP 16 – Round 1

Reclamation Plan, Exhibit RP.2-1. Postmining the landuse will be Grazingland and Fish and Wildlife Habitat (937.7 acres) and Cropland (3.7 acres) with 56.1 acres of disturbance, 4.9 acres of water and 11.6 acres of wetland. These landuses will match the landuses on Exhibit D1.1-1. With just minor acreage changes shown in Table RP.6-1. Since the railroad and major roads are identified and Taylor Quarry is going to be reclaimed to Grazingland and Fish and Wildlife Habitat, the Industrial commercial stippling is not needed on these areas.

Response SP 16 – Round 1

Revised exhibit as requested.

Comment SP 16 – Round 2

No comment received.

Response SP 16 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Other Comments

Comment MK 27 – Round 1

Items Requested in Electronic Format for Preparation of CHIA, 1. Please provide a CAD or ArcGIS shapefile that contains the proposed permit boundary for the Brook Mine. This file will be used to prepare maps in the CHIA. This file can be emailed to: matthew.kunze@wyo.gov. (MDK)

Response MK 27 – Round 1

See response to comment MK 28.

Comment MK 27 – Round 2

Response to the comment is pending. Review of the response to this comment will be completed when the information is received. (MDK)

Response MK 27 – Round 2

The permit boundary in CAD format was provided as an attachment in an e-mail dated September 1, 2015.

Comment MK 28 – Round 1

Items Requested in Electronic Format for Preparation of CHIA, 2. Please provide the baseline surface and groundwater data collected to support baseline characterization for the permit application. All data can be submitted on Excel templates (Attachments) found on the LQD website for the Coal Annual Report Format (CARF): <http://deq.wyoming.gov/lqd/coal/resources/annual-report-3/>.

- Please provide all surface water flow and water quality data for the following surface water stations: SM578415-SW-1, SM578409-SW-1, SM578418-SW-1, and SM578512-SW-1.
- Please provide all groundwater level and water quality data for all Brook Mine monitoring wells shown in Table D6.2-1.

Response MK 28 – Round 1

The electronic data requested is being compiled in the requested format and will be provided when it is completed.

Comment MK 28 – Round 2

Response to the comment is pending. Review of the response to this comment will be completed when the information is received. (MDK)

Response MK 28 – Round 2

The electronic data in CARF format was provided as an attachment in an e-mail dated September 1, 2015.

Comment MuK 97 – Round 2 (New Comment)

In the next submittal, please consider providing a text tracking mechanism that will highlight the changes that are made in response to the comments. Typically, it can be a bolded font for all the text that is revised. This will help the reviewer to review the appropriate revised text. Without this bold font or some distinct highlight for the revised text, the reviewer has to compare against the initial submittal to get a handle on the changes that were made in response to the LQD comments.

Response MuK 97 – Round 2 (New Comment)

RAMACO will coordinate with WDEQ to facilitate review in anyway once WDEQ has determined the method that is most suitable (as per the meeting on September 1, 2015). In the meantime, RAMACO has attempted to make it as clear as possible in comment responses what the location of textual changes has been. Additionally, please refer to the Change Index for locations of replaced or added text, tables, and figures. Also, any page with new changes will be updated with the submittal month and year in the footer. Pages in the permit without changes will maintain previous dates.

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Brook 9

Adjudication

Comment AG 1 – Round 1

Please also provide copies of the complaint and the answer. If there are any motions that the court has ruled on limiting or deciding any of the claims or factual or legal questions originally at issue in the case, please also provide copies of the orders, the motions, the responses to the motions, and any supporting memoranda.

Response AG 1 – Round 1

The Applicant's position with regard to any surface interests that may be claimed by Padlock Ranch Company and/or Big Horn Coal Company is that the Applicant alone owns the sole dominant present property right to use these surface lands for the coal mining operation described in the application, as that application has been submitted and supplemented. Applicant's sole dominant surface ownership and use interest in the relevant lands derives directly from the 1954 Deed (Attachment B) and its express reservation language. Pursuant to the controlling Wyoming Supreme Court authority set out in *WYMO Fuels, Inc. v. Edwards*, 723 P.2d 1230 (Wyo. 1986) (Attachment C), when the Applicant already owns the dominant surface use rights for coal mining on the property, then the Applicant consents to its own use pursuant to its application by submitting the application and no other surface consents can or should be required under W.S. § 35-11-406(b)(xi). As the Land Quality Division is aware, to the extent that Padlock Ranch Company incorrectly claims some surface rights on any lands described in the 1954 Deed, it necessarily could only attempt to do so fully subject to the Applicant's sole dominant surface rights to mine coal. Under the *WYOMO Fuels, Inc.* decision, no consent from Padlock can be required. To the extent that Big Horn Coal incorrectly claims some surface use right in this area at this time, the Applicant is proceeding with quiet title litigation (Fourth Judicial District Court, Sheridan County, Wyoming Civil No. CV 2014-372) against Big Horn Coal on this issue and has asserted its sole dominant reserved surface right to use the surface described in the 1954 Deed to mine coal there without any consent from Big Horn Coal pursuant to the *WYOMO Fuels, Inc.* case decision. Accurate copies of the Applicant's pending summary judgment motion arguments on this issue are enclosed with this response (attachment D and E). The Applicant can and will supplement these pleadings with further documentation that is described in the pleadings upon request.

Comment AG 1 – Round 2

Please provide copies of the following documents related to the state district court litigation between the Applicant/Ramaco and Big Horn Coal Company:

- The complaint and answer filed in the case (if either has been amended, only the most recent amended version needs to be provided).

- For the Applicant's summary judgment motion: Big Horn Coal's response to the motion.
- For Big Horn Coal's motion for summary judgment: the memo supporting that motion, the Applicant's response to the motion, and Big Horn Coal's reply memorandum.
- The "Section 5" of the "May 6, 1983, Release Agreement" that the Applicant mentioned in its reply in support of its summary judgment motion.
- When it is available, the district court's order deciding the Applicant's and Big Horn Coal's summary judgment motions.

Response AG 1 – Round 2

The materials requested in this comment were supplied to the Attorney General on August 20, 2015 after the Round 2 comments had been released. It is assumed if any further comment is required, it will be received in Round 3.

Comment AG 2 – Round 1

Therefore, the Division requests the Applicant to provide sufficient information and supporting documents for the Division to determine whether Padlock Ranch Company and Big Horn Coal Company are or are not "residential or agricultural landowners" under the statutory definition in W.S. § 35-11-406(b)(xi).

Response AG 2 – Round 1

Please see response AG 1.

Comment AG 2 – Round 2

Please also provide sufficient information and supporting documents for the Division to determine whether Padlock Ranch or Big Horn Coal qualify as a "resident or agricultural landowner," as defined in W.S. § 35-11-406(b)(xi). The statutory requirements for a permit application differ depending on whether that status exists, and the Division must determine which set of requirements (W.S. § 35-11-406(b)(xi) or -406(b)(xii)) may apply to this Application.

Response AG 2 – Round 2

The materials requested in this comment were supplied to the Attorney General on August 20, 2015 after the Round 2 comments had been released. It is assumed if any further comment is required, it will be received in Round 3.

Comment AG 3 – Round 2 (New Comment)

Would the 1983 release agreement apply to the surface rights that originate with the 1954 Deed and are currently owned by Padlock Ranch? Did Padlock Ranch obtain its rights at issue before or after the 1980 release agreement?

Response AG 3 – Round 2 (New Comment)

No. The 1983 release agreement does not affect any of the rights reserved in the 1954 Deed. The 1954 Deed controls the surface use mining rights of Ramaco relative to both Big Horn Coal and Padlock Ranch. Even if the release agreement had an effect as to Big Horn, Padlock Ranch is not a party to the release agreement and as a non-party has no rights under that agreement. Ramaco has found no documents that might show Padlock Ranch acquired any kind of interest or rights under the 1983 release agreement.

Instead, Ramaco has found documents that show Padlock Ranch acquired certain lands from Big Horn Coal in 1965, almost 20 years **before** the release agreement. Padlock then sold some of the land back to Big Horn Coal and vice versa. But none of the documents showing these transfers mention the 1983 release agreement.

Comment AG 4 – Round 2 (New Comment)

If one assumes that Big Horn's arguments in the litigation are correct that the 1983 release agreement granted Big Horn rights greater than those under the 1954 Deed, would Big Horn's arguments and the rights it argues that it obtained through the release agreement also apply to any of Padlock Ranch's lands?

Response AG 4 – Round 2 (New Comment)

No. As discussed in response to the previous question, Padlock Ranch does not have any rights under the release agreement. Likewise, Ramaco could find no documents showing that Padlock Ranch ever acquired any rights in the 1983 release agreement.

Comment AG 5 – Round 2 (New Comment)

Are there any contractual documents or property records related to Padlock Ranch's lands that arguably may have altered Padlock Ranch's rights under the 1954 Deed? If so, please provide copies of those documents and explain the nature of the documents and how they may have affected Padlock Ranch's rights.

Response AG 5 – Round 2 (New Comment)

No. Ramaco has found several deeds purporting to convey land from Big Horn Coal to Padlock Ranch's predecessor. These deeds, however, do not alter or try to alter any rights under the 1954 Deed.

Comment BJ 68 – Round 3 (New Comment)

The Certificate of Liability Insurance appears to have expired on October 14, 2015. Please generate a new Certificate of Liability Insurance to cover the present period.

Response BJ 68 – Round 3 (New Comment)

A new Certificate of Liability Insurance covering the present period has been provided in this response package.

Comment DM 1 – Round 1

Adjudication – Appendix B2 – Groundwater Rights – There is a groundwater well that is missing in this volume. The listing is as follows:

Barbula #2

Permit No. 85631W

Location: SW NW Section 21, T57N R84W

Please add this entry to the table and to any corresponding maps.

Response DM 1 – Round 1

Adjudication text page WR-12 has been updated to include Barbula # 2 (P85631W) as well as Adjudication Exhibits 5 & 8.

Comment DM 1 – Round 2

No comment received.

Response DM 1 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 120 – Round 3 (New Comment)

Adjudication-Form 1. The index change sheet states that the affected area boundary was updated on several Exhibits. Has the affected area acreage changed? If so a new Form 1 will need submitted to show the correct affected area acreage. (MDK)

Response MK 120 – Round 3 (New Comment)

A new Form 1 has been provided with the revised affected acreage in this response package.

Appendix D1

Comment BJ 1 – Round 1

Appendix D1, Land Use, Table D1. 3-1; It is unnecessary to list the Expired Permit category of gas well permits. Since these APDs have expired without completion there is no related activity to the site. Listing of a non-event is not required. This also

applies to the NO category since this indicates that the APD was refused, thus never became permitted through WOGCC.

Response BJ 1 – Round 1

Revised Table D1.3-1 as requested.

Comment BJ 1 – Round 2

No comment received.

Response BJ 1 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment SP 1 – Round 1

Appendix D-1. Exhibit D1.1-1. The landuses defined in Chapter 1 should be used on this Exhibit. Not the entire Brook Mine Permit falls neatly into these definitions so the following comments provide guidance:

- a) The railroad, primary roads, oil and gas wells, and the facilities for Taylor Quarry would be considered Industrial commercial and may be shown with the vertical line stippling. The rest of the vertical stippling should be removed.
- b) The 4.5 acres of Agricultural lands would have the Land use of Cropland. This small acreage will not show up well on this map but is listed in Tables D.8-2 and RP.6-1 so no changes are needed to the map for this land use.
- c) The 12.8 acres of water might be listed under multiple landuses such as Grazingland, Fish and Wildlife habitat or Recreational. This small acreage will not show up well on this map but is listed in Tables D.8-2 and RP.6-1 so no change is needed to the map for this land use.
- d) The 4,421.8 acres remaining should be shown as Grazingland and Fish and Wildlife habitat. The legend on the map should have Fish and Wildlife Habitat added to Past and Present Grazingland landuse. The stippled area on the map will stay the same.
- e) No changes are needed to the areas identified as Recreational.

Response SP 1 – Round 1

Revised Exhibit D1.1-1 as requested.

Comment SP 1 – Round 2

No comment received.

Response SP 1 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment SP 1 – Round 3

The response is satisfactory. Exhibit D1.1-1 has been revised to match the landuse definitions.

Comment SP 2 – Round 1

Appendix D-1. Text that refers to the areas mined as Industrial commercial should be revised to remove the mining. A reference to Section 1.6 on historic mining can be made in Section D1.3.1. Grazingland. The reclaimed mined lands are now being used as Grazingland. The difference between the mined and never been mined is defined as the vegetation community that is called Reclaimed. Section D1.6 discusses the historic mining of the area and the discussion on coal mining in Industrial commercial (D1.4.3) can be removed.

Response SP 2 – Round 1

Revised text as requested.

Comment SP 2 – Round 2

No comment received.

Response SP 2 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment SP 2 – Round 3

The response is satisfactory. The text has been revised to identify the reclaimed land as Grazingland.

Appendix D2

Comment BJ 2 – Round 1

Appendix D2, History, There are no comments for this section of the application. The narrative is well written and comprehensive.

Response BJ 2 – Round 1

No response is necessary.

Appendix D3

No comments were received regarding Appendix D3.

Appendix D4

Comment BJ 3 – Round 1

Appendix D4, Climatology, General comment – Is there no data for climatology that is more recent than 1990? It exists, therefore needs to be represented. Please locate and include the most recent climatological data. Twenty year-old data bears little resemblance to Sheridan County climate today so characterization of the present climate with a 20 year gap is problematic. Please reevaluate the data in light of locating and use more recent information.

Response BJ 3 – Round 1

Revised wind, relative humidity, and degree day data to reflect period between 1990 and 2013. Note, as can be observed by updated data, little change occurred in averages reported for wind, relative humidity, and degree days. Therefore, the wind rose provided in Figure D4.2-6 is deemed to still be representative of the Sheridan area. Revised Figure D4.2-1, Figure D4.2-11, Table D4.1-1, Table D4.2-2, Table D4.2-3, and Table D4.2-7 in response to this comment.

Comment BJ 3 – Round 2

No comment received.

Response BJ 3 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment BJ 4 – Round 1

Appendix D4, Climatology, Section D4.2.6, Why was 65°F used as the baseline temperature? Also, why were the high and low temperatures set to 86°F and 50°F respectively? Please clarify.

Response BJ 4 – Round 1

Revised text to clarify the choice of high and low temperatures.

Comment BJ 4 – Round 2

No comment received.

Response BJ 4 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment BJ 5 – Round 1

Appendix D4, Climatology, Figure 4.2-11, Are the degree days the total number of days that match the data points for the entire period from 1961 through 1990? This

indicates that the data represented along the Y axis covers a period of 30 years on a daily basis. Please clarify.

Response BJ 5 – Round 1

Revised text with definitions of heating, cooling, and growing degree days to clarify Figure 4.2-11. Degree days are essentially a unit of measure like temperature, velocity, etc. A degree day signifies the number of degrees per day to heat or cool to a specified base temperature (most commonly 65°F). Each degree day is summed over the course of a month to estimate the total number of degree days that month. For example, July may have 0 heating degree days because all days are over 65°F, but will have cooling degree days nearly every day of the month. Figure 4.2-11 shows the average monthly degree days over the specified periods of data.

Comment BJ 5 – Round 2

No comment received.

Response BJ 5 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Appendix D5

Comment BJ 6 – Round 1

Appendix D5, Topography, Geology, and Overburden Assessment, Section D5.4.1, Paragraph 2 refers to "marginally suitable Selenium levels" as defined in LQD Guideline No.1. Guideline 1 has two separate sets of chemical quality criteria tables. Appendix 1 occurs on pages 17-21 as well as on pages 38-43. The first set of tables have been superseded by the second set of tables. Please use the tables on pages 38-43 when determining material suitability. The first Appendix 1 is being removed from the guideline.

The newer tables define the Selenium target as follows:

Suitable < 0.3 ppm

Marginal 0.3 – 0.8 ppm

Unsuitable > 0.8 ppm (dependent on premining water quality and overburden quality)

These values are established for uplands and ephemeral drainages unless it can be shown that Selenium impregnated materials will be buried above the groundwater potentiometric surface and below the reclaimed surface root zone. Other quality criteria have not changed.

Response BJ 6 – Round 1

Revised text as requested to reflect the revised LQD Appendix 1.

Comment BJ 6 – Round 2

No comment received.

Response BJ 6 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment BJ 7 – Round 1

Appendix D5, Topography, Geology, and Overburden Assessment, Figure D5.3-2, What units are expressed in the figure as the %g? Please include a footnote clarifying the measurement parameter.

Response BJ 7 – Round 1

Updated Figure D5.3-2 as requested.

Comment BJ 7 – Round 2

No comment received.

Response BJ 7 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment BJ 8 – Round 1

Appendix D5, Topography, Geology, and Overburden Assessment, Addendum D5-1, Are the Northings and Eastings in State Plane coordinates? It is assumed that they are but please verify this. The title at the top of the page could read Drill Hole Tabulations (State Plane Coordinates)

Response BJ 8 – Round 1

Updated as requested.

Comment BJ 8 – Round 2

No comment received.

Response BJ 8 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment BJ 9 – Round 1

Appendix D5, Topography, Geology, and Overburden Assessment, Addendum D5-2, Please rearrange the Lithologic and Electric logs in such a way that the Electric log immediately follows the Lithologic log. This allows for a more comprehensive examination of the data.

Response BJ 9 – Round 1

Rearranged logs as requested.

Comment BJ 9 – Round 2

No comment received.

Response BJ 9 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment BJ 10 – Round 1

Appendix D5, Topography, Geology, and Overburden Assessment, Holes R12-000 through R12-020 have the Northings and Eastings reversed. Please correct.

Response BJ 10 – Round 1

Updated as requested.

Comment BJ 10 – Round 2

No comment received.

Response BJ 10 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment BJ 11 – Round 1

Appendix D5, Topography, Geology, and Overburden Assessment, The Lithologic logs with the AMBRE designation 02, 03, and 04 do not have coordinates or elevations. Please provide coordinates and elevations for these three holes.

Response BJ 11 – Round 1

Updated as requested.

Comment BJ 11 – Round 2

No comment received.

Response BJ 11 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment BJ 12 – Round 1

Appendix D5, Topography, Geology, and Overburden Assessment, Hole R13-018 appears to have erroneous coordinates. The Northing is listed as 11,941,802. It should probably be 1,941,802. The elevation is shown as 43,887.9, where it should probably be closer to 3,887.9. Please verify and correct.

Hole R13-024 has a very high Northing at 61,941,541 and elevation at 73,885.4. These may be 1,941,541 and 3,885.4, respectively. Please verify and correct

Response BJ 12 – Round 1

Updated as requested.

Comment BJ 12 – Round 2

No comment received.

Response BJ 12 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment BJ 13 – Round 1

Appendix D5, Topography, Geology, and Overburden Assessment, A suggestion for future exploration: Ask the geophysical logger to reduce the gain on the gamma logs. The readjustment bounce on the logs makes them a bit difficult to read and interpret.

Response BJ 13 – Round 1

No response required.

Comment BJ 13 – Round 2

No comment received.

Response BJ 13 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment BJ 14 – Round 1

Appendix D5, Topography, Geology, and Overburden Assessment, Addendum D5-5, Pg. D5-5-4, The splitting tensile strength tests were run on four (4) samples from two (2) holes representing roof, coal, and floor conditions.

- a) Why were these locations used as representative of the lithologies encountered during mining?
- b) Are these few samples representative of all conditions expected to be encountered by the continuous miner (CM)?

Please elaborate and clarify the narrative. A statement must be made that strength testing will be performed on at least one set of samples per mining panel prior to use of the CM to insure that conditions are favorable for roof retention without subsidence. Lithology in this area is inconsistent and rock strength can vary accordingly. Using the data provided on the four samples tested indicates that some of the overburden from hole R13-19 is unsuitable for highwall mining, based on the CAT® Site Evaluation Tool For Highwall Miners;

(<http://webtools.cat.com/globalmining/highwallminers/index.html>).

Response BJ 14 – Round 1

Appendix D5 Section D5.3.3.2 has been updated as requested.

Comment BJ 14 – Round 2

No comment received.

Response BJ 14 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment BJ 15 – Round 1

Appendix D5, Topography, Geology, and Overburden Assessment, Addendum D5-4, Exhibits 1 – 7, Please include the drill hole locations on these isopach maps.

Response BJ 15 – Round 1

Updated as requested.

Comment BJ 15 – Round 2

No comment received.

Response BJ 15 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment BJ 16 – Round 1

Appendix D5, Topography, Geology, and Overburden Assessment, Exhibit 8, The map labeled as the isopach map of the Lower Masters bed is a contour of a surface. Please replace the contour map with the appropriate isopach map

Response BJ 16 – Round 1

Updated as requested.

Comment BJ 16 – Round 2

No comment received.

Response BJ 16 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment BJ 59 – Round 1

EXHIBITS, Addendum D5-4, Exhibit 1, The title on the map declares that this is an overburden isopach, but the bed name is missing. Please indicate which bed this map pertains to.

Response BJ 59 – Round 1

Updated Exhibit 1 of Addendum D5-4 as requested.

Comment BJ 59 – Round 2

No comment received.

Response BJ 59 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment BJ 60 – Round 1

EXHIBITS, Addendum D5-4, Exhibit 8, The name of the PDF file for this exhibit indicates that this is an isopach map of the Masters Lower coal bed. The title in the map indicates that this is the contour of the base of the Masters coal seam. Please correct the title of the PDF file.

Response BJ 60 – Round 1

The title of Exhibit 8 of Addendum D5-4 will be revised in the electronic copy, as requested.

Comment BJ 60 – Round 2

The title of Exhibit 8 in Addendum D5-4 remains unchanged. This appears to be an inadvertent oversight on the part of WWC.

The Current PDF file name is:

ADD_D5_4_EX_8_MASTERS_ISO-MASTERS_LOWER_R1.

The Title of the map in the Title Block is:

BOTTOM ELEVATION OF MASTERS COAL SEAM.

Please correct the name on the PDF file to better represent the contents of the exhibit.

Response BJ 60 – Round 2

Thank you for catching the oversight. The name on the PDF file has been changed to more accurately represent the contents of the map. The PDF with the corrected name will be emailed to Mr. Kristiansen.

Comment BJ 60 – Round 3

No comment received.

Response BJ 60 – Round 3

Round 2 response assumed to be adequate. No response is necessary.

Comment BJ 61 – Round 1

EXHIBITS, Addendum D5-6, Exhibit 1, we commend RAMACO for sampling overburden locations on 80 acre spacing. There are some gaps in the sampling plan, however, that need to have core holes drilled to fill them. The underground Coal Rules and Regulations in Chapter 7, Section 1(a)(i) are specific on ensuring that overburden geology is characterized in all locations where overburden will be removed or subsidence may occur. This essentially means that all areas above the planned coal panels need representative cores drilled to a sufficient density, approximately one hole for every quarter section of affected area. Based on that, the following locations still need to be characterized by overburden sampling:

NE1/4, sec.22, T.57N., R.84W.

NW1/4, sec.15, T.57N., R.84W.

NW1/4, sec.14, T.57N., R.85W.

SE1/4, sec.10, T.57N., R.85W.

Response BJ 61 – Round 1

A drilling rig was not able to enter the areas NW1/4, Sec.14, T.57N., R.85W and SE1/4, Sec.10, T.57N., R.85W. due to the steepness of the terrain, therefore no samples were obtained. Sampling data for drill holes BH 166-78 and BE 326-78 have been incorporated into Addendum D5-2 and Addendum D5-7 to characterize the overburden in Sections 15 and 22.

Comment BJ 61 – Round 2

No comment received.

Response BJ 61 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment BJ 62 – Round 1

EXHIBITS, Addendum D5-6, Exhibit D5.1-1, Kudos to the staff member that created this slope analysis map. It is clear and concise and the histogram is very informative. Good job.

Response BJ 62 – Round 1

Thank you for this comment.

Comment BJ 62 – Round 2

No comment received.

Response BJ 62 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment DS 1 – Round 1

Appendix D5, The Coal Rules and Regulations, Chapter 7, Section 1(a)(i)(A) states that information required for the geological description pursuant to Chapter 2, shall be as follows: for areas where surface operations and facilities will cause removal of overburden down to a level of the coal seam, all information outlined in Chapter 2. Overburden sampling has not been performed in many of the locations where overburden will be removed during the mining operations. Additional sampling will be required to assess overburden chemistry in all areas where overburden removal will occur. The intensity of sampling should be 1 core per 160 acres (per quarter section). The LQD requests sampling every 1,900 linear feet on longer proposed disturbance areas or, at minimum, two cores within shorter disturbances separated sufficiently to provide a representative characterization of the proposed disturbance.

- a. Not all overburden has been characterized during analysis. Several lenses of shallow coal mixed with partings or narrow coal seams that will not be mined were not characterized. Because all overburden must be handled so as not to negatively affect surface water, groundwater or vegetation, all overburden must be adequately characterized. Therefore, the LQD requests additional characterization of all overburden that will be backfilled into disturbed areas. It must also be stated that special handling and/or identification and use of topsoil/subsoil replacement may be required if unsuitable backfill or soil is

placed within 4 feet of the surface on upland areas or within 10 feet of the surface in stream channels.

Response DS 1 – Round 1

Please see response to BJ 61.

Comment DS 1 – Round 2

Response is not adequate. The LQD requires additional overburden suitability analysis to be included for all areas to be disturbed during mining. No additional baseline overburden suitability assessment laboratory data was provided for holes BH 166-78 and BE 326-78. Please provide the raw data. Also, provide a commitment to sample overburden from areas to be disturbed by mining (specifically identify the pit sequence) where overburden baseline was not provided during baseline sampling. Sample every 1,300 feet in the sequence prior to overburden removal. Report the analytical results in the annual report for the year of initial disturbance for the pit sequence. Also, since RAMACO is reluctant to provide a special handling commitment, sampling must be performed at 500 ft. spacing on backfilled and rough graded pits (4 ft. depth on upland areas and 8 ft. depth under stream channel or permanent impoundments) to assure quality of surface materials. Also, if groundwater is expected in the pits, unsuitable materials must not be placed in the groundwater zone. Of the backfilled pit. (DS)

Response DS 1 – Round 2

For the location of the laboratory data for holes BH 166-78 and BE 326-78, please refer to Response BJ 61 (Round 1). Sampling data for drill holes BH 166-78 and BE 326-78 have been incorporated into Addendum D5-2, Addendum D5-7 and Table D5.4-2.

For the following commitments, please refer to the Mine Plan since these commitments are for operations rather than baseline studies. Please note that the text for these commitments has been in place. The following discussion provides the location of each commitment.

1. Section MP.4.6.1 states that the overburden sampling program will include one drill hole sample taken every 40 acres (16 sample locations per square mile) within areas where surface operations will cause removal of overburden down to the level of the coal seam. The delineation of 40 acres more correctly states the suggestion in Guideline No. 1 on page 9 in Section II(B)(3)(a)(1) as opposed to the suggestion of 1,300 feet. The first paragraph of Section MP.4.6.1 states that any additional overburden quality sampling will be submitted to WDEQ/LQD in the mine's annual reports. No changes have been made in response to this comment since the text has been in place.
2. Section MP.4.6.2 states in the first paragraph that a backfill sampling program will be set on a 500-foot grid. The first paragraph of Section MP.4.6.2 also

states that the sampling program will ensure that unsuitable materials aren't placed within the following depths of the land surface: four feet for uplands, six feet for ephemeral channels, and 10 feet for permanent impoundments or major channels and their 100-year floodplains. No changes have been made in response to this comment.

Comment DS 1 – Round 3

Response is not adequate. The LQD requires additional overburden suitability analysis to be included for all areas to be disturbed during mining. No additional baseline overburden suitability assessment raw data was provided for areas to be disturbed as previously requested.

Response DS 1 – Round 3

A commitment to obtain necessary overburden samples and conduct overburden suitability analysis prior to mining related disturbance, as required by WDEQ/LQD, has been incorporated into Section MP.4.3 of the Mine Plan. Also a commitment to obtain samples at least every 1,500 feet of trench length and at both ends of a trench has been added to Section MP.4.3. No change to Appendix D5 was made in response to this comment.

Comment DS 2 – Round 1

Appendix D5, Section D5.4. – documentation of protocols that differ from those approved by the Administrator in Guideline 1 typically require a signed document by LQD staff, not a request for different procedure signed by the company. This issue has been discussed with other mining companies and it has been determined that documentation of approval by LQD staff will be required if sampling/analytical protocols differ from those required by standing LQD policy. Please provide documentation of LQD staff approval for the 10-ft. overburden sampling interval.

Response DS 2 – Round 1

See Attachment A to this response package. This has also been added to Addendum D5-6 pages 4 and 5.

Comment DS 2 – Round 2

No comment received.

Response DS 2 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment DS 3 – Round 1

Appendix D5, Table D5.4-1 and Table D5.4-2 do not provide the current approved selenium concentration limits of 0-3 ppm (suitable), 3-8 ppm (marginal) and > 8 ppm

(unsuitable). Please be sure to include the current approved suitability criteria as shown in Guideline 1, page 42. This will change the conclusions of the discussion provided in the Appendix D5 text. Also, in Table D5.4-2, please provide the correct units for analytical results in mg/Kg, not mg/L.

Response DS 3 – Round 1

Please refer to BJ 6 response. Appendix D5 text, Table D5.4-1, and Table D5.4-2 are updated as requested.

Comment DS 3 – Round 2

No comment received.

Response DS 3 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment DS 4 – Round 1

Appendix D5, The permit application provided to LQD staff for review has duplicated data provided after the map identified as Exhibit 1 which should be deleted. The exhibit should also be better identified as Exhibit D5-1 or something similar to clarify placement in the permit application should it become separated from the document in the future.

Response DS 4 – Round 1

The electronic copies were provided to LQD staff for review purposes. The hard copy on file is the official version. Also, please see response to Comment DS 5.

Comment DS 4 – Round 2

Response is not adequate. This issue was not addressed in the Round 1 comment response package. Duplicate data in the hard copy should be deleted.

Response DS 4 – Round 2

The duplicate soil analysis reports have been removed from Appendix D5. The reports were removed from Addendum D5-5 (pages Addendum D5-5-21 through Addendum D5-5-92). The reports remain in Addendum D5-7 since this is the addendum specified for the soil analysis reports. The Change Index identifies this revision. No other change is necessary since page Addendum D5-5-92 was the last page and Addendum D5-6 has unique pagination.

Because the exhibit name of “Exhibit 1” is specific to the overburden sampling plan of 8/26/2013 that was presented to WDEQ, and this name is referenced in the document, the name has not been changed. The exhibit has a unique page number

(page Addendum D5-6-3) which will ensure that the exhibit is always located properly in the permit.

Comment DS 4 – Round 3

Response is not adequate. Two of the first proposed disturbance areas in Sections 22 and 15 have no overburden baseline sample analyses provided. The LQD understands that these areas are not accessible by drilling equipment at this time, but baseline sampling is required prior to initial disturbance. Therefore, the LQD may be amicable to approval of the application if a condition exists to provide an Appendix D5 revision with overburden.

Response DS 4 – Round 3

A commitment to obtain necessary overburden samples and conduct overburden suitability analysis prior to mining related disturbance, as required by WDEQ/LQD, has been incorporated into Section MP.4.3 of the Mine Plan. Also a commitment to obtain samples at least every 1,500 feet of trench length and at both ends of a trench has been added to Section MP.4.3. No change to Appendix D5 was made in response to this comment.

Comment DS 5 – Round 1

Appendix D5, Comparisons were made between Exhibit 1, the soils map and the Mine Plan map. Distinct differences in the affected area and permit boundaries were observed. Please be sure that correct boundaries for the proposed affected area and permit area are provided on all maps. Please also provide the contour interval on this exhibit.

Response DS 5 – Round 1

Addendum D5-6 is a copy of the overburden sampling plan as presented to WDEQ on 8/26/2013, which referenced Exhibit 1. Therefore, no changes to the exhibit will be made.

Comment DS 5 – Round 2

Response is not adequate. All exhibits presented in this permit must show the correct permit boundary and affected area boundaries, or, if the boundaries are removed, must reference a map of the same scale that contains the correct boundaries. Please correct the permit boundaries and affected area boundaries on all exhibits in this permit application.

Response DS 5 – Round 2

The permit boundary on Exhibit 1 in Addendum D5-6 was removed from the exhibit due to this boundary not being the same as that presented in the current permit as requested by the reviewer. However, the current boundary was not added to the

exhibit because this exhibit represents the information provided to, and approved by, WDEQ for the overburden sampling plan. Instead, a note has been added to the exhibit that references Exhibit C1a of the Adjudication File for the correct permit boundary of the Brook Mine.

Comment DS 5 – Round 3

No comment received.

Response DS 5 – Round 3

Round 2 response assumed to be adequate. No response is necessary.

Comment KM 2 – Round 1

Appendix D5, Page D 5-9 refers to samples collected from roof and floor from “many” locations throughout the permit area. However, supporting documentation appeared to be from only two borings and included two roof and one floor sample. In addition, the laboratory noted the floor sample did not have sufficient length and a correction factor was used to determine unconfined compressive strength. Additional structural analysis of the overburden, interburden and floor is required.

Response KM 2 – Round 1

During preparation of the MSHA Ground Control Plan additional coring of the coal and overburden will occur, data gathered from this activity will be supplied to WDEQ/LQD when it is received. Please see response to BJ 14.

Comment KM 2 – Round 2

No comment received.

Response KM 2 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment KM 3 – Round 1

Appendix D5, Please provide a discussion of the structural analysis of the overburden and interburden. The discussion shall address the potential for subsidence during and after mining.

Response KM 3 – Round 1

Structural analysis of the overburden, interburden, floor, and roof must be conducted for the MSHA Ground Control Plan. Information gathered for this plan will be provided when it is received. No text was updated in response to this comment. Please see response to BJ 14.

Comment KM 3 – Round 2

No comment received.

Response KM 3 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment KM 4 – Round 1

Appendix D5, Please discuss the aquifer(s) below the lowest coal seam and the potential for mining to impact these aquifer(s).

Response KM 4 – Round 1

The lowest coal seam targeted for mining is largely dry and is also confined by a clay layer. The underburden is not considered an aquifer therefore no impacts will occur.

Comment KM 4 – Round 2

No comment received.

Response KM 4 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment KM 24 – Round 3 (New Comment)

On page D5-12, Section D5.3.3.4, please specify what the underburden produces at 0.5 gpm.

Response KM 24 – Round 3 (New Comment)

Section D5.3.3.4 has been revised to clarify that groundwater is produced in the underburden at 0.5 gpm.

Comment Muk 1 – Round 1

Appendix D5, Section D5.3.3.2 Overburden and Interburden, 1. This section provides a discussion of the thickness of interburden and not overburden. Please provide a discussion (or a reference) on the thickness of the overburden. (MK)

Response Muk 1 – Round 1

A reference to the geologic cross-sections Addendum D5-3 has been added to Section D5.3.3.2.

Comment Muk 1 – Round 2

Response not accepted. In addition to the reference to Addendum D5-3 cross section figures, please provide a textual interpretation on the overburden thickness. Please

refer to D5.3.2 interburden thickness description as an example for the requested description. (MK)

Response Muk 1 – Round 2

A qualitative discussion of the Carney overburden thickness has been added to the first paragraph of Section D5.3.3.2.

Comment MuK 1 – Round 3

Response accepted.

Comment Muk 2 – Round 1

Appendix D5, Section D5.3.3.3 Coal, 2. On Page D5-10, there is a good discussion about the thickness of the two coal seams. Please provide a description on the depth from land surface to these coal seams. (MK)

Response Muk 2 – Round 1

A reference to the geologic cross-sections Addendum D5-3 has been added to Section D5.3.3.3.

Comment Muk 2 – Round 2

Response not accepted. In addition to the reference to Addendum D5-3 cross section figures, please provide a textual description/interpretation on the depth from land surface to the different coal seams targeted by the mine plan. (MK)

Response Muk 2 – Round 2

A qualitative description of the overburden material from the ground surface to the top of the Carney coal seam has been added to the middle of the second paragraph of Section D5.3.3.3. Discussion of the total material from the ground surface to the top of the Masters Seam has been added to the end of the third paragraph in Section D5.3.3.3. As requested, the revised text adds qualitative background on the varying depths of the total material from the land surface to the top of the two respective target coal seams, Carney and Masters.

Comment MuK 2 – Round 3

Response accepted.

Comment Muk 3 – Round 1

Appendix D5, Section D5.3.3.3 Coal, 3. Page D5-10 states, “Monarch seam exist within isolated portions of the mine areas as shown on the geologic cross sections in Addendum D5-3 and may present a secondary target.” However, Table D5.3-2 does not provide the coal quality characteristics for Monarch coal seam. If Monarch seam

is part of the mine plan, please include the coal quality characteristics of Monarch coal seam in Table D5.3-2 and a description of thickness and depth from land surface.

Response Muk 3 – Round 1

Table D5.3-2 has been updated with the coal quality characteristics for the Monarch seam. The overburden and seam thickness are included on the geologic cross-sections located in Addendum D5-3 referenced in the text.

Comment Muk 3 – Round 2

Response not accepted. It is acknowledged and accepted that Table 5.3-2 is updated with coal quality characteristics of Monarch coal seam. In addition to the reference to Addendum D5-3 cross section figures, provide a textual interpretation of thickness and depth from land surface for the Monarch coal seam. (MK)

Response Muk 3 – Round 2

Textual interpretation of the Monarch coal seam thickness and the depth of material above the top of the Monarch seam have been added to the end of fourth paragraph in Section D5.3.3.3.

Comment MuK 3 – Round 3

Response accepted.

Comment Muk 4 – Round 1

Appendix D5, Section D5.3.3.3 Coal, 4. Please include a discussion on Dietz (1, 2, 3) coal seams, if they are present in the mine permit boundary. If they are part of the mine plan, please include the coal quality characteristics in Table D5.3-2. (MK)

Response Muk 4 – Round 1

Discussion about the Dietz seams has been added in Section D5.3.3.3. These coal seams are not part of the currently proposed Mine Plan. Therefore, the quality data were not included in the table.

Comment Muk 4 – Round 2

No comment received.

Response Muk 4 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment Muk 5 – Round 1

Appendix D5, Section D5.3 Geology of Mine Area, 5. Please provide a description of the stratigraphic units below the Masters coal seam. (MK)

Response Muk 5 – Round 1

Section D5.3.3.4 has been added to discuss the underburden.

Comment Muk 5 – Round 2

Response not accepted. Please expand the discussion in the newly added Section D5.3.3.4 to include a textual interpretation of the underburden thickness. (MK)

Response Muk 5 – Round 2

The text in Section D5.3.3.4 has been revised to include discussion of the underburden thickness.

Comment MuK 5 – Round 3

Response accepted.

Comment Muk 6 – Round 1

Appendix D5, Addendum D5-3 Geologic Cross Sections, 6. Several of the geologic cross sections show UNK – unknown coal seam (Stringer). Please include a brief discussion about this stringer in Section D5.3.3.3 (MK)

Response Muk 6 – Round 1

Discussion about the stringers with unknown names has been added to fifth paragraph in Section D5.3.3.3.

Comment Muk 6 – Round 2

Response not accepted. In addition to the reference to cross section figures, please provide a textual description on the variability, interpreted thicknesses of these stringers. (MK)

Response Muk 6 – Round 2

Further discussion of the unknown coal stringers has been added to the end of the fifth paragraph of Section D5.3.3.3.

Comment MuK 6 – Round 3

Response accepted.

Comment Muk 7 – Round 1

Appendix D5, Addendum D5-4 Isopachs, 7. Please include the wells/drill holes (control points) used to interpret the isopachs and elevation contours in the maps. In addition, label all the control points with names and the thickness (or elevation, as

appropriate). This comment is applicable to Addendum D5-4, Exhibits 1 through 8. (MK)

Response Muk 7 – Round 1

Addendum D5-4 Exhibits 1 to 8 have been updated with drill hole locations as requested. A reference to Addendum D5-2 has been added to the exhibits for seam name and thickness.

Comment Muk 7 – Round 2

Response not accepted. It is acknowledged and accepted that the labels for all the control point names were included. However, thickness (or elevation, as appropriate) labels are not included as requested. Is it relatively easy for the software that was used for isopach elevation contours to label the thickness (or elevation)? The intent of this comment is to increase the robustness of the review of the interpreted contours by having appropriate point control data plotted in the same map. This comment is applicable to Addendum D5-4, Exhibits 1 through 8. (MK)

Response Muk 7 – Round 2

As requested, Addendum D5-4 Exhibits 1-8 have been revised to include thickness or elevation, as appropriate, of the applicable seam at each drill hole. It's worth noting, that generally the thicknesses/elevations were obtained from the lithologic logs in Addendum D5-2; however, some drill holes were interpreted differently using analysis of the electric logs (Addendum D5-2), lithologic logs (Addendum D5-2) and cross sections (Addendum D5-3).

Comment MuK 7 – Round 3

Response not accepted. The Table of Contents for Addendum D5-4 indicates that there is an "Exhibit 1: Overburden Isopach Overlying the Carney Coal Seam". This Exhibit is not present in the Cheyenne Office copy of the Round 2 response submittal. (MK)

Response MuK 7 – Round 3

Exhibit 1 Overburden Isopach Overlying the Carney Seam was inadvertently left out of the Round 2 comment response package. The exhibit has been provided as part of the Round 3 response package.

Comment Muk 8 – Round 1

Appendix D5, Addendum D5-5 Overburden, Roof and Floor Sample Analysis Table, 8. Please describe these analyses, methodology, results and provide an interpretation of their applicability to the mine/reclamation plan. (MK)

Response Muk 8 – Round 1

Please see response to BJ 14.

Comment Muk 8 – Round 2

No comment received.

Response Muk 8 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Appendix D6

Comment BJ 17 – Round 1

Appendix D6, Hydrology, Section D6.2.3, Pg. D6-20, Narrative in the last paragraph – why were no samples taken in Hidden Water Creek? Please explain.

Response BJ 17 – Round 1

No flow was observed in Hidden Water Creek during baseline sampling, so no samples were taken. The text has been revised to reflect that there were no flows observed.

Comment BJ 17 – Round 2

No comment received.

Response BJ 17 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment BJ 18 – Round 1

Appendix D6, Hydrology, Table D6.1-8, Regarding the HEC-RAS modeling results – The values for Hidden Water Creek and Slater Creek are identical. Is this accurate or is it a typographical error? Please clarify.

Response BJ 18 – Round 1

Updated table to remove typographical error.

Comment BJ 18 – Round 2

No comment received.

Response BJ 18 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment BJ 19 – Round 1

Appendix D6, Hydrology, Addendum D6-7, The well construction summary sheets need to have the coal bed names listed on the well lithology sections to the right of the well diagrams. Please label accordingly.

Response BJ 19 – Round 1

Updated as requested.

Comment BJ 19 – Round 2

No comment received.

Response BJ 19 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment BJ 20 – Round 1

Appendix D6, Hydrology, Attachment D6-8-A, Pg. D6-8-20, A statement is made that water within both coal seams is expected to be "high quality" and "good" water. Please define the meaning of those characterizations. Are these judgments based on MCLs or some other value? Are they being classified by some constituent values? Or is there another metric being used? Please clarify.

For example; referencing WQD R&R, Chapter 8, Table I, Class I, II, or III would better define the essential characteristics of the water quality. Numerical values of critical constituents, such as TDS, could also serve to define the quality as "good". More descriptive qualifiers are needed to judge the water quality.

Response BJ 20 – Round 1

Revised text as requested.

Comment BJ 20 – Round 2

No comment received.

Response BJ 20 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment BJ 21 – Round 1

Appendix D6, Hydrology, Attachment D6-8-E, Hydrographs, The x parameter, time, is depicted in days. It appears that this scale should have been adjusted to show time in hours due to the rapid changes seen in the hydrographs. Please use a finer scale for the x axis.

Response BJ 21 – Round 1

The hydrographs were originally set up with the x axis in days to allow the reader to review recovery data. Rather than modifying the original hydrographs, additional hydrographs, each of which depict the time axis in hours, were developed and included as pages D6-8-36a and D6-8-37a. These additional hydrographs detail the

water level changes over the portion of the pumping test period where the water level changes in the wells were the most rapid.

Comment BJ 21 – Round 2

No comment received.

Response BJ 21 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment BJ 22 – Round 1

Appendix D6, Hydrology, Attachment D6-8-F, The above mentioned comment can also be applied to the Carney well hydrographs. Please adjust the x axis to hours.

Response BJ 22 – Round 1

The hydrographs were originally set up with the x axis in days to allow the reader to review recovery data as well. Rather than modifying the original hydrographs, additional hydrographs, each of which depict the time axis in hours, were developed and included as pages D6-8-39a and D6-8-40a. These additional hydrographs detail the water level changes over the portion of the pumping test period where the water level changes in the wells were the most rapid.

Comment BJ 22 – Round 2

No comment received.

Response BJ 22 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment BJ 23 – Round 1

Appendix D6, Hydrology, Addendum D6-9, Pg. D6-9-2, Please include a column in Table D6-1 that indicates the elevation of the bottom of the well or TD. The total water column is important when assessing groundwater characteristics. Please correct.

Response BJ 23 – Round 1

Table D6-1 has been revised as requested.

Comment BJ 23 – Round 2

No comment received.

Response BJ 23 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment BJ 24 – Round 1

Appendix D6, Hydrology, Addendum D6-10, Pgs. D6-10-28 through D6-10-53, On the sample analysis reports, Please provide a brief narrative at the beginning of the lab results to give context to the data. Footnotes on the pages refer to MCLs or other parameters of water quality used for classification. However, the context that is used to define these parameters is missing. The assumption is made that these quality values are derived from the WQD R&R, Chapter 8, Table I definitions. But that is uncertain as no frame of reference is given. A brief sentence or two at the beginning of the section would clarify the numerical standards used in the report. Please adjust the narrative accordingly.

Response BJ 24 – Round 1

Page D6-10-27a was added to provide the requested narrative.

Comment BJ 24 – Round 2

No comment received.

Response BJ 24 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment BJ 25 – Round 1

Appendix D6, Hydrology, Please include the lithology of the sampled zone, either in the sampling information sheets, or on the sample analysis reports. Identification of the lithology sampled needs to be readily available with the analysis. This applies to all increments sampled. The sampled zones do have identification on the sample sheets with a shorthand nomenclature but persons unfamiliar with the lithology of the prospect area would be at a disadvantage when evaluating the sample results. A simple reference table at the beginning of the section would be sufficient. For example; MST=Masters, CRN=Carney, AL=Alluvium. Non-geologists need some frame of reference. Please create a clarifying narrative.

Response BJ 25 – Round 1

Reference text with abbreviations defined has been added on page Addendum D6-10-27a, as requested.

Comment BJ 25 – Round 2

No comment received.

Response BJ 25 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment DM 2 – Round 1

Appendix D6-Hydrology, D6.1x – The drainage basin description and surface water quantity sections are lacking detail. As mentioned in M. Kunze’s comments, the data from the terminated Slater Creek USGS gauge, and historical monitoring data from Big Horn Mine (permit no. 213) should be included.

The data collected at the monitoring stations that is presented in Addendum D6-4 does not appear to agree with the statement that Slater Creek is a “predominantly ephemeral” stream. Please reconcile the text with the data.

Response DM 2 – Round 1

Peak flow data from the USGS gage station on Slater Creek has been provided. See response to MK 30. The text in Section D6.1.5.2 has been updated to clearly indicate that Slater Creek is an ephemeral stream.

Comment DM 2 – Round 2

No comment received.

Response DM 2 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment DM 3 – Round 1

Appendix D6-Hydrology, D6.2.4 States that Groundwater Rights are in Appendix E2 of the Adjudication Volume. Groundwater Rights are actually listed in Appendix B2. Please Correct.

Response DM 3 – Round 1

Text revised as requested.

Comment DM 3 – Round 2

No comment received.

Response DM 3 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment KM 5 – Round 1

Appendix D6, 2. The pre-mining potentiometric map for the Masters coal seam shows the elevation of the groundwater at a higher elevation than the surface elevation in Sections 11 and 12 (in the vicinity of Slater Creek outside of the permit area). Either show the potentiometric surface as dotted across this area or revise the potentiometric

lines such that the groundwater elevation is below the ground surface elevation. Issue addressed by BJ Kristiansen. Please see comment No. 65.

Response KM 5 – Round 1

Exhibits D6.2-2 and D6.2-3 have been revised as requested.

Comment KM 5 – Round 2

No comment received.

Response KM 5 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment KM 6 – Round 1

Appendix D6, 3. The groundwater elevation for the Carney coal seam in monitor well 578417-CRN was given as 3795.59. The potentiometric contour for 3800 is drawn south of this monitor well. Please correct the contour line to be consistent with the groundwater elevation shown for monitor well 578417-CRN. Correction of this contour line may also adjust how the contour lines for 3780 and 3760 are drawn, such that they may be drawn consistent with other contour lines.

Response KM 6 – Round 1

Contours in Exhibit D6.2-3 have been revised as requested.

Comment KM 6 – Round 2

No comment received.

Response KM 6 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment KM 7 – Round 1

Appendix D6, 4. Page D6 8-8: The text refers to the pump test in the Carney coal seam. According to the procedures in the previous section, transducers were placed in CRN and CRN-OB; however on the referenced page, it states transducers remained in MST and MST-OB after pumping. LQD believes this to be a typographical error.

Response KM 7 – Round 1

LQD is Correct, this is a typographical error. The sentence should read “After the pumping period, the transducers remained in CRN1 and CRN-OB until 8:00AM on November 16, 2013.” Page D6-8-8 has been updated with the typographical error corrected and a replacement page is included.

Comment KM 7 – Round 2

No comment received.

Response KM 7 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment KM 8 – Round 1

Appendix D6, 5. Please discuss why the water levels rose in the Carney coal seam during the pump test in the Masters coal seam.

Response KM 8 – Round 1

This comment is addressed in comment 19 from Muthu Kuchanur.

Comment KM 8 – Round 2

No comment received.

Response KM 8 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment KM 9 – Round 1

Appendix D6, 6. What effect would a leaking pump have on the results of the pump test in the Masters coal seam?

Response KM 9 – Round 1

This comment is assumed to originate from the note on page Addendum D6-8-30. This note is in reference to activities that occurred immediately after the pumping test was shut off. The pump used for the pumping test did not have a foot valve. Therefore, after the pump was shut off, water in the discharge pipe immediately began to drain back into the well. The pump and piping was pulled out of the well as fast as possible and not all of the water in the pipe drained back into the well. However, the personnel conducting the pumping test were concerned that the water draining into the well would result in a rapid rise in the water level in the well and wanted to note it for the record on the field data sheet. It is estimated that less than 2 gallons of water actually drained out of the line into the well while the pump was being pulled which would result in a water level rise in the well of less than 0.25 foot. Given that the water level recovery in the well was very rapid immediately upon cessation of the pumping test (approximately 2 feet in the first ten minutes after the pumping test ended) and the early time recovery data was largely ignored for the purposes of doing the aquifer characterization evaluations, the leaking pump would not have had an impact on the results of the pumping test.

Comment KM 9 – Round 2

No comment received.

Response KM 9 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment KM 10 – Round 1

Appendix D6, 7. Please make sure all maps that are stamped are also signed and dated by the engineer, as required by regulation.

Response KM 10 – Round 1

All maps that are stamped will be signed and dated by the engineer as required by law. This does not include digital versions. The digital copies have been provided for WDEQ review. The hard copy is the official copy.

Comment KM 10 – Round 2

No comment received.

Response KM 10 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment KM 17 – Round 2 (New Comment)

Based on LQD's review of the well logs for Wells 578409-CRN-OB and 578409-MST-OB, the wells were screened in a coal seam, not in overburden. Please address all hydrologic information discussing overburden which was based on these wells and which may be in error.

Response KM 17 – Round 2 (New Comment)

The "OB" designation refers to "observation" rather than overburden. It is noted that this is a poor naming convention, but the naming had already been established. We apologize for the confusion. Additionally, Section D6.2.1.1 states that electric logs with resistivity data have demonstrated that the overburden is dry. Section D6.2.2.1 states that no monitoring wells were completed in the overburden or interburden because no water was found in these units during drilling. The nomenclature page in Addendum D6-10 (page Addendum D6-10-27A) has been revised to state:
OB=observation.

Comment KM 17 – Round 3

No comment received.

Response KM 17 – Round 3

Round 2 response assumed to be adequate. No response is necessary.

Comment KM 18 – Round 2 (New Comment)

The well logs for 578409-CRN and 578409-CRN-OB show the wells are screened in a coal seam labeled “Masters”, not Carney. This appears to be a typographical error on the well log. Please correct.

Response KM 18 – Round 2 (New Comment)

The typographical error has been corrected on the well logs 578409-CRN and 578409-CRN-OB.

Comment KM 18 – Round 3

No comment received.

Response KM 18 – Round 3

Round 2 response assumed to be adequate. No response is necessary.

Comment MK 29 – Round 1

Appendix D6-Hydrology, Section D6.1.2 Drainage Basin Description, 3. On Page D6-2 it is stated that Slater Creek is an ephemeral stream. Aerial imagery shows a riparian area with trees and subirrigation occurring along much of the channel. PEM wetlands are also present as documented in Appendix D10. It would seem that an ephemeral stream may not be able to support these features. Please provide the justification why Slater Creek is considered an ephemeral stream, and that the stream does not contain intermittent characteristics where it is not below the local water table for a portion of the year. (MDK)

Response MK 29 – Round 1

Please see response to DM2.

Comment MK 29 – Round 2

Response not accepted. Please include additional discussion on the hydrology of Slater Creek to include what was added to Page D11-8 in Appendix D-11 in response to Comment MK 8: *Infiltration of precipitation into the burn and then slow release of the stored water acts as a water source for the subirrigation and surface flow of Slater Creek.*

In addition, a comparison of the 2014 observed flows between the upstream and downstream stations on Slater Creek shows that flows were higher at the upstream

station for the majority of the period. This may suggest Slater Creek is a losing stream. Please discuss this further in the description of the hydrology of Slater Creek. (MDK)

Response MK 29 – Round 2

The additional discussion for Slater Creek hydrology has been added to the middle of the third paragraph in Section D6.1.2 as requested.

Comment MK 29 – Round 3

Response not accepted. The additional discussion on the hydrology of Slater Creek was included as requested. However, based on observations from the AVF reconnaissance site visit to Slater Creek on September 24, 2015, Slater Creek should not be characterized as an ephemeral stream. At the time of the site visit, standing water and a small amount of flow was observed in the channel, particularly in Section 12. This flow was observed during a dry period when no precipitation had occurred previously. Therefore the flow was due to some other source besides direct response to precipitation. The permit application indicates that some discharge to Slater Creek occurs from infiltration of precipitation into high perched scoria burn above the stream channel; this water is stored and slowly released to Slater Creek. It appears that this flow may form a shallow water table that provides baseflow to the channel.

In my opinion Slater Creek is better described as an intermittent stream with a few isolated reaches that may be perennial. Please revise any text in the permit application that describes Slater Creek as an ephemeral stream (Page D6-2-Section D6.1.2, Page D6-11 -Section D6.1.5.2, Page D6-11-Section D6. 1.5.3, Page RP-45-Section RP .8.5.2). (MDK)

Response MK 29 – Round 3

Slater Creek has been described as intermittent stream, as requested, in the following areas of the text: in Appendix D6, the third paragraph of Section D6.1.2, the third paragraph of Section D6.1.5.2, the second paragraph of Section D6.1.5.3.; in Appendix D11 the second paragraph of Section D11.3; and in the Reclamation Plan, the first paragraph of Section RP.8.5.2.

Comment MK 30 – Round 1

Appendix D6-Hydrology, Section D6.1.3.2 Flood Studies, 4. The USGS operated a peak flow gage on Slater Creek from 1967 to 1981 (Station No. 06299900, http://nwis.waterdata.usgs.gov/wy/nwis/inventory/?site_no=06299900&agency_cd=USGS). The gage was located just downstream of the proposed permit boundary near the confluence with the Tongue River. Please incorporate the annual peak flow data from this station into the permit application to illustrate the range of peak flows that might be expected from Slater Creek. (MDK)

Response MK 30 – Round 1

The text and Tables D6.1-2 and D6.1-3 have been revised to include peak flow data for USGS Station No. 06299900.

Comment MK 30 – Round 2

No comment received.

Response MK 30 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 31 – Round 1

Appendix D6-Hydrology, Section D6.1.3.2 Flood Studies, 5. Some of the U.S. Army Corps of Engineers references cited in the text (2000, 2001) do not appear in the References Section (Section D6.3). Please add these to the references list. (MDK)

Response MK 31 – Round 1

The text edits have been made as requested.

Comment MK 31 – Round 2

Response not accepted. The citation (U.S. Army Corps of Engineers, 2001) on Page D6-3 still does not appear in the reference list. Please add this to the Reference Section (Section D6.3). (MDK)

Response MK 31 – Round 2

The year in the U.S. Army Corps of Engineers citation on page D6-3 was changed to 2009 to match the references provided in Section D6.3. The change was an inadvertent oversight on the part of WWC.

Comment MK 31 – Round 3

Response accepted.

Comment MK 32 – Round 1

Appendix D6-Hydrology, Section D6.1.3.2 Flood Studies, 6. Please add the year to the Miller reference within the text (2003) and add this citation to the references list in Section D6.3. (MDK)

Response MK 32 – Round 1

The text edits have been made as requested.

Comment MK 32 – Round 2

No comment received.

Response MK 32 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 33 – Round 1

Appendix D6-Hydrology, Section D6.1.3.2 Flood Studies, 7. Please explain in the text if the existing impoundments (stock reservoirs, old mine pits, etc.) in both the Slater Creek and Hidden Water Creek drainages were considered in the routing functions for the HEC-HMS runoff estimates. These features would likely have an effect on attenuating peak flows. (MDK)

Response MK 33 – Round 1

The text has been revised to clarify the impoundments are not included the HEC-HMS model. As described, peak flow estimates should be conservatively high without attenuation of storm events by impoundments.

Comment MK 33 – Round 2

No comment received.

Response MK 33 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 34 – Round 1

Appendix D6-Hydrology, Section D6.1.3.2 Flood Studies, 8. As the text states on Page D6-5, the HEC-HMS runoff estimates in Table D6.1-7 are higher than the Miller (2003) equation estimates. Please provide a discussion in the text as to the reasonableness of the HEC-HMS estimates and why the HEC-HMS estimates are so much higher than the Miller (2003) equation estimates.

The Miller (2003) equation for this region used, in part, data from the USGS peak flow gage on Slater Creek, so it would seem that the Miller (2003) estimates may be more reasonable. For example, compared to the HEC-HMS estimates, the 15-year record from the peak flow gage on Slater Creek would not register at anything greater than a five-year event. Furthermore, the May 18, 1978 event on Slater Creek resulted in a peak flow of 1,100 cfs, which according to the HEC-HMS estimates would only be around a 2-year event. USGS studies have shown that the May 1978 flood event was estimated to be a 100-year event on some parts of the Tongue River in this area (<http://pubs.usgs.gov/pp/1244/report.pdf>). (MDK)

Response MK 34 – Round 1

A discussion in the text has been included that speaks to why the HEC-HMS results are higher than the Miller results. Additionally, a discussion acknowledges the report by the USGS on the May 1978 flood. The Miller analysis does appear to more closely estimate the peak flowrates for flood events for the short data record on Slater Creek. However, hydraulic calculations will continue to use the HEC-HMS results because of the conservative results and the ease in comparing to the postmining hydrologic environment. HEC-HMS provides a way to change the properties of the drainage basins to reflect what will be present postmining, and the comparison between the premining and postmining HEC-HMS models quantifies the magnitude of the impact the Brook Mine will have on the hydrologic balance.

Comment MK 34 – Round 2

No comment received.

Response MK 34 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 35 – Round 1

Appendix D6-Hydrology, Section D6.1.5.1 Monitoring Stations, 9. Please add the northing/easting State Plane coordinates for the four Brook Mine surface water monitoring stations to Table D6.1-11. (MDK)

Response MK 35 – Round 1

The locations of the surface water monitoring sites have been reported to the quarter-quarter, which is an adequate level of accuracy to report the monitoring locations.

Comment MK 35 – Round 2

Response not accepted. The location coordinates are needed for plotting the locations of the stations; the quarter-quarter does not provide the needed level of accuracy for this. Reporting the northing/easting State Plane coordinates for monitoring locations is standard practice in other LQD coal permits and would be required when reporting station information in the Annual Report as part of the LQD Coal Annual Report Format (CARF). Please add the northing/easting State Plane coordinates for the four Brook Mine surface water monitoring stations to Table D6.1-11. (MDK)

Response MK 35 – Round 2

The northing and eastings for the surface water monitoring station have been added to Table D6.1-11, as requested.

Comment MK 35 – Round 3

Response not accepted. Although the coordinates were included in Table D6.1-11 as requested, the location appears incorrect for the upstream monitoring station on Slater Creek (SM578512-SW-1). During the AVF reconnaissance site visit to Slater Creek on September 24, 2015, station SM578512-SW-1 was observed approximately 1,800 feet downstream from where it is currently shown in Exhibit D6.1-2. Please see the attached map and photo below. Please also note that the location observed in the field matches what is shown in Addendum D6-5 Figure D6-2. Please provide the correct coordinates and location for station SM578512-SW -1 in Table D6.1-11 and Exhibit D6.1-2. Please also update the coordinates in Table MP.7- 1 and the appropriate permit application Exhibits (Exhibit D6. 1-2, Exhibit MP.7- 1, Exhibit RP.8-5) to show the correct location of the station. (MDK)

Response MK 35 – Round 3

The locations of all the surface water stations have been revised throughout the permit to correctly match the surveyed locations. The following tables and exhibits have been revised as requested: Table D6.1-11, Table MP.7-1, Exhibit D6.1-2, Exhibit MP.7-1 and Exhibit RP.8-5.

Comment MK 36 – Round 1

Appendix D6-Hydrology, Section D6.1.5.1 Monitoring Stations,10. On Page D6-8, it is not necessary to mention the State of Montana water quality classifications of the Tongue River, as only State of Wyoming classifications and standards would apply. Please remove reference to the Montana standards. (MDK)

Response MK 36 – Round 1

The text has been revised as requested.

Comment MK 36 – Round 2

No comment received.

Response MK 36 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 37 – Round 1

Appendix D6-Hydrology, Section D6.1.5.1 Monitoring Stations, 11. On Page D6-8, second paragraph, it states that increased E.Coli from samples collected in 2006 were attributable to high flows in May-June 2010. Were the samples also collected in 2010 and not 2006? Please revise this sentence. (MDK)

Response MK 37 – Round 1

The sentence was revised to read more clearly. The sentence was saying that samples taken in 2010 experienced an increase in E.Coli bacteria compared to the samples collected in 2006.

Comment MK 37 – Round 2

No comment received.

Response MK 37 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 38 – Round 1

Appendix D6-Hydrology, Section D6.1.5.1 Monitoring Stations, 12. On Page D6-8, second paragraph, it would be informative to add that, in addition to the SCCD, other entities such as the Big Horn Mine, USGS, and WDEQ/WQD have collected water quality data on the Tongue River and Goose Creek near the proposed mine. It may also be informative to mention that sections of the Tongue River in the vicinity of the proposed mine are on the State's 303(d) list since certain uses are not supported due to impaired water quality. Goose Creek has also been on the 303(d) list in the past and a TMDL has been prepared. Information can be found at:

<http://deq.wyoming.gov/wqd/water-quality-assessment/resources/reports/> and <http://deq.wyoming.gov/wqd/tmdl/>. (MDK)

Response MK 38 – Round 1

The text has been revised as requested. Refer to Section D6.1.5.1.

Comment MK 38 – Round 2

No comment received.

Response MK 38 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 39 – Round 1

Appendix D6-Hydrology, Section D6.1.5.2 Surface Water Quantity, 13. The Big Horn Mine (WDEQ/LQD Permit 213) operated a station on Hidden Water Creek (HWC1-79) from 1979 to 1998. This station was located approximately ¼ mile upstream from station SM578415-SW-1 that was installed by the Brook Mine. The LQD Hydrology Database contains mean daily flow data from this station from 1982 to 1997, although several years are missing data. Baseline water quantity characterization of Hidden Water Creek in the Brook Mine permit application would be strengthened if these data were incorporated and discussed. The LQD can provide these data in electronic

format upon request or a more complete dataset may be available if requested from the Big Horn Mine. (MDK)

Response MK 39 – Round 1

Please see response to DM 2 and MK 30.

Comment MK 39 – Round 2

Response not accepted. The response referenced Comments DM 2 and MK 30, which refer to Slater Creek, not Hidden Water Creek. The LQD emailed the Hidden Water Creek data to WWC Engineering on July 8, 2015. Please incorporate and discuss the data to strengthen the baseline water quantity characterization of Hidden Water Creek in the Brook Mine permit application. (MDK)

Response MK 39 – Round 2

Please refer to the added text at the bottom of the second paragraph of Section D6.1.5.2 summarizing the flow data from the Big Horn Mine Hidden Water Creek former surface water monitoring station, HWC1-79. In addition, Table D6.1-14 has been added which provides the number of flow days per month and the maximum average flow for each day during a given flow month for the 1982 through 1997 period of record. The approximate location of HWC1-79 has been added to Exhibit D6.1-2.

Comment MK 39 – Round 3

Response accepted.

Comment MK 40 – Round 1

Appendix D6-Hydrology, Section D6.1.5.3 Surface Water Quality, 14. Please briefly discuss in the text the water quality results from Slater Creek in the context of WQD Surface Water Quality Standards for Class 3B waters (see Chapter 1 of WQD Rules and Regulations). This would reveal whether or not designated uses were being met prior to mining. The two samples from Slater Creek indicate no exceedances of Class 3B criteria, indicating uses are supported. (MDK)

Response MK 40 – Round 1

The text has been updated as requested.

Comment MK 40 – Round 2

No comment received.

Response MK 40 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 41 – Round 1

Appendix D6-Hydrology, Section D6.1.5.3 Surface Water Quality, 15. It is understood that water was not flowing in Hidden Water Creek so the applicant could not collect a sample for baseline purposes. However, as previously mentioned, the Big Horn Mine operated a station on Hidden Water Creek (HWC1-79) from 1979 to 1998. The LQD Hydrology Database contains nine water quality samples collected at this site from 1979 to 1989. Baseline characterization of Hidden Water Creek in the Brook Mine permit application would be strengthened if these data were incorporated and discussed. The LQD can provide these data in electronic format upon request. (MDK)

Response MK 41 – Round 1

Request for information is pending. No update to the permit has occurred at this time in response to this comment.

Comment MK 41 – Round 2

Response to the comment is pending. As discussed in the review of the response to Comment MK 39, the LQD emailed the Hidden Water Creek data to WWC Engineering on July 8, 2015. Please incorporate and discuss the data to strengthen the baseline water quality characterization of Hidden Water Creek in the Brook Mine permit application. (MDK)

Response MK 41 – Round 2

Please refer to the added text at the bottom of the second paragraph of Section D6.1.5.3 summarizing the surface water quality in Hidden Water Creek for the Big Horn Mine surface water monitoring station, HWC1-79. In addition, Table D6.1-15 has been constructed which displays concentrations of the nine samples collected for the 1979 through 1989 period of record. The approximate location of HWC1-79 has been added to Exhibit D6.1-2.

Comment MK 41 – Round 3

Response accepted.

Comment MK 42 – Round 1

Appendix D6-Hydrology, Section D6.1.5.4 Sediment Transport, 16. This section would be enhanced by including data from a single sediment sample collected on Slater Creek at USGS Station No. 06299900 (peak flow gage previously discussed in Comment No. 4). This sample was collected in June 1967 at a flow of 18 cfs. The TSS was 11,600 mg/L and the suspended sediment discharge was 564 tons/day. (MDK)

Response MK 42 – Round 1

The text has been revised to include the additional sediment sample as requested.

Comment MK 42 – Round 2

No comment received.

Response MK 42 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 43 – Round 1

Appendix D6-Hydrology, Addendum D6-5 – Rating Curves, 17. A rating curve developed using only the Manning equation will provide only a rough estimate of flows given the uncertainty in the Manning's roughness coefficient. It is recommended that direct discharge measurements also be taken over time to help evaluate the rating curves developed for the four monitoring sites. (MDK)

Response MK 43 – Round 1

The rating curves were developed for ephemeral streams that flow infrequently enough that water measurements cannot be taken at regular intervals. Manning's equation provides a reasonable and widely accepted mathematic approximation of stream flow rates.

Comment MK 43 – Round 2

Response not accepted. Developing a rating curve for an open channel using only Manning's equation and no direct measurements is not a standard practice. If a direct discharge measurement is not occasionally taken, the accuracy of the modelled rating curve will never be known. Please commit to periodically taking a direct measurement to evaluate the rating curves. (MDK)

Response MK 43 – Round 2

A commitment to obtain direct measurements of surface water monitoring stations, when possible, was added to Section MP.7.1.

Comment MK 43 – Round 3

Response not accepted. The text was updated but it is unclear what is going to be directly measured. For example, the text states: *In addition, direct measurements of surveyed cross sections will be obtained when possible.* It is not clear if the measurement will be of the water discharge or the cross section dimensions. Please revise the sentence so it is clear that direct discharge measurements will be taken when possible to evaluate the rating curves.(MDK)

Response MK 43 – Round 3

Section MP.7.1 has been revised to state that direct discharge measurements will be obtained when possible.

Comment MK 44 – Round 1

Appendix D6-Hydrology, Addendum D6-5 – Rating Curves, 18. Given the uncertainty in the Manning equation, the estimated flow rates provided in Table D6-3 and Attachment D6-5-A (Rating Tables) are reported at much too high a level of precision to be meaningful. Depending on the magnitude of the flow estimate, there should be only one or two significant figures provided. For example, 0.29 cfs = 0.3 cfs and 3,584.38 cfs = 3,600 cfs. Please revise these tables. (MDK)

Response MK 44 – Round 1

Summary Table D6-3 has been revised to engineering precision (no more than three significant figures). The values in Attachment D6-5-A are essentially raw data that are being reported to that magnitude to show the validity of calculations and to aid in curve development. Being raw data, the values were not revised from those previously reported.

Comment MK 44 – Round 2

No comment received.

Response MK 44 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment Muk 9 – Round 1

Appendix D6, Section D6.2.1 Regional Hydrogeology, 9. Page D6-12 states, “The potential groundwater in the formation as capable of yielding small quantities of water for domestic and stock use”. Please consider providing a range of estimates for well yields based on literature review or from the baseline data collected by the Brook Mine. (MK)

Response Muk 9 – Round 1

The text has been revised to indicate that coal is the only regional shallow aquifer that has a sufficient quantity of water to support domestic and stock use.

Comment Muk 9 – Round 2

No comment received.

Response Muk 9 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment Muk 10 – Round 1

Appendix D6, Section D6.2.1 Regional Hydrogeology, 10. The description in this section discusses only about the Fort Union formation. Please provide a description of

the overlying and underlying water-bearing formations (aquifers) and describe their hydrogeologic characteristics (flow direction, gradients, aquifer properties, general outcrop locations) on a regional context. It is noted that some of the overlying formations may be dry or discontinuous within the mine permit boundary. (MK)

Response Muk 10 – Round 1

Section D6.2.1 has been updated as requested.

Comment Muk 10 – Round 2

No comment received.

Response Muk 10 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment Muk 11 – Round 1

Appendix D6, Section D6.2.1 Regional Hydrogeology, 11. Page D6-12 states, “The overburden is comprised of sand lenses, clinker and alluvial that have the potential of water bearing bodies. Due to the topography in this area, the valley cut through these deposits. Therefore, they are discontinuous and would not hold large quantities of water.” It is noted that they are discontinuous and would not hold large quantities of water. Please provide additional justification for this statement by using the hydrogeologic data collected by the Brook Mine including any reference to the interpreted extent of dry zones based on drill holes, monitor wells and other applicable data. (MK)

Response Muk 11 – Round 1

Section D6.2.1.1 has been updated as requested.

Comment Muk 11 – Round 2

Response not accepted. In addition to a reference to Addendum D5-2, please provide a description/interpretation on the aerial and vertical extent of dry zones. (MK)

Response Muk 11 – Round 2

Discussion of the interpreted dry zones was added to the first paragraph of Section D6.2.1.1 (page D6-14). As discussed, the overburden is primarily dry as indicated by the lithologic logs in Appendix D5. A few boreholes did indicate the presence of water in the overburden; however, water was generally located in the shallow alluvium/colluvium material or in burn areas. These boreholes were generally located near streams or supporting tributaries throughout the permit area and adjacent areas.

Comment MuK 11 – Round 3

Response accepted.

Comment Muk 12 – Round 1

Appendix D6, Section D6.2.1 Regional Hydrogeology, 12. Please clarify if there were groundwater springs or seeps observed in the areas within or adjacent to the mine permit boundary. Include a discussion (or reference) on the surface water - groundwater interactions.(MK)

Response Muk 12 – Round 1

Section D6.2.2.5 has been updated as requested.

Comment Muk 12 – Round 2

No comment received.

Response Muk 12 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment Muk 13 – Round 1

Appendix D6, Section D6.2.2.1 Monitor Well Construction, Completion and Development, 13. Page D6-13 states, “No monitoring wells were completed in the overburden or interburden as no water was found in these units during drilling operations”. This information is critical in demonstrating the overlying units are dry. Therefore, for better documentation, please provide (or reference) a map with all the drill holes (both overburden and interburden) and their depths that were used to make this determination. (MK)

Response Muk 13 – Round 1

Section D6.2.2.1 has been updated as requested.

Comment Muk 13 – Round 2

No comment received.

Response Muk 13 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment Muk 14 – Round 1

Appendix D6, Section D6.2.2.1 Monitor Well Construction, Completion and Development, 14. Page D6-13 states, “Also one well 578409-MST-UB showed the presence of water in the underburden, while all the other wells drilled into the

underburden were dry and therefore not completed as wells.” Similar to the previous comment, this information is critical in demonstrating the underlying units are dry. Therefore, for better documentation, please provide (or reference) a map with all the drill holes (underburden) and their depths that were used to make this determination. (MK)

Response Muk 14 – Round 1

Please see response to Muk 13.

Comment Muk 14 – Round 2

No comment received.

Response Muk 14 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment Muk 15 – Round 1

Appendix D6, Section D6.2.2.2 Aquifer Tests, 15. Page D6-15 states, “Alluvial materials were also not analyzed during the aquifer testing.” The alluvial aquifer materials are one of the key factors in determining any impacts caused by mining to the alluvial aquifer. Alluvial aquifer tests will be helpful in understanding any surface water – groundwater interactions. Please provide justification for not conducting any aquifer tests in the alluvial wells. (MK)

Response Muk 15 – Round 1

The text in Section D6.2.2.2 has been updated.

Comment MuK 15 – Round 2

Response not accepted. The updated text just notes that there were three alluvial wells completed in Slater Creek. The original comment remains to be addressed. (MK)

Response MuK 15 – Round 2

A short discussion was added to the second paragraph of Section D6.2.2.2 after the context of the response to Comment MuK 16. The discussion explains that aquifer tests weren’t conducted in the alluvial wells because of the confining claystone intervals between colluvial/alluvial material and the differences in potentiometric head between the Carney coal and the colluvial/alluvial material. Therefore, it can be surmised that the confining intervals will provide a suitable barrier between the mining activities and the colluvium/alluvium, not necessitating aquifer tests in the alluvial aquifer.

Comment MuK 15 – Round 3

Response not accepted. It is acknowledged that there is a potentiometric head difference between alluvium and Carney coal seam. Please clarify if this potentiometric head difference is an artifact caused by CBNG dewatering. (MK)

Response MuK 15 – Round 3

It is unlikely that the potentiometric head difference between the alluvium and the Carney coal seam can be attributed to CBNG dewatering. The CBNG dewatering efforts have occurred approximately 2 miles away from the wells utilized for aquifer testing. Given the relatively low transmissivity of the coal it is unlikely that the CBNG dewatering efforts have significantly affected water levels in the wells utilized for the aquifer tests. The water levels measured in the Carney coal during the aquifer test demonstrate that the Carney coal is confined (see Addendum D6-8). If the drawdowns from CBNG dewatering were significant it is unlikely that the coal aquifer would still be confined. Discussion of the potentiometric head differences between alluvium and Carney coal as it relates to CBNG dewatering has been added to the end of the second paragraph in Section D6.2.2.2.

Comment MuK 16 – Round 1

Appendix D6, Section D6.2.2.2 Aquifer Tests, 16. Please provide justification for not observing the groundwater level responses in the alluvial aquifer during the two aquifer tests conducted by Brook mine. (MK)

Response MuK 16 – Round 1

No alluvial material was present in immediate vicinity of the clusters used for the pumping tests, hence there was no alluvial aquifer to monitor. Hidden Water Creek located to the east of the tested well cluster would be potentially the nearest location of alluvial material. However, as noted in Appendix D11, the fill material in Hidden Water Creek is more colluvial than alluvial.

In addition, as shown on the well completion summary logs in Addendum D6-7, multiple claystone intervals are located between the Carney Coal and the surface at the well cluster where the pumping tests were conducted. The top of the Carney Coal is approximately 90 feet below ground surface at the cluster well location which is approximately 50 feet below the level of any colluvial/alluvial deposits in Hidden Water Creek. Similarly, the potentiometric head in the Carney coal is some 50 feet below the level of the colluvial/alluvial deposits in Hidden Water Creek and if there were a direct hydraulic connection, there would be no water in the Hidden Water Creek colluvium/alluvium. Given the confining intervals between and the significant difference in potentiometric head between the Carney Coal and the Hidden Water Creek colluvium/alluvium, additional shallow monitoring above the Carney Coal was not necessary.

Comment Muk 16 – Round 2

Response conditionally accepted. Please incorporate the response into the permit application. (MK)

Response Muk 16 – Round 2

The context of the response was added to the second paragraph of Section D6.2.2.2.

Comment MuK 16 – Round 3

Response accepted.

Comment Muk 17 – Round 1

Appendix D6, Section D6.2.2.2 Aquifer Tests, 17. Page D6-16 states, “A report of these tests can be found in Addendum D6-8 and summary tabulation of the aquifer test results is included in Table D6.2.2”. Please consider including a comparison of these estimated aquifer properties with the aquifer tests conducted in other similar coal seams in the Powder River Basin (Example: Bighorn Mine). Given the number of tests conducted by the mine, this will increase the robustness of the reported estimates from the two aquifer tests. (MK)

Response Muk 17 – Round 1

As requested aquifer test results from Big Horn Coal Company and from the Youngs Creek Mine were added to the text.

Comment Muk 17 – Round 2

No comment received.

Response Muk 17 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment Muk 18 – Round 1

Appendix D6, Section D6.2.2.2 Aquifer Tests, It is noted that the aquifer tests were conducted for ~640 minutes. Will an increased aquifer test duration change the observed lack of interaction between the coal seams and the underburden? Please clarify with a brief description. (MK)

Response Muk 18 – Round 1

Given the head differences between the static water levels in the Carney Coal, Masters Coal, and the underburden it is unlikely that additional pumping would have resulted in any impacts to the water levels in the underburden. As shown on Table D6-2, (page Addendum D6-8-13) the initial water level in the Carney Coal was approximately 11.5 feet higher than the water level in the Masters Coal and the initial water level in the

Masters Coal was approximately 9 feet higher than the initial water level in the underburden well. If there were a hydrologic connection between the aquifers, it is likely that the water levels in the aquifers would have already come into equilibrium.

Comment Muk 18 – Round 2

Response conditionally accepted. Please incorporate the response into the permit application. (MK)

Response Muk 18 – Round 2

The context of the response has been added as the third paragraph of Section D6-8.3.2.3 of Addendum D6-8 “Pumping Test Report.” The context of the response seems to be better suited in the Pumping Test Report than in Section D6.2.2.2 of Appendix D6.

Comment MuK 18 – Round 3

Response accepted.

Comment Muk 19 – Round 1

Appendix D6, Section D6.2.2.2 Aquifer Tests, 19. The referenced Addendum D6-8, Table D6-2 shows an increase in water levels in two of the Carney coal seam observation wells during the Masters coal seam well pumping test. Please provide an explanation for this increase in water levels during the aquifer test. (Noordbergum effect?). (MK)

Response Muk 19 – Round 1

Upon review of the raw data collected during the pumping test it was noted that the drawdowns reported in Tables D6-2 and D6-3 were incorrectly reported. Replacement tables are included with this round of comment responses. As shown on the updated version of Table D6-2, the water level in both Carney observation wells (CRN-1 and CRN-OB) increased by 0.23 feet during the Masters coal pumping test. While the Noordbergum effect or other natural phenomena such as earth tides could have potentially influenced the water levels in adjacent aquifers during the pumping test, the increase in water levels can be largely attributed to barometric pressure changes. Water levels in the Carney observation wells were monitored using hand held electric lines and there were no adjustments for barometric pressure reported in Table D6-2. No site specific barometric data was collected during the pumping test period. However, to evaluate how barometric pressure changes may have impacted water levels in the wells, barometric data from the automatic weather observing station (AWOS) at the Sheridan County airport was obtained from the National Oceanic and Atmospheric Administration (NOAA) database. Barometric data from the Sheridan County Airport AWOS site was compared to water level measurements in Attachment D6-8-K. The data in Attachment D6-8-K demonstrates a clear correlation between barometric pressure and water level variations in the Carney coal monitor wells during

the Masters coal pumping test. Generally over the course of the Masters coal pumping test the barometric pressure went down (roughly 0.31 feet). A decrease in the barometric pressure is expected to result in an increase in water levels in a confined aquifer like the Carney coal aquifer which is what was observed.

Similar increases in water levels were also noted in the Masters Coal observation wells (MST-1 and MST-OB) during the Carney pumping test as noted on Table D6-3. Attachment D6-8-K demonstrates a clear correlation between decreasing barometric pressure and rising water levels in the Masters coal observation wells during the Carney Pumping test. In addition, during the Carney coal pumping test, water levels in the Masters coal observation wells were still recovering from drawdowns induced during the Masters coal pumping test which may also have contributed to rising water levels in the Masters coal. The increase in water level measured in the Masters coal observation wells is attributed to a combination of continuing water level recovery and barometric effects.

Only very minor water level variations in the Masters underburden well (MST-UB) were noted during both pumping tests. As shown on the well completion form in Addendum D6-7, (Page D6-7-8) MST-UB was completed in an interval that was predominately claystone and the estimated yield is less than 2 gpm. Essentially the strata in which MST-UB is completed is more of an aquitard than an aquifer. As a result, it takes a lot longer for the water levels in the well to adjust to changing atmospheric pressure because water does not enter or discharge from the formation very fast. The lack of barometric responses in the MST-UB are attributed to the fact that the low yielding aquitard in which the well is completed has a lower barometric efficiency than the wells completed in the coal aquifers.

Vented transducers utilized to monitor water levels in the both the pumping and adjacent monitor wells during each pumping test, automatically compensated for the barometric pressure effects. Therefore, barometric pressure effects did not affect the aquifer analyses that were developed based on the pumping test data.

Comment Muk 19 – Round 2

Response conditionally accepted. Please incorporate the response into the permit application. (MK)

Response Muk 19 – Round 2

The context of the response has been added to Section D6-8.3.2.3 of Addendum D6-8 “Pumping Test Report.” The context of the response seemed to be better suited within the Pumping Test Report than Section D6.2.2.2 of Appendix D6.

Comment MuK 19 – Round 3

Response accepted.

Comment Muk 20 – Round 1

Appendix D6, Section D6.2.2.2 Aquifer Tests, 20. Please provide a discussion (or reference) on the role of faults in the results of aquifer tests. (MK)

Response Muk 20 – Round 1

As noted in Addendum D6-8, (page D6-8-9) no hydrologic boundary conditions were observed in the pumping test data. As can be seen on Exhibit D6.2-2, the 578409 well cluster is located approximately 2,100 feet south and east of the nearest mapped fault. Since neither the Carney nor the Masters coal seams are very robust aquifers and have low transmissivity values, it is not surprising that the fault would not influence the pumping test results. For example, using Theis drawdown equations and the aquifer characteristics measured in the Masters coal (transmissivity of 3.2 ft²/day, storativity of 0.00025, and a pumping rate of 0.5 gpm) it is estimated that it would take over 70 days of continuous pumping for a water level response greater than 0.5ft to be observed 2,000 feet away. Therefore the likelihood that the faults would have influenced the pumping test results is very low.

Comment Muk 20 – Round 2

Response conditionally accepted. Please incorporate the response into the permit application. (MK)

Response Muk 20 – Round 2

The context of the response has been added to Section D6-8.4 of Addendum D6-8 “Pumping Test Report.” This seemed like a more appropriate location for the context of the response than within Section D6.2.2.2 of Appendix D6.

Comment MuK 20 – Round 3

Response accepted.

Comment Muk 21 – Round 1

Appendix D6, Section D6.2.2.4 Premining Potentiometric Surface, 21. Please provide some additional discussion on the premining potentiometric surface maps, including ranges of estimated hydraulic gradients and groundwater velocity in the different coal seams/aquifers. (MK)

Response Muk 21 – Round 1

As requested, additional discussion on the hydraulic gradients and groundwater velocity in the coal seams were added to Section D6.2.2.4.

Comment Muk 21 – Round 2

Response not accepted. The revised text states, “Groundwater gradients are low ranging from approximately 2 – 4 ft/year in the Masters Coal and 1 to 2.5 ft/year in the Carney Coal.” Please correct the sentence to reflect velocities. (MK)

Response Muk 21 – Round 2

The text in Section D6.2.2.4, second paragraph was revised to correctly refer to 2 to 4 ft/year and 1 to 2.5 ft/ year as velocities rather than gradients.

Comment MuK 21 – Round 3

Response accepted.

Comment Muk 22 – Round 1

Appendix D6, Section D6.2.2.4 Premining Potentiometric Surface, 22. Please provide a discussion (or reference) on the hydrologic effects of any adjacent operations (including past coal mining activity by historic mines and Bighorn mine) on the premining information and data. (MK)

Response Muk 22 – Round 1

The last paragraph in Section D6.2.2.4 describes how CBNG production has affected water levels in the eastern side of the permit area. The drawdowns resulting from CBNG production have occurred since any historic coal mining activity and have superseded any drawdowns that may have occurred due to historic mining. Therefore, no lingering hydrologic effects from past coal mining activities are present. The text in the last paragraph in Section D6.2.2.4 has been updated to describe how CBNG impacts have superseded any impacts from historic coal mining activities.

Comment Muk 22 – Round 2

No comment received.

Response Muk 22 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment Muk 23 – Round 1

Appendix D6, Section D6.2.2.5 Recharge and Discharge Areas, 23. This section provides a good discussion on the recharge areas. However, please clarify if there are any discharges from the coal seams within the permit boundary. (MK)

Response Muk 23 – Round 1

Within the permit boundary there are no discharges from the coal seams with the possible exception of the Carney coal on the far west side of the permit area. As shown on Exhibit D6.2-3, the Carney coal outcrops in the far western side of the permit area along the ridge tops but has been eroded away in the stream valleys. As a result, the Carney coal is perched with no real source of recharge and is generally dry. However, on the down dip side of the outcrop the coal may discharge within the permit if there is water in the coal seam to discharge. As shown on Figures MP-3-4.7-1 and MP-3-4.7-2 it was determined during the groundwater modeling efforts that most of the Carney coal within the far western side of the permit area was dry. Therefore, there is minimal (if any) discharge from the Carney coal within the permit area. Section D6.2.2.5 has been updated to clarify where discharges from coal seams may occur within the permit boundary.

Comment Muk 23 – Round 2

No comment received.

Response Muk 23 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment Muk 24 – Round 1

Appendix D6, Section D6.2.2.5 Recharge and Discharge Areas, 24. Please provide a range of estimates for recharge from precipitation to the aquifers within the permit boundary. Also, provide a discussion if this is the primary recharge mechanism for the aquifers within the permit boundary. (MK)

Response Muk 24 – Round 1

The estimated recharge rates from precipitation are summarized in Section 4.2.2 of Addendum MP-3. Addendum MP-3 describes recharge within the permit area in more detail than Section D6.2.2.5. A reference to MP-3 was added in Section D6.2.2.5.

Comment Muk 24 – Round 2

No comment received.

Response Muk 24 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment Muk 25 – Round 1

Appendix D6, Section D6.2.2.5 Recharge and Discharge Areas, 25. Consider providing a description of the soil properties within the permit boundary and the use of these percent soil distributions in the discussion of infiltration within the permit boundary. (MK)

Response Muk 25 – Round 1

The soil properties within the permit boundary are described in detail within Appendix D7. While different soil types are expected to have variable infiltration rates, the only infiltration rate that is significant for the coal aquifers is the infiltration rate assigned to the strata near the outcrop of the coal seams. Throughout the permit area the strata overlying the coal aquifer are generally dry. Therefore the primary source of recharge occurs at the outcrops. Scoria, in particular, plays a significant role in recharge of the coal seams because it usually occurs near the coal outcrop. Because of its highly permeable characteristics most of the precipitation that falls on the scoria infiltrates into the scoria where it either infiltrates into the coal or discharges along a seep line at the base of the scoria. As noted in the response to BJ Kristiansen's comment number 57, ash material between the base of the scoria and the coal seams sometimes limits how much of the water in the scoria actually comes into direct contact with the coal. Nevertheless, because a large percentage of precipitation falling on the scoria actually infiltrates into it, the scoria does provide a consistent water source for recharge into the coal outcrops. As noted in Addendum MP-3 Section 4.2.2 the scoria areas were delineated and assigned their own recharge zone because they do play a significant role in recharging the coal seams. Within the permit area, there are several locations where the coal seams outcrop as well. These outcrop areas were also assigned their own recharge zone because they also have a hydrologic connection to the coals. Since the strata overlying the coal seams to be mined in the Brook Mine are generally dry, the recharge component from the overburden to the coal is very low away from the outcrop areas. Because of the limited hydrologic interaction between the recharge at the surface and the coal in areas away from the outcrop, site specific changes in the recharge rates based on soil type will not impact the coal aquifers. For this reason additional analysis of the infiltration properties of the soils within the permit area represents a level of detail that is not necessary to describe the hydrologic impacts to the coal aquifers from the proposed mining operations.

Comment Muk 25 – Round 2

Response conditionally accepted. Please incorporate the response into the permit application to document the justification for not including additional analysis on infiltration. (MK)

Response Muk 25 – Round 2

The context of the response has been added as the second paragraph of Section D6.2.2.5 of Appendix D6.

Comment MuK 25 – Round 3

Response accepted.

Comment Muk 26 – Round 1

Appendix D6, Section D6.2.2.5 Recharge and Discharge Areas, 26. Page D6-18 states, “Collected groundwater elevation and hydrographs of the groundwater wells are found in Addendum D6-8”. Please revise this statement to reference the correct addendum - Addendum D6-9. (MK)

Response Muk 26 – Round 1

The text has been updated to read "Collected groundwater elevation and hydrographs of the groundwater wells are found in Addendum D6-9".

Comment Muk 26 – Round 2

No comment received.

Response Muk 26 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment Muk 27 – Round 1

Appendix D6, Section D6.2.3 Baseline Water Quality, 27. Page D6-20 states, “A piper diagram of the groundwater wells with measured values is presented in Figure D6.2-1. Please provide a discussion on the water quality types observed at each aquifer (Example: Is the water quality type variable within an aquifer? If yes, explain the potential reasons for this observed variability) based on the piper diagram. (MK)

Response Muk 27 – Round 1

Section D6.2.3 has been updated as requested.

Comment Muk 27 – Round 2

No comment received.

Response Muk 27 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment Muk 28 – Round 1

Appendix D6, Section D6.2.3 Baseline Water Quality, 28. Page D6-20 states, “The constituents that most frequently exceed the standard concentration limitations are ammonia, TDS, sulfate and manganese”. Please clarify if these constituents exceed the Chapter 8 standards at all the monitor wells. (MK)

Response Muk 28 – Round 1

Please refer to the Tables D6.2-8 thru D6.2-17 for exceedances of water quality based on Chapter 8 standards. Based on the tables, the concentrations are not exceeded at all monitor wells. No text edits were made in response to this comment.

Comment Muk 28 – Round 2

No comment received.

Response Muk 28 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment Muk 29 – Round 1

Appendix D6, Section D6.2.4 Groundwater Rights, 29. Page D6-20 states, “Adjacent and on-site groundwater rights are listed in Appendix E2 in the Adjudication Volume.” Cheyenne copy of the TFN does not have a sheet separator and a tab for Appendix E2 in the Adjudication volume. Please provide a sheet separator and tab for Appendix E2. (MK)

Response Muk 29 – Round 1

Refer to Comment DM3. Groundwater rights are provided in Appendix B of the Adjudication Volume. This text edit has been made in Section D6.2.4.

Comment Muk 29 – Round 2

Response not accepted. The response indicates Appendix B and the updated text indicated Appendix B2. Please clarify if that is Appendix B or Appendix B2. (MK)

Response Muk 29 – Round 2

The text in Section D6.2.4 was corrected to reference Appendix B as opposed to Appendix B2.

Comment Muk 29 – Round 3

Response accepted.

Comment Muk 30 – Round 1

Appendix D6, Section D6.2.4 Groundwater Rights, 30. Page D6-20 states, “Adjacent and on-site groundwater rights are listed in Appendix E2 in the Adjudication Volume.” Please provide a summary discussion/statistics on (i) total number of water rights, (ii) number of wells, (iii) aquifer, (iv) permitted water use and other relevant summary statistics. (MK)

Response Muk 30 – Round 1

Groundwater rights are listed in Appendix B of the Adjudication Volume. All of the aforementioned information is listed for each water right. Due to the constantly changing nature of water rights, a summary table is difficult to construct, and due to summary statistics not being required by WDEQ regulation, a summary statistics table has not been prepared.

Comment Muk 30 – Round 2

Response not accepted. It is acknowledged and noted that water rights vary with time. The intent of this comment is to request a summary of the raw data on the water rights presented in Appendix B, which is a snapshot in time before the approval of the proposed operations. It will enable the reviewers to get a clear understanding of the existing groundwater water uses and if there is a significant dependence on the affected aquifers. In addition, it is very useful information for the CHIA to provide a summary on the groundwater hydrologic concerns within the impact area. Please summarize (i) total number of water rights, (ii) number of wells (iii) wells grouped by aquifer and (iv) permitted water use. Example: Sum the total number of wells, provide a description on the percent of different types of uses. (MK)

Response Muk 30 – Round 2

A summary table (Table D6.2-18) has been added to Appendix D6. Text referencing this table has been added to Section D6.2.4, as well as text referencing discussion of impacted wells found in Addendum MP-3. Table D6.2-18 summarizes the total number wells not including cancelled, expired, abandoned, or suspended water rights. The table lists the permitted water use, the number of wells for each permitted water use, and the percent of total for each permitted use category. The table does not group the wells by aquifer. With nearly 500 wells being reported, the research required to determine the aquifer that each well is completed in would be exhaustive and, ultimately, not possible. Additionally, upon review of several of these water rights, one will note that most water rights have poor completion information. Water rights have either no lithology or have lithology that is so nondescript that a specific aquifer cannot be determined.

Comment MuK 30 – Round 3

Response accepted.

Comment Muk 31 – Round 1

Appendix D6, Section D6.2.4 Groundwater Rights, 31. Please provide a discussion (or reference) on the premine groundwater use (including the uses reported to SEO) within the permit boundary and the adjacent areas. (MK)

Response Muk 31 – Round 1

The premine groundwater uses as reported to the SEO within the permit boundary and the adjacent 3 miles are listed with each individual water right in Appendix B of the Adjudication Volume.

Comment Muk 31 – Round 2

Response not accepted. In addition to the reference to Appendix B, please include a textual description and summary of the premine groundwater use within the permit boundary and adjacent areas. (MK)

Response Muk 31 – Round 2

The text in Section D6.2.4 has been changed to include a discussion listing the predominant water uses in permit area and the adjacent 3-mile buffer. The text references the newly created Table D6.2-18 for a groundwater use summary.

Comment MuK 31 – Round 3

Response accepted.

Appendix D7

Comment DS 6 – Round 1

Appendix D7, Exhibit D7.3.-1 was compared with Exhibit MP.1-1. As required, it appears that the soil sampling was concentrated in areas where surface disturbance is to be expected. Please provide the contour interval on the soils map. For ease of review and to prevent misinterpretation, however, the map showing sampling locations should also clearly show the locations of proposed surface disturbances instead of providing these details on separate maps which may or may not present differing scale distances.

Response DS 6 – Round 1

The disturbance boundary can be found on Figure D7.1-1 and as the reviewer noted on Exhibit MP.1-1. No revision to exhibit D7.3-1 has occurred in response to this comment.

Comment DS 6 – Round 2

Response is not adequate. Please show the proposed surface disturbance locations on Exhibit D7.3.-1.

Response DS 6 – Round 2

Please refer to Comment DS 22 of the Mine Plan. Soil polygons have been added to Exhibit MP.4-2 integrating the disturbance boundary with the associated soil polygons. No revision to Exhibit D7.3-1 has occurred in response to this comment.

The reasoning behind this is to separate Mine Plan disturbance from baseline studies. It is RAMACO's opinion that baseline studies should only show those conditions prior to RAMACO's proposed operations. Additionally, when future revisions to the Mine Plan are potentially made, references to the Mine Plan in baseline studies could inadvertently be missed causing mistakes in the permit. However, RAMACO is open to showing baseline information within the Mine Plan for an easier evaluation of topsoil types stripped within the topsoil stripping areas.

Comment DS 6 – Round 3

No comment received.

Response DS 6 – Round 3

Round 2 response assumed to be adequate. No response is necessary.

Comment DS 7 – Round 1

Appendix D7, Page D7-4. The second paragraph of this page contains text that should be deleted. It states "If for whatever reason overall sampling intensity.....was determined to not be enough, it is proposed that any additional sampling be deferred and included a stipulation of a future pre-stripping soil assessment program." The Mine Plan and Reclamation Plan soils handling and replacement is contingent on adequate baseline sampling of the proposed area that will be affected by mining operations (topsoil balance and stockpile location planning and bond calculation). Therefore, baseline sampling for soils must be adequate prior to approval of any permit application. Please remove the inappropriate language from the Appendix D7 text. If future changes to the Mine Plan require additional soil sampling the issue will be addressed at that time.

Response DS 7 – Round 1

As requested, the second sentence of the second paragraph on page D7-4 has been deleted.

Comment DS 7 – Round 2

No comment received.

Response DS 7 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment DS 8 – Round 1

Appendix D7, Page D7-9. Text appears in this section that upon NRCS declaration of prime farmlands occurring in the permit area, a letter will be provided to the DEQ. A letter from the NRCS has been received and inserted in the permit declaring no prime farmlands to exist. The text, therefore, is not appropriate and should be removed.

Response DS 8 – Round 1

As requested, the sentence about prime farmland (the last sentence of the first full paragraph on page D7-9) has been deleted. A new reference, citing the letter received on October 31, 2015 (negative determination of prime farmland on Ramaco permit area) has been inserted on page D7-9 and the new reference has been added to the list of references on page D7-33.

Comment DS 8 – Round 2

No comment received.

Response DS 8 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment DS 9 – Round 1

Appendix D7, WS § 35-11-415(b)(iii) and the Coal Rules, Chapter 4, Section (c)(ix) state that if topsoil is virtually nonexistent or is not capable of sustaining vegetation then subsoil or a selected spoil material may be used as a topsoil or subsoil supplement. Additionally, due to the proximity of this mine to the Tongue River, a Class 2AB stream, limits for chemical contaminants will be imposed on discharges from the permit. Therefore, for areas where unsuitable or marginal topsoil chemistry is located (e.g. Wibaux channery loam, sample R13), an alternative soil replacement material should be identified and used in reclamation. Such a commitment must also be provided in the Mine Plan and Reclamation Plan to provide evidence that such issues that could affect the condition of reclamation and/or lead to off-site impacts will be addressed.

Response DS 9 – Round 1

No “alternate soil replacement material” is necessary for areas of Wibaux channery loam (Map Unit Wx). The lower soil material below 8 inches of Wibaux (any “C” horizon soil substratum below 8 inches, where existent) was not recommended for salvage and would be grouped with the overburden spoil for placement purposes. This lower material had an excessive volume of hard coarse fragments (>35%) and, based on one of the three Wibaux sample sites (R13), an “unsuitable” EC and SAR value for the 8 to 15 inch depth, EC=12.8 and SAR=17.3. Two new sentences, indicating no soil salvage of Wibaux below 8 inches in depth, has been added to the soils report on page D7-26, one sentence each for Map Unit Wx and Map Unit Wx-RO. Furthermore, the amount of suitable soil available for salvage across the entire proposed disturbance area is not limiting, with a calculated weight-average of 20.2 inches. Therefore, additional “alternate soil replacement material” is not necessary.

Comment DS 9 – Round 2

No comment received.

Response DS 9 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment DS 10 – Round 1

Appendix D7, The description of Map Unit G (Bauxson Loam, sample R-19) does not show marginal selenium that occurs between 22 – 48 inch depth range which could affect the salvage depth and may require special handling of the marginally suitable subsoil.

Response DS 10 – Round 1

Two new sentences have been added to the last paragraph on page D7-21 stating the presence of “marginal” rated Selenium values for lower material of Bauxson loam (Map Unit G) sample site R19. Strictly speaking, “marginal” rated soil material is not “unsuitable” and does not need to be specially handled. This lower Bauxson material has been recommended for salvage as “Subsoil”, not “Topsoil”.

Comment DS 10 – Round 2

No comment received.

Response DS 10 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment DS 31 – Round 2 (New Comment)

Section D7-2, Page D7-3 – A quotation and reference related to Schellinger, 2014, must be removed from the permit document as must all other quotations not supported by LQD documentation.

Response DS 31 – Round 2 (New Comment)

This quotation and reference is supported by LQD documentation. Please refer to Exhibit D7.2-1 of Appendix D7 which is a memorandum authored by David Schellinger, Soils Specialist on June 14, 2014. The quotation on page D7-3 accurately represents the sentence in the memorandum. Therefore, the quotation and reference remain in Appendix D7 as evidence for the extent of soil sampling in the Brook Mine permit area.

Comment DS 31 – Round 3 (New Comment)

Response is not adequate. The LQD Administrator has determined that LQD staff quotations not directly attributed to peer reviewed documents or documents signed by LQD staff should not be used in the text of permit documents; the quotes have no standing. The quotation of Mr. Schellinger, 2014, related to the survey required on affected areas where surface excavation would not occur must be removed.

Response DS 31 – Round 3 (New Comment)

The author of the citation has been revised to Wyoming Department of Environmental Quality (WDEQ-LQD). 2014b. However, the quotations and reference for the Memorandum to File remain in the text. As previously stated the quotation accurately represents the sentence in the memorandum as evidence for the extent of soil sampling in the Brook Mine permit area therefore the quotations will remain.

Appendix D8

Comment JJ 1 – Round 1

Appendix D8, 1. Please update the permit boundaries so that they are the same on Exhibit D8. 2-1 and Addendum D8 Map 1. I note specifically that lands should not be included within the permit boundary south of the interstate and that Section 10 TWN57N RNG85W displays different boundaries along the far west edge of the permit; it appears that the section lines are skewed between the two maps. The Addendum D8 Map 1 also is missing a sizeable amount of lands located in Section 21 TWN54N RNG84W which are included within the permit boundary of the Adjudication Exhibit 1 map. While comparing the maps I find that the maps display the same information in slightly different formats, please explain the necessity for two individual maps and at a minimum make them consistent against one another.

Response JJ 1 – Round 1

Baseline vegetation assessment maps have been updated to include the correct permit boundary. The discrepancy in the permit boundary is attributed to the difference in graphical representation between a USGS quad system and a PLSS system. The USGS quad system is now depicted. Exhibit D8.2-1 is a summary map for this Appendix and future updates made to this Appendix. This map will change throughout the life of the mine as future changes are incorporated. Addendum D8 Map 1 is for this Addendum and will not change throughout the life of the mine.

Comment JJ 1 – Round 2

The response is acceptable. The DEQ now understands the two separate maps and the boundaries now match.

Response JJ 1 – Round 2

Round 1 response is adequate. No response is necessary.

Comment JJ 2 – Round 1

Appendix D8, 2. Why does the study area not include all lands within the proposed permit boundary?

Response JJ 2 – Round 1

Portions of the proposed Brook Mine permit area not included within the study area were added during an October 2014 permit boundary change following completion of the baseline vegetation study. Additional studies were not conducted in these areas due to the limited size and similarity to areas within the study area. Section D8-1.1, page D8-1-5 text has been updated to explain the exclusion of these areas.

Comment JJ 2 – Round 2

The DEQ rules and regulations require vegetative characterization and baseline data for the entire permit area. Therefore, the lands located in Section 21, 22, and 15 that had not been previously included in the 2013 vegetation study area will require further attention. Please contact the DEQ to discuss the required baseline vegetation surveys. Due to the nature of the missing baseline vegetation data more comments may occur once all the data is submitted and applicable tables are updated.

Response JJ 2 – Round 2

The lands that are located in Sections 21, 22, and 15 that were not previously sampled in 2013 were sampled during 2015 quantitative baseline vegetation fieldwork. The data gathered for the areas in the above listed sections will be summarized for the WDEQ when the vegetation report is completed. The study area also needs to be

updated on both Exhibit D8.2-1 and Addendum D8 Map 1, and will be provided to WDEQ in a supplemental submittal.

Comment JJ 2 – Round 3

Comment remains open until the data is provided and reviewed.

Response JJ 2 – Round 3

Addendum D8-1 text and Addendum D8-1 Table D8-2 have been revised to include the additional areas for the Brook Mine Study Area. Exhibit D8.2-1 and Addendum D8-1 Map 1 have been revised to include the updated Brook Mine Study Area boundary.

Comment JJ 3 – Round 1

Appendix D8, 3. The acreage displayed on Table D8.2-1 should equal that of the land permitted on the Form 11. The Form 11 displays 4,548.8 acres while the table shows 4,581.7 acres a difference of 32.9 acres. Please update either the Form 11 or Table D8.2-1 to show the true permit acreage as it relates to the vegetation communities. Upon further review I find that Table D8-2 located on page Addendum D8-1-41 exhibits the proper acreages in relation to the Form 11, thus the values represented there may be more accurately displayed in Table D8.2-1.

Response JJ 3 – Round 1

Total acreage of the permit area is 4,548.8 acres as illustrated in Form 11 and Table D8-2. Table D8.2-1 has been updated to reflect the correct acreage.

Comment JJ 3 – Round 2

The response is acceptable.

Response JJ 3 – Round 2

Round 1 response is adequate. No response is necessary.

Comment JJ 4 – Round 1

Appendix D8, 4. Table D8.2-1 states there are 56 acres of agricultural lands; however, I am unable to locate Agricultural lands north of the interstate. Please, discuss and edit the values to display true acreages in relation to the proposed permit boundary. (See comment 3 for more clarification and another table for utilization to update values.)

Response JJ 4 – Round 1

Agricultural Lands within the permit area total 4.5 acres and are located in Section 21 TWN54N RNG84W. Table D8.2-1 has been updated to reflect the correct acreage of Agricultural Lands and other vegetation communities within the permit boundary.

Comment JJ 4 – Round 2

The response is acceptable.

Response JJ 4 – Round 2

Round 1 response is adequate. No response is necessary.

Comment SP 3 – Round 1

Appendix D-8 Vegetation Baseline, Page D8-3. Section D8.1.7. Guideline 2 is a non coal guideline. Please revise this sentence to reference the equation shown in Section D8-1.2.9 Sample Adequacy.

Response SP 3 – Round 1

Changed as requested. Additionally, Appendix D8 reference to Guideline 2 was replaced by reference for Chapter 2 in Section D8.1.1, page D8-1 and Section D8.3, page D8-4. Addendum D8 reference to Guideline 2 was replaced by reference for Chapter 2 in Section D8-1.2, page D8-1-5 and Section D8-1.9, page D8-1-38. Reference to Guideline 2 was removed from Section D8-1.2.9, page D8-1-12.

Comment SP 3 – Round 2

No comment received.

Response SP 3 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment SP 3 – Round 3

The response is satisfactory. The references to Guideline 2 have been removed.

Comment SP 4 – Round 1

Appendix D-8 Vegetation Baseline, Page D8-4. Section D8.1.8. Please revise the second sentence to, “The EXREFA is all of the unaffected area for each native vegetation community.”

Response SP 4 – Round 1

Changed as requested.

Comment SP 4 – Round 2

No comment received.

Response SP 4 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment SP 4 – Round 3

The response is satisfactory. The term EXREFA has been incorporated.

Comment SP 5 – Round 1

Appendix D-8 Vegetation Baseline, Page D8-1-8. Section D8-1.2.4. The last sentence in this section states that no sample locations occurred within the Brook Mine Permit Area. AG-13, 14, 17 and 25 are shown on Addendum: D8, Map 1 inside the permit area. Please correct this statement or the permit boundary on the Map.

Response SP 5 – Round 1

Baseline vegetation assessment maps have been updated to include correct permit boundary which illustrates AG-13, 14,17, and 25 are not located within the permit boundary.

Comment SP 5 – Round 2

No comment received.

Response SP 5 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment SP 5 – Round 3

The response is satisfactory. The permit boundary has been corrected so that no Agricultural transects fell within the permit boundary.

Comment SP 6 – Round 1

Appendix D-8 Vegetation Baseline, Page D8-1-11. Section D8-1.2.8. The last sentence of the first paragraph should be revised to, “Sample adequacy was not required for species diversity and composition.”

Response SP 6 – Round 1

Changed as requested.

Comment SP 6 – Round 2

No comment received.

Response SP 6 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment SP 6 – Round 3

The response is satisfactory. A sentence on sample adequacy for species diversity and composition has been revised.

Appendix D9

Comment DM 4 – Round 1

Appendix D9-Wildlife, Page D9-3 states that when a sage grouse confirmation letter is provided by WG&F, it will be provided to DEQ. It appears that the confirmation letter is already part of the package (Page D9-E3). Please reference the location of the letter.

Response DM 4 – Round 1

Page D9-3 was revised to reference Page D9-E3 as the location of the letter.

Comment DM 4 – Round 2

No comment received.

Response DM 4 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment WGF 1 – Round 1

(Appendix D9), We recommend this report become part of the annual reporting which will ensue throughout the operation of the mine.

Response WGF 1 – Round 1

Discussion was added at the end of Addendum D9-1 Section D9-1.6 on Page Addendum D9-1-31 titled “Monitoring and Mitigation” that references the sections of the Mine Plan where the annual wildlife report commitments are contained.

Comment WGF 1 – Round 2

No comment received.

Response WGF 1 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment WGF 2 – Round 1

(Appendix D9), We suggest coordinating with the USFWS regarding raptor mitigation as needed through the mining process.

Response WGF 2 – Round 1

The commitments to coordinate with the USFWS regarding raptors as well as T&E and other species of federal concern are provided in Section MP.18, Addendum MP-8 and Addendum MP-9 of the Mine Plan. Discussion was added at the end of Addendum D9-1 Section D9-1.6 on Page Addendum D9-1-31 titled “Monitoring and Mitigation” that references these discussions.

Comment WGF 2 – Round 2

No comment received.

Response WGF 2 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment WGF 3 – Round 1

(Appendix D9), We recommend mining reclamation practices consider providing suitable habitat for existing wildlife within the specifications required by DEQ-LQD.

Response WGF 3 – Round 1

The commitments to reclaim wildlife habitats are provided in the Reclamation Plan in Section RP.7 Wildlife Restoration. Discussion was added at the end of Addendum D9 - 1 Section D9-1.6 on Page Addendum D9-1-31 titled “Monitoring and Mitigation” that references the Reclamation Plan.

Comment WGF 3 – Round 2

No comment received.

Response WGF 3 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Appendix D10

Comment BJ 63 – Round 1

EXHIBITS, Addendum D10, The permit boundary layer on all of the exhibits covering the aquatic resource boundaries is incorrect. Please correct the permit boundary layers.

Response BJ 63 – Round 1

Aquatic resource inventory maps have been updated to include the correct permit boundary.

Comment BJ 63 – Round 2

No comment received.

Response BJ 63 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment DM 5 – Round 1

Appendix D10-Wetlands, D10-1.4 – Please include a copy of the letter requesting concurrence and jurisdictional determination sent to the ACOE At the end of the text, and reference the letter in the text.

Response DM 5 – Round 1

BKS Environmental Associates, Inc., on behalf of RAMACO, requested concurrence and jurisdictional determination from the USACE on May 29, 2015. A copy of the letter sent to the USACE has been included as Attachment D10-F. Section D10-4, page D10-10 text has been updated to reflect submittal of USACE request.

Comment DM 5 – Round 2

No comment received.

Response DM 5 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 45 – Round 1

Appendix D10-Wetlands, Section D10.2 Results, 19. The text may want to state when (what date) RAMACO requested the jurisdictional determination from the USACE, and include this request letter as an Addendum to Appendix D10. This would provide documentation that the request was submitted, as receipt of the USACE determination may lag behind the LQD permitting process. (MDK)

Response MK 45 – Round 1

See response to DM5.

Comment MK 45 – Round 2

No comment received.

Response MK 45 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Appendix D11

Comment BJ 26 – Round 1

Appendix D11, Alluvial Valley Floor, Section D11.1, RAMACO has requested LQD to make a determination on the nature of the drainages as potential AVF within the permit boundary as well as within ½ mile of the permit boundary. This would then entail analysis of the following drainages (distances are approximations): • Hidden water Creek – all (4 mi.)

- East Fork Earley Creek – lower 1 mile
- Slater Creek – lower 3 miles
- Tongue River – ½ mi. east of Interstate 90 and 4 mi. west of Interstate 90 at the Acme exit.

Prior to such a declaration, LQD staff will have to perform a variety of assessments designed to assist us in making a declarative statement about AVF classification. An AVF declaration will be made after in-depth study of the drainages. Such investigation will consist of, but not be limited to:

1. Field evaluation of the geomorphic and lithologic character of the drainages in question;
2. Determination of the agricultural characteristics of the stream course;
3. Examination of available bore hole logs that can be used to characterize the subsurface materials beneath the valley floor;
4. Determination of groundwater and surface water characteristics, both quantitative and qualitative, within the drainages in question;
5. Other evaluation processes that may be deemed necessary should initial findings warrant further, in-depth analyses.

Response BJ 26 – Round 1

Revised D11 text throughout to expand discussion on the drainages mentioned above. Incorporated previous AVF studies into Appendix D11. Information satisfying each statement can be found in the following locations as well as many other locations throughout the document:

1. Borehole logs provided in Addendum D11-3. Hidden Water Creek test pits dug by Big Horn Mine and discussed in Section D11.3 “Stream Laid Deposits.”

2. Agricultural characteristics of the stream courses are discussed in Sections D11.4.2, D11.4.3, and D11.5, in particular.
3. Bore hole logs are provided in Addendum D11-3. Additional test pit and borehole information was analyzed from the Big Horn Mine Permit No. 213.
4. Groundwater and surface water characteristics are discussed extensively in Appendix D6. Potential impacts to surface water and groundwater are discussed in the Mine Plan. The water resources are generally discussed in Section D11.4.
5. Additional research has been incorporated from the Big Horn Mine Permit No. 213. Corrections and reevaluations of the AVF study have been made throughout Appendix D11.

Comment BJ 26 – Round 2

The response to the Round 1 comment is adequate. The original comment from round 1 was intended to create dialogue between Brook Mine Brook Mine and LQD:

- a) The first goal was to engender further discussion in the permit document covering baseline information regarding the nature of all potential AVFs within the permit boundary. The Round 1 Response effectively established a starting point for both LQD and Brook Mine.
- b) Now that there is a common foundation for all parties, field analysis and data studies can be initiated. This work needs to be scheduled.
- c) Brook Mine must provide written surface owner consent enabling LQD staff access to all acreages covered in the AVF determination analysis. This includes lands defined in Round 1, BJ comment 26, itemized stream lengths by stream name and distance.

Response BJ 26 – Round 2

A field analysis and data study of the potential AVFs within the permit boundary and adjacent areas was scheduled for September 24, 2015. RAMACO has provided LQD personnel with written surface owner consent enabling LQD staff to access acreages covered in the AVF determination analysis. No edits to the text were made in response to this comment.

Comment BJ 26 – Round 3

No comment received.

Response BJ 26 – Round 3

Round 2 response assumed to be adequate. No response is necessary.

Comment BJ 70 – Round 3

An AVF determination for Slater Creek has yet to be finalized. The site was visited by LQD staff on September 24, 2015 for the purpose of gathering field data for the future AVF determination. This determination is in the process of analysis of data and a decision will be issued by the beginning of 2016.

Response BJ 70 – Round 3

No response required. No changes were made in response to this comment.

Comment BJ 27 – Round 1

Appendix D11, Alluvial Valley Floor, Addendum D11-3, Some of the borehole and well logs indicate a damp or wet interval encountered during drilling. Was an attempt made to allow wet materials to produce water prior to continuation of the hole or was water noted after adding another drill steel and lowering the kelly to begin the next 20 feet of hole? Typically, after the steel has been added and the compressor is engaged, a small amount of water can be air-lifted before the rotary table begins to turn. If so, are there field notes indicating water was observed during the connection?

Response BJ 27 – Round 1

It is standard procedure during drilling operations to provide wet or damp intervals an opportunity to produce water. If the intervals had produced water, this would have been noted in the drilling logs provided in Addendum D11-3. There are no other separate field notes that would provide additional information. No changes to the text were made.

Comment BJ 27 – Round 2

No comment received.

Response BJ 27 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 1 – Round 1

Appendix D11-AVF, Section D11.1 Introduction, 1. In the second paragraph on Page D11-1, the possible impacts of the proposed mining operation on the Tongue River AVF are dismissed because the area is planned for facilities level disturbance only. However, the groundwater model (Mine Plan Addendum MP-3) predicts drawdown in the Tongue River alluvium, thereby possibly affecting the AVF. As discussed in subsequent comments, additional analysis and monitoring is needed to comply with LQD Coal Rules and Regulations regarding AVFs. (MDK)

Response MK 1 – Round 1

Revised text to reference Mine Plan Section MP.6 concerning the Brook Mine’s effect on the Tongue River AVF.

Comment MK 1 – Round 2

Response not accepted. Mine Plan Section MP.6 does not explicitly mention or discuss the Tongue River AVF, or AVFs in general. Please provide a more thorough discussion in MP.6 on the possible effects of mining on the AVFs, particularly the Tongue River AVF with respect to drawdown in the Tongue River alluvium. Please also see the review of the response to Comment MK 21 below. (MDK)

Response MK 1 – Round 2

Discussion of the Tongue River and Goose Creek AVFs and their associated impacts has been added to the Mine Plan in Section MP.25. In addition, a reference to this section was added to Section D11.7 in Appendix D11 and Section MP.6 in the Mine Plan. As discussed in the text, no significant impacts to the alluvial valley floors within and adjacent to the permit area are expected as no mining is planned within these areas. Potential minor impacts that could occur is the insignificant loss of water due to temporary loss of flow from ephemeral tributaries contributing to the Tongue River and Slater Creek.

Comment MK 1 – Round 3

Response accepted.

Comment MK 2 – Round 1

Appendix D11-AVF, Section D11.2 Purpose and Scope, 2. On Page D11-2, please change “Wyoming Reclamation Act” to “Wyoming Environmental Quality Act”. (MDK)

Response MK 2 – Round 1

Revised text to state “Wyoming Environmental Quality Act.”

Comment MK 2 – Round 2

No comment received.

Response MK 2 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 3 – Round 1

Appendix D11-AVF, Section D11.3 Stream Laid Deposits, 3. For identification of unconsolidated stream laid deposits, LQD Guideline No. 9 (AVF) lists two items that may be used to positively identify unconsolidated streamlaid deposits: (1) channel

bars, splays, abandoned meanders, modern flood plains, or terraces, and (2) bedload or washload sediment deposited or transported in a nonbedrock channel bottom. Presumably, item (2) would be met at the streams identified within the AVF study area. However, the permit application does not address whether the channels contain geomorphic features from item (1). Please address in the text whether channel bars, splays, abandoned meanders, modern flood plains, or terraces are observed within the streams within the AVF study area. (MDK)

Response MK 3 – Round 1

Revised text to discuss the lack of channel bars, splays, abandoned meanders, modern flood plains, and terraces that qualify for AVFs in the Hidden Water Creek, Slater Creek, East Fork Earley Creek, and Earley Creek valleys.

Comment MK 3 – Round 2

No comment received.

Response MK 3 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 4 – Round 1

Appendix D11-AVF, Section D11.3 Stream Laid Deposits, 4. On Page D11-5, the conclusion that the materials in Hidden Water Creek valley do not meet the definition of unconsolidated streamlaid deposits, is in conflict with the conclusion from the Big Horn Mine Permit. The Big Horn Mine Permit (Appendix D6, Pages D6-151 to D6-158) describes the evaluation of unconsolidated streamlaid deposits on lower Hidden Water Creek. The permit states: “The conclusion verified from the pit observations is that these deposits are unconsolidated and stream laid. Small isolated patches of colluvium or bedrock can be found throughout the alluvial deposits, but these characteristics do not exclude the deposit from being stream laid.” Please evaluate the data and findings from the Big Horn Mine Permit before a conclusion is drawn about the absence of unconsolidated streamlaid deposits on Hidden Water Creek. (MDK)

Response MK 4 – Round 1

Revised text to discuss the findings of the Big Horn Mine from test pits in the Hidden Water Creek valley. Additionally, Exhibit D11.3-1 was revised to show the locations of the Big Horn Mine test pits in Hidden Water Creek in relation to both the Brook Mine permit area and the Big Horn Mine permit area. Added the Big Horn Mine Permit State Decision Document (SDD) 213-T2 to Addendum D11-2.

Comment MK 4 – Round 2

No comment received.

Response MK 4 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 5 – Round 1

Appendix D11-AVF, Section D11.3 Stream Laid Deposits, 5. The Big Horn Mine Permit also describes subirrigation and flood irrigation studies on lower Hidden Water Creek and concludes: “Due to the lack of subirrigation and extremely low potential for flood irrigation, Hidden Water Creek is not an alluvial valley floor.” Although this is in the approved mine permit, it does not appear that an explicit AVF determination for Hidden Water Creek was ever issued by the LQD, and the AVF findings in the SDDs for the Big Horn Mine Permit do not mention Hidden Water Creek. The Brook Mine Permit application should incorporate these previous AVF studies on Hidden Water Creek into Appendix D11. (MDK)

Response MK 5 – Round 1

See response to comment MK 4. Additionally, while the Big Horn Mine State Decision Documents do not mention Hidden Water Creek, the SDD 213-T2 states that “No other drainages are of significant size or lack the stream laid deposits necessary to be an Alluvial Valley floor within the renewal and/or amendment areas.” Hidden Water Creek is located within the renewal area and was not included within the originally declared AVF area. Although it was not mentioned by name, it has been declared not to be an AVF within the Big Horn Permit Area. This SDD has been added to Addendum D11-2 and discussion added to the text in Section D11.3.

Comment MK 5 – Round 2

No comment received.

Response MK 5 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 6 – Round 1

Appendix D11-AVF, Section D11.4.2 Extent of Subirrigation, 6. On Page D11-6 it is stated the three monitor wells were installed along the thalweg of Slater Creek. The transects in Exhibit D11.3-2 show that two of the wells (578513-AL and 578418-AL) are not along the thalweg but are rather upgradient of the channel. Please revise this description in the text. (MDK)

Response MK 6 – Round 1

Revised text to more accurately state that the monitor wells are along or near the thalweg.

Comment MK 6 – Round 2

No comment received.

Response MK 6 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 7 – Round 1

Appendix D11-AVF, Section D11.4.2 Extent of Subirrigation, 7. It appears that from Exhibit D11.1-1 that subirrigation is occurring on Earley Creek within the AVF study area. Please explain why subirrigation was not mapped on Earley Creek. (MDK)

Response MK 7 – Round 1

Revised Exhibit D11.1-1 to show potentially subirrigated lands on Earley Creek. The text was revised in Section D11.4.2 to reflect that subirrigation potentially occurs along Earley Creek.

Comment MK 7 – Round 2

No comment received.

Response MK 7 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 8 – Round 1

Appendix D11-AVF, Section D11.4.2 Extent of Subirrigation, 8. On Page D11-6, second paragraph, the alluvial/colluvial potentiometric surface is dismissed as a source of subirrigation along Slater Creek. However, the other hydrologic processes responsible for the subirrigation are not identified. Please discuss in the text why subirrigation is occurring along Slater Creek. (MDK)

Response MK 8 – Round 1

Revised text to discuss the presence of burn areas overlying residual coal ash bands that serve as aquacludes which prevent water from entering or escaping the coal below.

Comment MK 8 – Round 2

No comment received.

Response MK 8 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 9 – Round 1

Appendix D11-AVF, Section D11.4.2 Extent of Subirrigation, 9. The cross-sections in Exhibit D11-3-2 would be improved if the active channel and any floodplains or terraces were shown. A description of the materials in the active channel bottom would also help identify unconsolidated streamlaid deposits. (MDK)

Response MK 9 – Round 1

Revised Exhibit D11.3-2 to show the 2-year, 24-hour flood inundation area and the location of the active channel. Data regarding the materials in the active channel bottom are presented in the borehole logs in Addendum D11-3.

Comment MK 9 – Round 2

Response not accepted. The cross-sections were updated as requested but it is not clear if the materials from the borehole logs truly represent the active stream channel, as many of the borehole logs are shown to be tens to hundreds of feet away from the active channel. Please provide a description of the materials in the active channel bottom of both Hidden Water Creek and Slater Creek. (MDK)

Response MK 9 – Round 2

Borehole locations were chosen in areas that would represent the natural extent of the alluvium in the channel and those that could be accessed in order to obtain these boreholes. So while boreholes are located ten to a hundred feet off the natural channel in actuality, these areas are the closest location that could be physically accessed to obtain the boreholes due to the limitations of the drilling equipment. In addition, to ensure the boreholes were drilled in a location that was properly depicting the potential alluvial/colluvial material of the channel, the presence of scoria alluvial/colluvial material was used as an identifier. As exhibited in Addendum D11-3, scoria material was recorded in the majority of borehole logs. Text has been added to Section D11.3 regarding the selection of borehole locations.

Comment MK 9 – Round 3

Response accepted.

Comment MK 10 – Round 1

Exhibit D11.4-1, the extent of irrigated lands shown in Sections 2 and 11 along Slater Creek may not be correct. According to the summary for the Hart Brothers Ditches water right (permit 1317) in the SEO database, the land being irrigated under the water right has decreased to 23 acres:

THIS FACILITY IS MADE UP OF TWO DITCHES. THE WEST DITCH HAVING A POINT OF DIVERSION IN LOT 2 AND THE EAST DITCH HAVING A POINT OF DIVERSION IN THE SENE OF SECTION 3, T57N, R85W. T57N, AND 58N, R85W

HAS BEEN DEPENDENTLY RESURVEYED. REQUEST FROM PADLOCK RANCH TO ELIMINATE 67 ACRES AS FOLLOWS: 32 ACRES IN THE SWSW OF SECTION 2 - 30 ACRES IN THE NENW AND 5 ACRES IN THE NWNW OF SECTION 11 ALL IN T57N, R85W, RECEIVED AND GRANTED. REQUEST OF ELIMINATION AND PROOF OF OWNERSHIP FILED IN MISCELLANEOUS NOTICES. ADJUDICATED WITH H.H. WILLIAMS AS APPROPRIATOR. PERMIT RECORD REFLECTS SOURCE AS SLATER CREEK AND WATER STORED IN THE HART BROTHERS RESERVOIR, P60R, XR7825A, HOWEVER CERTIFICATE RECORD REFLECTS .91 CFS FOR THE IRRIGATION OF 64 ACRES. BOC PETITION II 89-4-2 BY PADLOCK RANCH WAS GRANTED TO ISSUE AMENDED CERTIFICATE C77/290A TO REDESCRIBE LANDS WITHOUT CHANGING LAND TOTALS AND TO CHANGE POINT OF DIVERSION FROM THE RECORD POINT IN THE NWNE AND SENE OF SECTION 3, 57N, R85W AND PARTIAL MEANS OF CONVEYANCE FOR 41 ACRES (.59 CFS) TO THE WILLIAMS DITCH, P8710D, C77/289A DIVERTING WATER FROM SLATER CREEK IN THE SESW OF SECTION 34, T58N, R85W AS RECORDED IN ORDER RECORD BOOK 36, PAGES 385-390 AND RECEIVED ON CD3/578A. THIS LEAVES 23 ACRES STILL IRRIGATED UNDER THIS PERMIT. LANDS SHOWN BELOW AS "AME" AND "ELI" ARE THOSE ORIGINALLY DESCRIBED UNDER THIS DITCH.

Please clarify the irrigated acreage status for the Hart Brothers Ditches water right with the SEO and revise Exhibit D11.4-1 accordingly. (MDK)

Response MK 10 – Round 1

Exhibit D11.4-1 was revised to more accurately capture irrigated lands on Slater Creek in Sections 2 and 11 of Township 57 North, Range 85 West.

Comment MK 10 – Round 2

No comment received.

Response MK 10 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 11 – Round 1

Appendix D11-AVF, Section D11.4.4 Water Quality, 11. On Page D11-7, it is not necessary to mention the State of Montana water quality classifications of the Tongue River, as only State of Wyoming classifications and standards would apply. Please remove reference to the Montana standards. (MDK)

Response MK 11 – Round 1

Removed text referencing State of Montana water quality standards.

Comment MK 11 – Round 2

No comment received.

Response MK 11 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 12 – Round 1

Appendix D11-AVF, Section D11.4.5 Agricultural Practices, 12. On Page D11-8, second paragraph, it states that Exhibit D11.1-1 shows that sufficient water supply does not exist for consistent agricultural practices in East Fork Earley Creek. However, Exhibit D11.4.1 shows a point of diversion for Earley Creek Ditch No. 1 and several areas of irrigated lands less than 40 acres in East Fork Earley Creek. As documented in Addendum D11-4, there is an adjudicated water right for irrigation in this location. So there may be sufficient water supply for consistent agricultural practices. The text needs to further expand on this discussion of East Fork Earley Creek since there is an adjudicated water right for irrigation. (MDK)

Response MK 12 – Round 1

Revised text to include the Earley Creek Ditch No. 1 water right, but explained that subirrigation must not be prevalent in East Fork Earley Creek because no culvert or other conveyance structure is present beneath I-90. If subirrigation was prevalent and without a conveyance structure beneath I-90, substantial amounts of water would back up against the interstate.

Comment MK 12 – Round 2

Response not accepted. Please also add to the text any history available on the Early Creek Ditch No. 1 water right and the irrigation associated with the water right. I looked at several years of aerial imagery and it does not appear that any areas have been irrigated under this water right in recent times. I am able to view what appears to be the headgate and two ditches. It is possible that irrigation was abandoned long ago, which would support the contention that there is not sufficient water supply for consistent agricultural practices. Nonetheless, the water right remains fully adjudicated according to the SEO water rights database, so more discussion of this area is warranted in the text. (MDK)

Response MK 12 – Round 2

Text at the end of the second paragraph of Section D11.5 was added regarding the Earley Creek Ditch No.1. As presented in the text, based on CIR, imagery of the area, vegetation studies and absence of a conveyance structure under Interstate 90, the Earley Creek Ditch No.1 doesn't appear to have been used for irrigation purposes for some time.

Comment MK 12 – Round 3

Response accepted.

Comment MK 13 – Round 1

Appendix D11-AVF, Section D11.4.5 Agricultural Practices, 13. On Page D11-8, last paragraph, it states that the hay meadows along Slater Creek in Sections 2 and 11 are not within the boundaries of subirrigation or natural flood irrigation.

(a) The areas symbolized as irrigated lands in Exhibit D11.4-1 do not necessarily correspond to hay meadows, as the imagery shows hay meadows in the SWNE, SENE, and NESE of Section 11, and the NWSW of Section 12. The hay meadows appear to correspond with the area mapped as “AG” in the Vegetation Map (Exhibit D8.2-1) in Addendum D8.

(b) The irrigated area shown in Exhibit D11.4-1 near the Landen Ditch does overlap with subirrigation mapped in Exhibit D11.1-1.

Please re-evaluate the area of hay meadows along Slater Creek and revise the text accordingly. Comments No. 15 and 16 below also relate to this issue. (MDK)

Response MK 13 – Round 1

The text was revised in Section D11.5 to reflect the presence of limited hay meadows and overlapping of irrigation with subirrigation on the upper reaches of Slater Creek in Sections 2, 3, 11, and 12 of Township 57 North, Range 85 West. Exhibit D11.4-1 was revised to show irrigation in Sections 2, 3, 11, and 12 of Township 57 North, Range 85 West.

Comment MK 13 – Round 2

No comment received.

Response MK 13 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 14 – Round 1

Appendix D11-AVF, Section D11.4.5 Agricultural Practices, On Page D11-8, last paragraph, it states that, besides Hart Bros Ditches, the remaining portion of the Slater Creek valley does not contain SEO water rights. This is not the case as Exhibit D11.4-1 shows Landen Ditch in the NENW of Section 11. This water right (P11695) does not appear in Addendum D11-4. Please revise the text and add this water right to Addendum D11-4. (MDK)

Response MK 14 – Round 1

The text was revised in Section D11.5 to discuss the Landen Ditch water right (P11695). A copy of the Landen Ditch water right was added to Addendum D11-4.

Comment MK 14 – Round 2

No comment received.

Response MK 14 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 15 – Round 1

Appendix D11-AVF, Section D11.4.5 Agricultural Practices, 15. The irrigated acreage for the Landen Ditch water right appears to be 18 acres for one point of use and 22 acres for a second point of use. Please add these areas to Exhibit D11.4-1. (MDK)

Response MK 15 – Round 1

Exhibit D11.4-1 was revised to more accurately reflect irrigated lands in the vicinity of the Landen Ditch.

Comment MK 15 – Round 2

No comment received.

Response MK 15 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 16 – Round 1

Appendix D11-AVF, Section D11.4.5 Agricultural Practices, 16. The Hall Ditch (SEO Permit 5195), mapped in Section 11 of Exhibit D11.4.1, apparently provides irrigation water for hayfields in the NESE of Section 11 (30 acres) and the NWSW of Section 12 (22 acres). This water right does not appear in Addendum D11-4. Please add this water right to the Addendum and add the irrigated acreages to Exhibit D11.4-1. (MDK)

Response MK 16 – Round 1

A copy of the Hall Ditch water right (SEO Permit 5195) was added to Addendum D11-4. Exhibit D11.4-1 was revised to depict irrigated lands in Section 12, Township 57 North, Range 85 West. The text in Section D11.5 was revised to discuss the Hall Ditch water right.

Comment MK 16 – Round 2

No comment received.

Response MK 16 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 17 – Round 1

Appendix D11-AVF, Section D11.6 Extent of Alluvial Valley Floor, 17. Portions of Earley Creek and East Fork Earley Creek are within the AVF study area yet the permit application does not attempt to conclude if these streams contain AVFs. Presumably, the LQD will need to make an AVF finding on these streams. (MDK)

Response MK 17 – Round 1

See response to Comment BJ 26. Additional discussion has been added to aid WDEQ in the AVF findings of East Fork Earley Creek and Earley Creek. Both valleys are upstream of mining activities proposed by RAMACO such that no material damages are expected to either valley.

Comment MK 17 – Round 2

Response not accepted. Additional discussion was added for East Fork Earley Creek, but not Earley Creek. However, it is unclear from Comment BJ 26 if the LQD intends to make an AVF determination for Earley Creek. Additional response to this comment may be needed after checking with other LQD staff on whether or not a determination will be made for Earley Creek. (MDK)

Response MK 17 – Round 2

As discussed with LQD personnel, the majority of Earley Creek is outside of the permit area and ½ mile adjacent study boundary, however a small portion of the creek intersects the ½ mile study boundary in T.57N., R.84W. in the northwest quarter of Section 16 and southwest quarter of Section 9. These portions of land are outside of any planned surface disturbance and groundwater impacts to the area are not expected; therefore, a study of these lands was not included in Appendix D11. Discussion of Earley Creek will remain in Appendix D6. No changes to the D11 text were made in response to this comment.

Comment MK 17 – Round 3

Response accepted.

Comment MK 18 – Round 1

Appendix D11-AVF, Section D11.6 Extent of Alluvial Valley Floor, 18. The first bullet for Slater Creek on Page D11-9 dismisses the positive identification of unconsolidated

stream laid deposits because a layer of colluvial material was found over alluvial material. However, as stated in Appendix D5 on Page D5-8 and Page D5-9, sub-rounding of the clinker present in the cuttings suggests water driven deposition of limited extent. Also, as discussed in Comment No. 3, the application did not evaluate unconsolidated streamlaid deposits in a manner that is consistent with identification criteria listed in LQD Guideline No. 9. The application has not provided sufficient evidence that unconsolidated stream laid deposits are not present along Slater Creek. (MDK)

Response MK 18 – Round 1

See response to Comment MK 3. The discussion on the Slater Creek valley has been further expanded to include the absence of unconsolidated stream laid deposits such as channel bars, splays, abandoned meanders, modern flood plains, and terraces that qualify for AVFs. Exhibit D11.3-1 clearly indicates the presence of undifferentiated alluvium and colluvium (Qac) in the Slater Creek valley.

Comment MK 18 – Round 2

No comment received.

Response MK 18 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 19 – Round 1

Appendix D11-AVF, Section D11.6 Extent of Alluvial Valley Floor, 19. The third bullet on Page D11-9 for Slater Creek should be clarified that the width of natural flood irrigation in the valley is generally insufficient to provide for economic agricultural practices. However, economic agricultural practices clearly occur immediately upstream of the proposed mine permit boundary because of artificial flood irrigation of hayfields adjacent to the channel. These practices are documented by existing water rights that are approximately 100 years old. Please revise this discussion. (MDK)

Response MK 19 – Round 1

The text in Section D11.6 of Slater Creek's third bullet was revised to include the irrigated hayfield upstream of the permit boundary.

Comment MK 19 – Round 2

No comment received.

Response MK 19 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 20 – Round 1

Appendix D11-AVF, Section D11.6 Extent of Alluvial Valley Floor, 20. The fifth bullet for Hidden Water Creek on Page D11-9 seems to dismiss the positive identification of unconsolidated stream laid deposits because of colluvial material with shallow bedrock. However, as previously noted, this conflict with information in the Big Horn Mine permit concerning unconsolidated stream laid deposits on Hidden Water Creek. (MDK)

Response MK 20 – Round 1

Refer to response of Comment MK 4. The Big Horn Mine permit boundary has been added to Exhibit D11.1-1. The text in Section D11.6 has been updated to include a summary of the discussion stating that the Big Horn Coal Permit No. 213-T2 SDD determined the limits of the AVF, and no portion of Hidden Water Creek was determined as being AVF.

Comment MK 20 – Round 2

No comment received.

Response MK 20 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 21 – Round 1

Appendix D11-AVF, Section D11.7 Mining of Alluvial Valley Floor, Although the LQD has not yet issued its formal finding, the segment of the Tongue River adjacent to the proposed permit area, which was not declared under previous LQD findings, likely contains an AVF.

(a) If this AVF is significant to farming, the applicant must comply with LQD Coal Rules and Regulations Chapter 3, Section 2(d)(ii) and demonstrate that the proposed mining operations will not materially damage the quantity and quality of water that supplies the Tongue River AVF. The absence of direct mining on the Tongue River AVF does not relieve the requirement of assessing the probable hydrologic impacts of the proposed operation to the AVF, particularly since the groundwater model in Mine Plan Addendum MP-3 predicts drawdown in the Tongue River alluvium. (MDK)

(b) Regardless of the significance to farming, the applicant must also maintain and/or restore the essential hydrologic functions of the Tongue River AVF. The applicant must therefore identify the essential hydrologic functions of the Tongue River AVF and either (1) provide an analysis that the proposed operation will not hamper the essential hydrologic functions, or (2) demonstrate that the essential hydrologic functions will be restored. The essential

hydrologic functions for another part of the Tongue River AVF are described in the Big Horn Mine Permit SDD (shown in Brook Mine Appendix D11 on Page Addendum D11-2-27), so this may be a good starting point to consider. (MDK)

(c) A monitoring system is also required to demonstrate the essential hydrologic functions are maintained, as per LQD Coal Rules and Regulations, Chapter 5, Section 3(b)(ii). Since the groundwater model (Mine Plan Addendum MP-3) predicts 2.5 feet of drawdown in the Tongue River alluvium, the monitoring system may likely contain alluvial monitoring wells and periodic evaluation of color-infrared imagery. (MDK)

Response MK 21 – Round 1

Revised text as requested. Revised text by adding information regarding the essential hydrologic functions of the declared AVFs (Tongue River and Goose Creek) from the SDD in Addendum D11-2. Also, added portion of text to describe possible monitoring system and plan for the AVFs that may be affected.

Comment MK 21 – Round 2

Response not accepted. Please see the review of the response to Comment MK 1. Please provide a more specific reference to the section of the Mine Plan (MP.6) that discusses the probable hydrologic impacts to the Tongue River and Goose Creek AVFs. Please also provide a more specific reference to the appropriate portion of the Mine Plan or Reclamation Plan that provides further details on the AVF monitoring plan. (MDK)

Response MK 21 – Round 2

See comment MK 1-Round 2 response. Discussion of the AVF monitoring plan for the Tongue River has been added to the Mine Plan in Section MP.25 as well as the Reclamation Plan in Section RP.10. In addition, monitoring locations have been updated on Table MP.7-4, Exhibit MP.7-1 and Exhibit RP.8-5.

Comment MK 21 – Round 3

Response not accepted. With respect to the three proposed alluvial monitoring wells, please state in the text in Section MP.25 that these wells will be installed prior to commencing any mining-related disturbance.

Response MK 21 – Round 3

A statement that the alluvial monitoring wells along the Tongue River will be installed prior to mining related disturbance was added to the last paragraph in Section MP.25 of the Mine Plan.

Comment MK 22 – Round 1

Appendix D11-AVF, Section D11.7 Mining of Alluvial Valley Floor, 22. The essential hydrologic functions of the adjacent Goose Creek AVF must also be maintained during the proposed mining operation. The application needs to list these functions, as described in the Big Horn Mine Permit SDD (shown in Brook Mine Appendix D11 on Page Addendum D11-2-27). A monitoring system is also required to demonstrate that the essential hydrologic functions will be maintained. (MDK).

Response MK 22 – Round 1

See response to comment MK 21.

Comment MK 22 – Round 2

Response not accepted. The essential hydrologic functions of the Goose Creek AVF are listed, but the text does not explicitly address a monitoring system for the Goose Creek AVF, only the Tongue River AVF. Please commit to a similar monitoring system for the Goose Creek AVF to demonstrate that the essential hydrologic functions will be maintained. The text should also reference the appropriate portion of the Mine Plan or Reclamation Plan that provides further details on the AVF monitoring plan. (MDK)

Response MK 22 – Round 2

See comment MK 1-Round 2 response. Discussion of the AVF monitoring plan for Goose Creek has been added to the Mine Plan in Section MP.25 as well as the Reclamation Plan in Section RP.10. In addition, monitoring locations have been updated on Table MP.7-4, Exhibit MP.7-1 and Exhibit RP.8-5.

Comment MK 22 – Round 3

Response accepted.

Comment MK 104 – Round 2 (New Comment)

The permit application suggests that the Tongue River and Goose Creek contain AVFs. Appendix D-11 must therefore also include a discussion of the importance of these AVFs to farming, as discussed in LQD Guideline No. 9 (see Part IV, Section C). (MDK)

Response MK 104 – Round 2 (New Comment)

Text in Section D11.5 has been revised to discuss the importance of AVFs to farming.

Comment MK 104 – Round 3

Response conditionally accepted. The permit application has not provided the information discussed in LQD Guideline No. 9, Part IV, Section C for determining the importance of farming to the AVFs that presumably will be declared by the LQD on the Tongue River and Goose Creek. However as per Guideline No. 9, this information is

only required for "affected AVFs". The permit application implies that the AVFs on the Tongue River and Goose Creek should not be considered "affected AVFs" since farming would not be interrupted, discontinued, or precluded, and the essential hydrological functions of the AVFs would be preserved during mining. No mining is scheduled for these areas and the disturbance that is proposed appears to be minor enough such that essential hydrologic functions would not be affected. Therefore a significance to farming determination for these AVFs does not appear to be required. This may be subject to change pending other LQD staff input when the AVF determinations are made. (MDK)

Response MK 104 – Round 3

No response is required. No changes have occurred in response to this comment.

Comment MK 105 – Round 2 (New Comment)

Appendix D-11 (or perhaps Mine Plan MP.6) should also include a discussion of whether the proposed operation would interrupt, discontinue, or preclude agriculture use of the Tongue River and Goose Creek AVFs. This discussion should evaluate if the predicted drawdown in the Tongue River alluvium (Mine Plan Addendum MP-3) would result in any loss of agricultural use of the AVF. (MDK)

Response MK 105 – Round 2 (New Comment)

Text has been added to Mine Plan Section MP.25 to describe how agricultural use of the Tongue River and Goose Creek AVFs will not be precluded.

Comment MK 105 – Round 3

Response accepted.

Comment MK 121 – Round 3 (New Comment)

D11.5 Agricultural Practices. The CHIA site inspection report (Dated October 21, 2015 and mailed to Randall Atkins c/o WWC Engineering) discussed the abandoned Conable Reservoir and Ditch and Lateral system in Sections 12 and 13 within the proposed Brook Mine permit area. According to the SEO water rights database, a water right for Conable Reservoir was granted in 1901 (P223.0R). The purpose of the reservoir was to store water for irrigation of lands under the Conable Ditch and Lateral, which also held a water right to divert 1.46 cfs (P3088.0D). The water right allowed for using the water for irrigation of 100 acres of land adjacent to Slater Creek in T57N, R85W, Section 13. Both water rights were cancelled in 1906, and it is unknown the extent that the irrigation was ever developed. The dam for the reservoir has long since failed, allowing Slater Creek to flow freely through. In Section D11.5, please incorporate the history of the Conable Reservoir and Ditch and Lateral System, as this demonstrates there was a historical attempt to irrigate lands in the Slater

Creek valley within Section 13 of the proposed permit boundary. The attempt apparently failed and was abandoned and the water rights were cancelled. (MDK)

Response MK 121 – Round 3 (New Comment)

Discussion of the Conable Reservoir and Conable Ditch and Lateral were added as the fourth paragraph in Section D11.5.

Comment MK 122 – Round 3 (New Comment)

D11.7 Mining of the Alluvial Valley Floor. Although no mining is planned on the AVFs on the Tongue River and Goose Creek, the disturbance boundary is within a small part of the Big Horn Mine AVF extent (Exhibit D 11.6-1). It appears that this area includes the SP-1, OB-1, and OB-2 features in Section 21 on Exhibit MP .5-1, which was updated for this round. Please include a statement in the text of Section D11.7 that there is some minor disturbance proposed within the AVF extent. Please also see Comments 7 (MK 126) and 8 (MK 127) below that request this be addressed in the relevant sections of the Mine Plan and Reclamation Plan. (MDK)

Response MK 122 – Round 3 (New Comment)

Minor disturbance is planned within the declared Big Horn Mine AVF extent in Section 21 of Township 57 North, Range 84 West. Text discussing the minor disturbance has been added to the first paragraph of Section D11.7, as well as a reference to the applicable sections of the Mine Plan and Reclamation Plan for further discussion of the disturbed AVF.

Mine Plan

Comment BJ 28 – Round 1

Volume 11, Mine Plan, Section MP.1.2.1, pg. MP-4, Tunnel and pillar widths are discussed in general terms. Please approximate a range for the widths, in feet, in the narrative to give context to the discussion.

Response BJ 28 – Round 1

Added text as suggested.

Comment BJ 28 – Round 2

No comment received.

Response BJ 28 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment BJ 29 – Round 1

Volume 11, Mine Plan, The fifth sentence, beginning with "To minimize the amount of exposure..." does not make sense. Please rewrite the sentence for clarity.

Response BJ 29 – Round 1

Added text as suggested.

Comment BJ 29 – Round 2

No comment received.

Response BJ 29 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment BJ 30 – Round 1

Volume 11, Mine Plan, The narrative also references figure MP.1-3 as a general schematic of the highwall mining operation. The figure depicts significant vertical highwalls above the mining operation. The text mentions that the highwalls will be vertical where the Masters and Carney converge but the illustration depicts conditions where the coal seams appear to be separated by a considerable thickness of parting. It is our experience that vertical highwalls in the Powder River Basin are unstable and should be discourage wherever possible. What would the maximum thickness of burden approximate where the vertical highwalls will exist? Please include an average on the schematic as has been done for pit width and bench width.

Response BJ 30 – Round 1

The figure has been updated to include the average depths.

Comment BJ 30 – Round 2

No comment received.

Response BJ 30 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment BJ 31 – Round 1

Volume 11, Mine Plan, Pages MP-3 and MP-4, These pages describe the highwall mining operation in vague generalities. The narrative states that the continuous miner will advance into the working face to a depth of 2,000 feet. The manufacturer's specifications for the ADDCAR system state that the depth of a cut is 1,600 feet. Is this a discrepancy of 400 feet or is there a difference in mining tools and the ADDCAR system comes with multiple depth capacities. Please clarify.

Response BJ 31 – Round 1

Conversations with ADDCAR representatives indicates that they will be able to extend the range of the highwall mining system so cuts up to 2,000 feet can be achieved.

Comment BJ 31 – Round 2

No comment received.

Response BJ 31 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment BJ 32 – Round 1

Volume 11, Mine Plan, A general word of guidance – Ramps are mentioned in the narrative as designed to an 8% grade. The Cat 777 can generally handle this grade fairly well under most conditions. The Mack Titan trucks, however, may be problematic under certain conditions. Entering the pit on the ramp could be difficult for the Mack trucks with pups if the ramp has been watered to control dust. The overburden materials used for ramp systems are generally silty with a clay matrix and overwatering can create slipping hazards for vehicles. A truck with multiple trailers will have difficulty navigating these conditions. A 6% ramp under these situations is strongly advised.

Response BJ 32 – Round 1

Revised text as suggested.

Comment BJ 32 – Round 2

No comment received.

Response BJ 32 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment BJ 33 – Round 1

Volume 11, Mine Plan, The narrative describes the tunnel width as variable, depending on the cutting head chosen. Please indicate approximate footages of the tunnel widths. For example, Bucyrus and Joy manufacture continuous miners that have heads ranging from 11 to 12 feet in width. A mention of those widths would clarify the narrative. Also the protective coal pillars are described but have no dimensions indicated. The pillar width to tunnel width is crucial so an approximation of the remnant pillars width in feet is required. Please include approximate widths for tunnel and pillar widths.

Response BJ 33 – Round 1

See response to Comment BJ 28. The text has been updated as requested.

Comment BJ 33 – Round 2

No comment received.

Response BJ 33 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment BJ 34 – Round 1

Volume 11, Mine Plan, Section MP.1.2.2, The dozer push method of overburden removal is not adequately described. Though Figure MP.1-4 does depict the dozer push materials to some extent, the overlapping nature of the multiple lift system can be confusing to some. The narrative on page MP-4 is too brief. Please elaborate further on the dozer push staging and overburden removal. Perhaps an illustration that depicts the dozer removal in stages would be more appropriate. This can be accomplished by creating a series of illustrations rather than only one. Please clarify the methodology.

Response BJ 34 – Round 1

Revised text as requested. Created Figure MP.1-5.

Comment BJ 34 – Round 2

No comment received.

Response BJ 34 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment BJ 35 – Round 1

Volume 11, Mine Plan, Section MP.1.4, Pg. MP-5, The last sentence does not make sense. Please rewrite the sentence.

Response BJ 35 – Round 1

Removed last sentence for clarity.

Comment BJ 35 – Round 2

No comment received.

Response BJ 35 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment BJ 36 – Round 1

Volume 11, Mine Plan, Section MP.4.2.3, Pg. MP-15, The discussion of temporary topsoil stockpiles describes creating a ring ditch around the topsoil pile if there is a potential for water erosion during the 2 week to 6 month life of the pile. Since the climate is unpredictable and subject to rapid changes, temporary topsoil stockpiles (2 weeks to 6 months) will be required to have ring ditches in all cases with no qualifiers. LQD writes more violations concerning inadequate topsoil practices than any other issue. Rewrite the narrative to indicate that all temporary topsoil stockpiles will have a ring-ditch and berm created for piles having a life of 2 weeks or more. Keep in mind that even a short-lived topsoil stockpile could generate a violation if a sudden rainstorm were to erode the soil and waste it on the surrounding terrain. RAMACO may want to allow for this as well

Response BJ 36 – Round 1

Updated text as requested.

Comment BJ 36 – Round 2

No comment received.

Response BJ 36 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment BJ 37 – Round 1

Volume 11, Mine Plan, Section MP.4.3.4, Pg. Mp-17, A swell factor of 16% is being used to convert bank cubic yards to loose cubic yards. The number was generated from information attained from Big Horn Coal (PT213). Where was this information located? Many of the coal mines in the northwestern corner of the Powder River Basin use a swell factor of 13% - 14% since the overburden material is finer grained, with a higher clay content than mines on the eastern margin of the basin. Please cite the use of a 16% swell factor.

Response BJ 37 – Round 1

Revised text as requested. Table MP.4-9 provides typical swell and load factors of materials.

Comment BJ 37 – Round 2

No comment received.

Response BJ 37 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment BJ 38 – Round 1

Volume 11, Mine Plan, Section MP.6.1, Pg. MP-39, The second paragraph discusses surface runoff attenuation during mine years 4 and 5. The peak flow rates for precipitation events will be attenuated by the mining trenches that lie perpendicular to the flow in the local drainages. What flow events are expected to be attenuated by the trenches? Will the 2 year, 10 year, or 100 year events be considered as an average event? Please modify the narrative, in general terms, to define which precipitation event will be used when designing the pit drainage plans.

Response BJ 38 – Round 1

Updated text as requested.

Comment BJ 38 – Round 2

No comment received.

Response BJ 38 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment BJ 39 – Round 1

Volume 11, Mine Plan, Section MP.8, Pg. MP-47, The narrative mentions that potable water will be hauled to the mine and placed in a cistern. Why is a cistern system being considered for potable water instead of a reverse osmosis unit? The local residents use such systems as do the mines. How large of a cistern will be used for water storage? Please modify the narrative to expand on the rationale behind using a cistern.

Response BJ 39 – Round 1

The text has been revised. The final potable water system has not been determined.

Comment BJ 39 – Round 2

No comment received.

Response BJ 39 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment BJ 40 – Round 1

Volume 11, Mine Plan, Section MP.9.9, Pg. MP-52, When pre-dug mud pits are to be used for exploration drilling, the topsoil must be protected from contamination by removal and stockpiling. The pit location must be stripped to the base of the soil with an areal extent that allows the pit materials to be stacked as spoil without encroaching on native surface. Reclamation shall occur in a manner that will best restore the surface to its pre-disturbance condition. These contingencies need to be

better described in the narrative. Please modify the text to reflect the aforementioned conditions.

Response BJ 40 – Round 1

Revised text as suggested.

Comment BJ 40 – Round 2

No comment received.

Response BJ 40 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment BJ 41 – Round 1

Volume 11, Mine Plan, Section MP.18, Pg. MP-68, The second paragraph discusses the speed limits that will be set on haulroads to protect wildlife. Approximately what speed limits will be used?

Response BJ 41 – Round 1

Updated text with a 45 MPH Speed Limit.

Comment BJ 41 – Round 2

No comment received.

Response BJ 41 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment BJ 42 – Round 1

Volume 11, Mine Plan, Section MP.20, Pg. MP-69, The brief description of underground mining should state that no "conventional" underground mining will occur. Highwall coal recovery is an underground mining technique, but no personnel work underground. Thus the mining is modified underground mining.

Response BJ 42 – Round 1

Revised text as requested.

Comment BJ 42 – Round 2

No comment received.

Response BJ 42 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment BJ 43 – Round 1

Volume 11, Mine Plan, Section MP.24, Pg. MP-70, The word "Operation" is misspelled in the title (OPERTATION).

Response BJ 43 – Round 1

Revised text as requested.

Comment BJ 43 – Round 2

No comment received.

Response BJ 43 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment BJ 44 – Round 1

Volume 11, Mine Plan, Section MP.25, Pg. MP-71, The second paragraph, third sentence, discusses requiring additional permitting. The word "additional" is misspelled (addiditional).

Response BJ 44 – Round 1

Revised text as requested.

Comment BJ 44 – Round 2

No comment received.

Response BJ 44 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment BJ 45 – Round 1

Volume 11, Mine Plan, TABLE MP.1-1, The total disturbance should read 895 acres, not 775. Please correct the table.

Response BJ 45 – Round 1

Revised text as requested.

Comment BJ 45 – Round 2

No comment received.

Response BJ 45 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment BJ 46 – Round 1

Volume 11, Mine Plan, FIGURE MP.1-3, The average width of the pit floor and safety bench have average widths indicated on the drawing. Please insert the average heights of the vertical highwalls in these situations.

Response BJ 46 – Round 1

Revised Figure MP.1-3 requested.

Comment BJ 46 – Round 2

No comment received.

Response BJ 46 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment BJ 47 – Round 1

Volume 11, Mine Plan, FIGURE MP.1-4, The cross section, as drawn, is confusing. It would appear that dozer pushed, loose material significantly exceeds the bank material available in the highwall. The figure is not drawn to scale but a more accurate attempt to represent dirt volumes would be appreciated. Also, the cross section itself does not make sense in the way that operational steps are illustrated. A series of cross sections over time would be much more beneficial to define the appearance of the dozer push. Please modify the figure accordingly. A sample of an idealized schematic is attached. It is volumetrically accurate.

Response BJ 47 – Round 1

Figure MP.1-4 has been updated to add clarity.

Comment BJ 47 – Round 2

No comment received.

Response BJ 47 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment BJ 48 – Round 1

Volume 11, Mine Plan, FIGURE MP.4-3, Pg. MP-F7, What is the narrow, vertical rectangle located in the center of the coal stockpile coming from the stacker?

Response BJ 48 – Round 1

The figure MP.4-3 has been updated to remove the rectangle.

Comment BJ 48 – Round 2

No comment received.

Response BJ 48 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment BJ 49 – Round 1

Volume 11, Mine Plan, Addendum MP-3, Pg. MP-3-2, The introductory paragraph states that the Brook Mine is approximately 6 miles northwest of Sheridan, Wyoming. However, in earlier narrative, the mine is said to be 6 miles south of the Montana border and 8 miles northwest of Sheridan. This passage is found in the Land Use Appendix D1-1. The distances should be uniform in all instances throughout the narrative.

Response BJ 49 – Round 1

Revised text as requested.

Comment BJ 49 – Round 2

No comment received.

Response BJ 49 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment BJ 50 – Round 1

Volume 11, Mine Plan, Addendum MP-3, Section 2.3, Figures 2.3-1 and 2.3-2 show the potentiometric surfaces for the Carney and Masters coal beds. The contours daylight and appear to be in mid-air over the Slater Creek drainage. Please adjust the contours so they terminate at the outcrop.

Response BJ 50 – Round 1

Revised Figures 2.3-1 and 2.3-2 in Addendum MP-3-17 as requested.

Comment BJ 50 – Round 2

No comment received.

Response BJ 50 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment BJ 51 – Round 1

Volume 11, Mine Plan, Addendum MP-6, Section MP-6.1, Pg. MP-6-3, The second to last paragraph indicates that the depth of the penetration by the continuous miner will be 2,000 feet. Is this an approximation since the listed depth for the ADDCAR device is 1,600 feet. Please clarify the discrepancy.

Response BJ 51 – Round 1

Based on communication with ADDCAR's representative 2,000 ft penetration is achievable. Generally, users of the ADDCAR system encounter increasing depth of cover with greater penetrations requiring wider web pillar between holes. The loss in recovery due to the wider pillars potentially negates any production gain from increased penetration.

Comment BJ 51 – Round 2

No comment received.

Response BJ 51 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment BJ 52 – Round 1

Volume 11, Mine Plan, Addendum MP-6, Section MP-6.1, Pg. MP-6-4, The discussion in this sections centers around the necessity of maintaining a straight, even cutting depth to prevent pillars from being cut too narrow to hold up the roof material and allow subsidence. The 1:1 ratio suggested by NIOSH is acceptable as long as roof strength tests bear up (no pun intended) the use of the general guidelines. A small sample of tests have been run on roof and coal rock intervals and those tests have been reported. LQD requests a narrative placed either in this location of the text or other location of RAMACO's choosing that discusses the strength tests results as it pertains to roof stability. Also, a commitment must be made in the document to sample roof material for strength testing for at least one location in every panel that will mined by the continuous miner prior to mining. Our concern rests with the competence of the overlying lithologies and their possibility for subsidence. This has been a problem in this area for decades and care must applied to characterize roof materials accurately.

A sampling plan to test compressive strength above each coal panel must be submitted prior to permit approval.

Response BJ 52 – Round 1

RAMACO must submit and have an approved MSHA Ground Control Plan that contains the strength test and commitments requested. RAMACO will provide this information when it is received and include it in the Subsidence Control Plan.

Comment BJ 52 – Round 2

No comment received.

Response BJ 52 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment BJ 53 – Round 1

Volume 11, Mine Plan, Addendum MP-6, Please provide the data used as input for the ARMPS-HWM program.

Response BJ 53 – Round 1

The following input values were used in the ARMPS-HWM program: compressive strength of coal - 660 psi, rock density - 162 lbs/ft³, abutment angle of 21°

Comment BJ 53 – Round 2

No comment received.

Response BJ 53 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment BJ 54 – Round 1

Volume 11, Mine Plan, Addendum MP-6, FIGURE MP-6.2-2, The scale of the photograph is too large to adequately depict the zones of surface subsidence from the old underground mines. Please blowup the scale to allow for clear visibility of the subsidence.

Response BJ 54 – Round 1

Cardno selected the larger scale to show that subsidence was limited to a small portion of the deep mine and not visible over other areas of the deep mine due its increased depth of cover. See revised figure in revision to Cardno's Subsidence Report

Comment BJ 54 – Round 2

No comment received.

Response BJ 54 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment BJ 55 – Round 1

Volume 11, Mine Plan, Addendum MP-6, FIGURE MP-6.2-3, This figure is very effective. It clearly shows the subsidence evident on the air photo as it correlates to

the old underground map superimposed on it. One problem, though, is that the air photo base needs to be darker, with greater contrast. The photo is a bit washed out and manipulation of the brightness/contrast aspects of the photo would help its visibility greatly. Please recalibrate the photo tonality.

Response BJ 55 – Round 1

See revised figure in revision to Cardno's Subsidence Report

Comment BJ 55 – Round 2

No comment received.

Response BJ 55 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment BJ 56 – Round 1

Volume 11, Mine Plan, Addendum MP-8, Section MP-8.5.4, The last sentence in this section indicates that there is no suitable habitat available for the Northern Long-Eared Bat. Does this include the climax Cottonwood Forest along Tongue River? The well developed understory along the river is suitable for Long-eared bat habitation though none have been located in this area. Or does the negation of the existence of the bat only apply to the area in the hills above the river where the mining will occur. Please clarify the area that was considered for potential Long-Eared Bat occurrence.

Response BJ 56 – Round 1

The text was revised to clarify.

Comment BJ 56 – Round 2

No comment received.

Response BJ 56 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment BJ 64 – Round 1

EXHIBITS, Mine Plan, Exhibit MP.1-1, The patterns used to depict surface disturbance from year to year are too similar. It is difficult to differentiate between year 0 and year 2, for example. Please recreate the surface disturbance layers to be more unique. The overburden removal sequence map (Exhibit MP.4-4) is a good example.

Response BJ 64 – Round 1

Revised Exhibit MP.1-1 as requested.

Comment BJ 64 – Round 2

No comment received.

Response BJ 64 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment BJ 67 – Round 2 (New Comment)

Mine Plan, Table MP.4-5., Overburden Stockpile Design –

The Estimated Capacity volumetrics for the Overburden stockpiles appear to be low. Based on a recalculation of the volumes given the acreage and average heights, each stockpile has a higher volume of capacity than which is shown in the table. A recalculated table would look like this:

Table MP.4-5. Overburden Stockpile Design

Stockpile Designation	Estimated Capacity <u>E</u> (cy)	Approximate Basal Area <u>A</u> (ac)	Average Height <u>H</u> (ft)	Calculated Capacity <u>C</u> (cy) ¹	Difference ²
OB-1	300,000	4.7	55	417,047	117,047
OB-2	500,000	9.4	55	834,093	334,093
OB-3	950,000	13.4	95	1,189,027	239,027
OB-4	1,000,000	21.4	85	1,898,893	898,893
OB-5	730,000	9.2	70	816,347	86,347
OB-6	400,000	8.3	55	736,487	336,487
OB-7	400,000	8.9	70	789,727	389,727
OB-8	1,100,000	14.2	75	1,260,013	160,013
OB-9	510,000	8.7	55	771,980	261,980
OB-10	260,000	5.6	45	496,907	236,907
OB-11	100,000	4.1	50	363,807	263,807
OB-12	1,200,000	14.0	95	1,242,267	42,267
OB-13	165,000	4.2	45	372,680	207,680
OB-14	122,000	5.6	55	496,907	374,907
OB-15	76,000	3.2	30	283,947	207,947
OB-16	104,000	3.6	20	319,440	215,440
	7,917,000			12,289,567	4,372,567

¹Calculated Capacity C = ((A*43560)*H)/27

²Difference = C-E

Based on the Recreated Table, Volumes derived from acreage and average height formulas give values that are approximately 35% too low. Please reevaluate the table in light of the mathematical calculations. Or, if there are extenuating circumstances that help create the overburden volumes in column B, please explain the seeming inconsistency.

Response BJ 67 – Round 2 (New Comment)

The capacities of the overburden stockpiles calculated by WDEQ do not account for the sideslopes of the overburden stockpiles. The calculations are appropriate for rectangular prisms with a uniform rectangular cross section. This explains why the calculations area significantly higher. The reported volumes by RAMACO are outputs from AutoCAD which uses 3D surfaces to construct stockpiles and calculate volumes. AutoCAD also takes into account the variation in a topographical surface that the stockpiles are placed on, which can affect the extent of the basal area and the average height. The volumes of the stockpiles were also rounded up to be conservative in the reported volumes. The average height is only a rough approximation because the height will change considerably depending upon the topographic surface beneath each pile. No changes have been made to the volumes of overburden. However, Table MP.4-5 has been revised to indicate sideslope angles and that the volumes have been computed using AutoCAD.

Comment BJ 67 – Round 3

No comment received.

Response BJ 67 – Round 3

Round 2 response assumed to be adequate. No response is necessary.

Comment BJ 69 – Round 3 (New Comment)

The new haulroad design appears to be missing a haulroad for the first pit to be mined, in sec. 22 T.57N., R.84W. Is this an oversight or has a haulroad not yet been designed?

Response BJ 69 – Round 3 (New Comment)

A haulroad for pit TR-1 is currently not designed. With the uncertainty of the initial pit, the design has not been completed. The design will be provided prior to construction. No changes to the Mine Plan have been made in response to this comment.

Comment DM 6 – Round 1

Mine Plan, MP.3.1.3 – A primary haul road appears to cross the Tongue River using the bridge that is currently in place from previous mine usage. Please discuss any updates needed for that bridge to be adequate for the intended usage.

Response DM 6 – Round 1

The revised primary haul road alignments do not cross this bridge and the use of this bridge for haul trucks and other traffic associated with the mine is not planned. Updated Exhibit MP.3-1.

Comment DM 6 – Round 2

No comment received.

Response DM 6 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment DM 7 – Round 1

Mine Plan, Exhibit MP4-3 shows Overburden Stockpiles OB-12 and OB-13, and Topsoil Stockpile TS-6 being located directly in the Slater Creek channel, without any mention of redirecting Slater Creek, or otherwise preventing the hydrologic consequences of damming up the creek with Overburden and Topsoil stockpiles. Please correct.

Response DM 7 – Round 1

Revised Exhibit MP.4-3 as requested with OB-12 and 13 as well as TS-6 moved out of Slater Creek channel.

Comment DM 7 – Round 2

No comment received.

Response DM 7 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment DM 8 – Round 1

Mine Plan, MP.7 – Because of the proximity of the planned facilities primarily in T57, R84 Sec.15 to the Tongue River and Goose Creek, I would like to see surface water monitoring upstream of these facilities on Goose Creek and Tongue River, and downstream of these facilities on Tongue River. Please discuss the feasibility of fulfilling this request, with reasoning.

Response DM 8 – Round 1

Revised text as requested. Revise Exhibit MP.7-1 with USGS stream gage location that is within the viewing area.

Comment DM 8 – Round 2

No comment received.

Response DM 8 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment DS 11 – Round 1

Mine Plan, 11) Depending upon the outcome of required overburden sampling, commitment for special handling of unsuitable overburden will be required to assure that placement of unsuitable materials so as not to hinder plant growth or to adversely affect surface or groundwater quality will be required in the Mine Plan.

Response DS 11 – Round 1

See section MP.4.6.1, fourth paragraph.

Comment DS 11 – Round 2

Response is not adequate. Section MP.4.1.6 does not discuss placement of unsuitable materials above groundwater sources which will undoubtedly be encountered in early mining progressions at this mine. Unsuitable materials taken from above the groundwater level cannot be placed within the groundwater zone. Please address this and describe how the mine plan pit sequence of removal and backfill will be altered to accommodate placement of suitable materials near the surface or in the aquifer zone during mining. This may require stockpiling of materials to assure the best quality materials will be used.

Response DS 11 – Round 2

The majority of the permit area is dry. Therefore, most backfill materials will not be placed in an aquifer. Additionally, it is generally accepted that if unsuitable materials are placed below the water table, there will not be cause for concern. If unsuitable materials are placed below the water table, they will not have the opportunity to oxidize. If unsuitable materials are above the water table, they may oxidize, but they won't be transported by groundwater flow. The only zone that could potentially cause concern is the limited area where the potentiometric surface fluctuates. In this way, unsuitable materials can be oxidized and transported by groundwater flow. Due to the overburden and coal seams being primarily dry and the majority of mining activities occurring above the potentiometric surface, placement of unsuitable materials within an aquifer is not anticipated to be a concern.

Comment DS 11 – Round 3

No comment received.

Response DS 11 – Round 3

Round 2 response assumed to be adequate. No response is necessary.

Comment DS 12 – Round 1

Mine Plan, 12) Does RAMACO provide a better detailed description of the topsoil salvage and handling process than that discussed in section MP.4.2.1? The

description provided is not detailed so as to provide a description of the equipment used, the methods for assuring adequate soil salvage, or whether topsoil and subsoil salvage will follow the recommendations in Appendix D7 for stockpiling topsoil separate from subsoil. (Map Unit A Cambira Loam, Map Unit B Zigweid Loam, Map Unit C Forkwood Loam, Map Unit G Bauxson Loam, Map Unit H Haverdad Loam, Map Unit U Ulm Clay Loam) Please understand that topsoil and subsoil may only be mixed if both meet Guideline 1 suitability criteria. Please include more detail for topsoil salvage and handling or let the LQD know where the information may be accessed.

Response DS 12 – Round 1

Revised text as requested.

Comment DS 12 – Round 2

Response is not adequate. Details of your topsoil salvage operation have not been adequately provided in the Mine Plan. Please provide the requested details of the topsoil salvage operation as stated above.

Response DS 12 – Round 2

The text in Section MP.4.2.1 has been supplemented to describe the topsoil salvage operation in more detail. The text now states that RAMACO will likely salvage topsoil with dozers, loaders, and trucks based on the current plan for equipment purchase. However, planning is still in its infancy and different, though typical, topsoil salvage equipment could be used. Methods to assure accurate salvage were already outlined in Section MP.4.2.1 in the three bulleted steps provided by WDEQ/LQD Guideline 1. However, these were supplemented with examples. Drilling or test pits ahead of salvage will ensure proper topsoil removal. Equipment operators and qualified personnel will be trained to recognize the difference in soil profiles. Additionally, Section MP.4.2.1 now states that RAMACO will generally follow the recommendations of Appendix D7 for the separation of topsoil and subsoil to ensure that unsuitable subsoil will not be mixed with topsoil. However, RAMACO reserves the right to mix topsoil and subsoil, if subsoil is suitable as a plant-growth medium, according to WDEQ/LQD R&R Chapter 4, Section 2(c). For example, Map Unit A, Map Unit B, Map Unit C, Map Unit H, and Map Unit U are all suitable across the entire profile (topsoil and subsoil) and are not required by rules and regulations to be separated. Therefore, RAMACO will not have separate stockpiles for subsoil. If subsoil is suitable, it will be salvaged. If subsoil is not suitable, it will not be salvaged. Any suitable subsoil that is salvaged will be mixed into topsoil stockpiles.

Comment DS 12 – Round 3

Response is not adequate. The LQD will allow mixing of suitable and unsuitable soil/subsoil if the resulting mix is suitable or only slightly marginal. Chapter 4, Section 2(c)(iii) provides the Administrator with the ability to require segregation of topsoil and subsoil if the Administrator determines that the practice is necessary for

vegetation establishment. However, the subject of this comment was to provide more detail about the methods that will be employed by the company and equipment operators to ensure adequate salvage will occur (color change in soils, staking with depths ahead of salvage, etc.). The LQD recommends that RAMACO review other approved permits for adequate topsoil/subsoil handling language in order to assure adequate detail is provided in the RAMACO permit application for topsoil handling.

Response DS 12 – Round 3

Section MP.4.2.1 has been revised to include details on staking prior to topsoil salvage operations. Data obtained during drilling and test pits ahead of stripping activities will be used to conduct depth staking on 500 foot grid centers. Section MP.4.2.1 includes other details describing adequately the topsoil salvaging procedures. A commitment has been added to the end of Section MP.4.3.1 to prevent overburden materials on native topsoil areas during overburden removal operations.

Comment DS 13 – Round 1

Mine Plan, 13) Section MP.4.2.3 all topsoil stockpiles, even those stockpiled temporarily or windrowed at the edge of a disturbance, must be identified by a topsoil sign from initiation of the salvage operation as required under Chapter 4, Section (c)(D) that states that signs must be in place at the time stockpiling is begun. Therefore, the text in the first paragraph of this section stating that signs will not be required must be corrected. Signs will always be required to identify all salvaged topsoil and must be placed on all approaches to the topsoil and no more than 150 feet from the stockpile location.

- a. Additionally, all stockpiled topsoil, even windrowed along the edge of a disturbance, must be protected against wind and runoff erosion, compaction or potentially toxic materials no matter what the longevity designation of the stockpiled material. The Mine Plan must provide a commitment to these requirements.

Response DS 13 – Round 1

Revised text as requested.

Comment DS 13 – Round 2

No comment received.

Response DS 13 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment DS 14 – Round 1

Mine Plan, 14) Section MP.4.2.4(4.2.1?) does not discuss topsoil salvage during winter months. Salvage during the winter months, especially of shallow soil profiles, is discouraged by the LQD due to a lack of depth control caused by varying depths of permafrost. Please provide discussion concerning this subject.

a. Even short term and temporary topsoil stockpiles must be identified on maps and the volumes accounted for in annual reports. Several criteria that must be considered are well established for placement of topsoil stockpiles and include:

- i. Construction of stable areas to minimize wind and water erosion
- ii. Stockpiles will not be placed in areas where runoff water can contribute to the loss of topsoil (side hills or drainages)
- iii. Stockpiles will not be constructed on unsuitable backfill locations
- iv. Stockpiles will have associated sediment control established in advance of construction
- v. Stockpiles will not be constructed at locations of known cultural or wildlife resources for which protection or mitigation is required.

b. Other topsoil stockpile construction and maintenance considerations include:

- i. Stockpiles will be constructed with slopes of 3h:1v or less
- ii. Bypass ditches, berms or equivalent may be used to divert runoff around stockpiles
- iii. Stockpiles that will remain for less than 1 year may be revegetated or treated with surface roughing methods such as ripping or discing to reduce runoff and wind erosion potential.

Response DS 14 – Round 1

Revised text as requested.

Comment DS 14 – Round 2

Section MP.4.2.1 does not discuss topsoil salvage during winter months. Salvage during the winter months, especially of shallow soil profiles, is discouraged by the LQD due to a lack of depth control caused by varying depths of permafrost. Please provide discussion concerning this subject.

a. Even short term and temporary topsoil stockpiles must be identified on maps and the volumes accounted for in annual reports. Several criteria that must be considered are well established for placement of topsoil stockpiles and include:

iii. Stockpiles will not be constructed on unsuitable backfill locations

v. Stockpiles will not be constructed at locations of known cultural or wildlife resources for which protection or mitigation is required.

Responses to the above items were not adequate. Please provide the required permit commitments.

Response DS 14 – Round 2

A statement to Section MP.4.2.1 has been added that states RAMACO will not salvage topsoil if high antecedent moisture conditions have led to deep frost cementing topsoil to overburden. Additionally, the statement has been made that RAMACO will salvage topsoil ahead of planned winter mining activities to avoid complications with deep frost.

All currently planned topsoil stockpiles have been identified on Exhibit MP.4-3. A statement has been added to Section MP.4.2.3 in the first paragraph that any accumulations of topsoil that meet the definition of a stockpile will be mapped with volumes accounted for in the Annual Report. Another statement has been added to the first paragraph of Section MP.4.2.3 that topsoil stockpiles will not be constructed on unsuitable backfill or known locations of cultural or wildlife significance that require protection and mitigation.

Comment DS 14 – Round 3

No comment received.

Response DS 14 – Round 3

Round 2 response assumed to be adequate. No response is necessary.

Comment DS 15 – Round 1

Mine Plan, 15) Section MP.4.2.7, page MP 4-5. Aside from operation of soil salvage equipment with the potential for soil contamination due to blown hydraulic hoses or small fuel leaks, the LQD expects not contamination of soil during the mining operation. Contamination of subsoil and overburden is more likely. The LQD recommends that RAMACO re-phrase the section header and text to show petroleum contaminated materials being and not soils.

a. What criteria will RAMACO use to determine if spills require reporting to the DEQ, and what process will be used in spill reporting?

- b. What will the operational procedure be for management of the proposed on-site landfarm for contaminated materials, and where will it be located? Will it be identified on the ground by a sign?

Response DS 15 – Round 1

Revised text as requested.

- a. See Section MP-4.5.2 of Addendum MP-4
- b. See Section MP-4.5.3 of Addendum MP-4

Comment DS 15 – Round 2

No comment received.

Response DS 15 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment DS 16 – Round 1

Mine Plan, Section MP.4.2.8. Please provide a detailed description for the disposal of empty drums, not just a citation of the EPA Rule which is probably not known by most readers of this public document.

Response DS 16 – Round 1

The EPA Code Federal Regulation cited is public information which may be accessed online or at a public library if the reader desires to know the specific requirements and steps regarding container disposal.

Comment DS 16 – Round 2

Response is not adequate. The Round 1 review comment was not addressed. Please provide the required detail in the drum disposal discussion. The general public may or may not have access to the Federal Register, but must provide a public document which stands alone, without need to reference other documents to provide the information required to explain the commitments made. Therefore, RAMACO must expand on what the EPA Rule requires for the readers of this permit.

Response DS 16 – Round 2

RAMACO has committed to disposing of empty drums according to Title 40 CFR Part 261.7. RAMACO has cited the federal regulation that stipulates the disposal of empty containers. RAMACO will not summarize this federal regulation in the Brook Mine Permit for two reasons:

1. Federal regulations are made public. Any member of the public has access to the Code of Federal Regulations. This regulation was accessed by WWC on the

internet, meaning any person with access to the internet can search and find this regulation. If a member of the public does not personally have access to the internet, said person can go to the local public library to obtain access to the internet.

2. The Code of Federal Regulations is a living document that is subject to change at any time. By committing to the stipulations of Title 40 CFR Part 261.7 without summarizing the regulation, RAMACO commits to observing any requirements of the regulation at any time no matter how the regulation might change in the future. If RAMACO summarizes the regulation and the regulation changes in the future contrary to what it originally stipulated, RAMACO will be automatically stating commitments contrary to federal regulation. The possibility of being out of compliance with federal regulation is avoided by simply citing the regulation RAMACO commits to observing.

Addendum MP-4 remains unchanged.

Comment DS 16 – Round 3

No comment received.

Response DS 16 – Round 3

Round 2 response assumed to be adequate. No response is necessary.

Comment DS 17 – Round 1

Mine Plan, MP.4.3.1 discusses overburden removal processes. However, little detail is given to explain the actual process for overburden handling. Will the first cut be stockpiled and used to fill the last cut? When special handling is required, which is almost certain given the nature of some overburden and the need for some soil replacement materials, what assurance will be made that poor quality materials will be safely located in the backfill or in separate stockpiles, or that topsoil substitutes will be handled and stored as topsoil in a useful manner as required under Chapter 4, Section 2(b)(x)(A)? Please provide a more detailed overburden handling plan. Perhaps some of these details are observed in later sections. Please provide additional details not provided elsewhere.

Response DS 17 – Round 1

See Sections MP.4.3.5, MP.4.6 and MP.4.7. Revised text as requested.

Comment DS 17 – Round 2

No comment received.

Response DS 17 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment DS 18 – Round 1

Mine Plan, Section MP.4.3.4. The volumetric analysis shown in Table MP.4-4 and MP.4-5 may change depending on results of required additional overburden sampling and volumetric analysis. If the overburden depth overlying coal changes as a result of additional sampling, the volumetric analysis will also change. If post mining contour changes are necessary due to adjusted swell factors permit revision will probably not be required until the changed PMT exceeds plus or minus 20 feet of the approved at which time a Reclamation Plan revision will be required. This kind of detail should be included in the permit commitments.

Response DS 18 – Round 1

Revised text as requested.

Comment DS 18 – Round 2

Response is not adequate. Does the volumetrics of stockpiles include the coal partings and heavily oxidized coal seams that will not be mined for sale and have not been included in overburden quality assessment data? Will swell factors be adequate to meet PMT requirements after mining of coal from box cuts? What steps will be taken, such as borrow areas not currently shown on any maps, would be used to mitigate inadequate backfill, keeping in mind that contouring must provide reestablishment of drainage patterns on the mine.

Response DS 18 – Round 2

The volumes of materials required to be placed in stockpiles were calculated from grid files in AutoCAD. The grid files are based on borehole/exploration hole data. These volumes were then increased by 16% (as stated in Section MP.4.3.4) to account for swell. In response to Comment DS 22 – Round 2, the topsoil volumes have been recalculated using the specified depths in Appendix D7 within each soil polygon. In most of these cases, the salvage depth of topsoil was increased from 0.5 feet to nearly 1.5 feet (or whatever the appropriate salvage depth was in the specific area). This significantly increased the volume expected to be placed in topsoil stockpiles. However, that volume that was originally assumed to be overburden that is now in topsoil stockpiles was not removed from the overburden stockpiles. Therefore, the volumes shown for overburden stockpiles should be slightly high. This will provide for additional storage of coal partings or materials from heavily oxidized coal seams should such volume requirements be necessary. The overestimate of overburden stockpile size is conservative. This simply shows that the mine does have the capability to store all the overburden materials. It is unnecessary to readjust overburden stockpiles to be smaller after topsoil calculations since this material was planned to be placed during reclamation.

As stated in Section MP.4.3.4, the actual swell factors will be monitored. Also stated in Section MP.4.3.4, if the actual swell factors differ significantly from what is

approved, the post mining topography will be adjusted. This is standard practice for coal mines, and RAMACO is prepared to meet this obligation. RAMACO cannot be certain what the swell factors will be until after material is excavated, stockpiled, handled, and reclaimed. Once the material is monitored and volumes of swelled material are better known, this data will be reported in the Annual Report, as stated in Section MP.4.3.4.

In reference to the PMT, please refer to the Reclamation Plan. As shown in Exhibit RP.3-1, all drainage patterns were maintained. Any borrow to tie the PMT into the existing ground occurred within the disturbance boundary. Because of the relatively minimal disturbance by the Brook Mine, reclaiming the surface to nearly premining conditions was relatively simple. Again, should the swell factor vary significantly from what is currently assumed, the PMT will be redone to account for this adjustment and should any additional borrow areas be required, the disturbance boundary will be increased.

Comment DS 18 – Round 3

No comment received.

Response DS 18 – Round 3

Round 2 response assumed to be adequate. No response is necessary.

Comment DS 19 – Round 1

Mine Plan, Section MP.4.6.1. The typical overburden sampling protocol as stated in Guideline 1 calls for one sample taken every 40 square acres of the permit area. Overburden sampling for underground mining operations differs from typical coal mine sampling protocols and is stated in the Coal Rules, Chapter 7, Section 1(a)(i)(A) which calls for overburden sampling and characterization on areas where surface operations will cause removal of overburden down to the level of the coal seam. Please make changes to the text accordingly and perform additional overburden sampling where required.

Response DS 19 – Round 1

Revised text as requested.

Comment DS 19 – Round 2

No comment received.

Response DS 19 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment DS 20 – Round 1

Mine Plan, Section MP.4.3.5. A statement was made in this section that “Overburden stockpiles will only block ephemeral drainages if runoff control and sediment control measures are made and approved by WDEQ/LQD.” Placement of overburden in ephemeral drainages will require a discussion of how water will be diverted around the overburden stockpile to prevent impoundment of water in addition of a discussion of sediment control measures for the stockpile to prevent off-site impacts of erosion down-slope from the stockpile. The LQD recommends that no overburden stockpiles be placed in ephemeral drainages.

Response DS 20 – Round 1

Revised Exhibit MP.4-3.

Comment DS 20 – Round 2

Response is not adequate. No response was provided. Please make necessary changes to the Mine Plan language concerning placement of overburden stockpiles.

Response DS 20 – Round 2

The statement reflects the allowances made by WDEQ/LQD rules and regulations. The statement was not made as a certainty that overburden piles will be placed in ephemeral drainages. Instead, the statement is provided in case overburden piles have to be placed in ephemeral drainages and provides the guidance as to how this will be done according to WDEQ R&R. WDEQ/LQD R&R Chapter 4, Section 2(c)(xi)(B) states:

“Ephemeral drainages may be blocked if environmentally sound methods for dealing with runoff control and sedimentation are approved by the Administrator.”

The Mine Plan currently states in Section MP.4.3.5 in the first paragraph:

“Overburden stockpiles will only block ephemeral drainages if runoff control and sediment control measures are made and approved by WDEQ/LQD.”

“...runoff control and sediment control measures are made and approved by WDEQ/LQD” implies that if an overburden stockpile blocks an ephemeral drainage, discussion and approvals by WDEQ will be made for diverting water, use of ASCMS, prevention of down-slope impacts, etc. before the placement of the stockpile. Because the permit text meets WDEQ/LQD R&R, no changes have been made to the text.

As shown in Exhibit MP.5-1, all of the overburden stockpiles avoid being placed such that they block ephemeral drainages. All ephemeral drainages flow around the stockpiles. However, the statement remains in the permit should RAMACO be required to block an ephemeral drainage and seeks the permission and approval of WDEQ/LQD, as allowed by WDEQ/LQD R&R Chapter 4, Section 2(c)(xi)(B).

Comment DS 20 – Round 3

No comment received.

Response DS 20 – Round 3

Round 2 response assumed to be adequate. No response is necessary.

Comment DS 21 – Round 1

Mine Plan, Tables MP.1-1, MP.1-2 and MP.4-1 must show the actual years for proposed progressions, or the year 1 progression must be tied to a specific year in the Mine Plan text.

Response DS 21 – Round 1

Revised tables as requested. Added note saying that Year 0 corresponds to the year 2016.

Comment DS 21 – Round 2

No comment received.

Response DS 21 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment DS 22 – Round 1

Mine Plan, Tables MP.4-3 and MP.4-5. Topsoil volumes appear to be underestimated in TS- 2, TS-6, TS-10 and TS-11 while underestimating the proposed volume in TS-1. Also overburden volumes appear to be underestimated in OB-4, OB-7, OB-11, OB-14 and OB-15, and overestimated in OB-16, which may affect estimates presented in Table MP.4-4 as well.

Response DS 22 – Round 1

Volumes are estimated based on the stripping volumes and available backfill area with excess material going to and from stockpile for contemporaneous reclamation. No updates will occur in response to this comment.

Comment DS 22 – Round 2

Response is not adequate. Several discrepancies have been discovered during the review. TS-1 capacity according to Table MP.4-3 is 89,600 cubic yards, but Table MP.4-1 shows 120,200 cubic yards added to the stockpile. Our estimate are significantly different from yours based on the footprint and average height.

Stockpile	Basal Area (acres)	Average Height (ft)	Volume Estimate (cy)	RAMACO's Volume Estimate (cy)
TS1	1.4	20	22,587	89,600
TS2	3.5	45	127,051	85,100
TS3	1.5	30	36,300	70,300
TS4	1.1	25	22,183	26,600
TS5	3.0	55	133,101	98,400
TS6	4.5	45	163,351	150,800
TS7	0.7	20	11,293	13,800
TS8	0.9	25	18,150	19,300
TS9	0.8	20	12,907	15,900
TS10	2.0	50	80,667	70,300
TS11	0.9	20	14,520	12,000

The volume of topsoil in stockpiles by year presented in Table MP.4-1 appears to be based on a six-inch salvage depth as shown below. Perhaps the salvage depth was intended to be 2 ft. but the volumes would have to increase by a factor of 4.

Stockpile	Acres Salvaged	Volume Salvaged (cy)	Depth (ft) (Volume (cu.ft./Area (sq.ft.))
TS1	80	64,500	0.50
TS1	43	34,700	0.50
TS1	23	18,600	0.50
TS1	13	10,500	0.50
TS1	19	15,300	0.50
TS1	5	4,000	0.50
TS1	9	7,300	0.50

The LQD requires RAMACO to evaluate topsoil stockpile volumes and depths of soil salvage expressed on specific areas of disturbance since each disturbance will undoubtedly result in different salvage and replacement depths.

All volumetric data in tables presented in the Mine Plan and in the reclamation bond estimate must be must be correct, so the LQD requires that:

- a) All topsoil salvage and bond estimates must be based on depth estimates provided in Appendix D7 and the approximate acreage of each soil series disturbed. Therefore, the soil salvage depth and topsoil volumes expressed in table MP.4-3 must be linked to site-specific soil depths. Table MP.4-1 must also include salvage depths for each calculation.
- b) All following topsoil salvage and volumetric tables must be corrected based on volumes for TableMP.4-1.

- c) All reclamation performance bond estimates must be changed to reflect corrected topsoil volumes.
- d) An average depth of topsoil to be salvaged for the entire mining operation must be provided in the Mine Plan text.
- e) Topsoil stockpile footprints and heights will need to be corrected on tables and figures.

Response DS 22 – Round 2

Responses to the list of WDEQ/LQD requests are as follows:

- a) Topsoil salvage estimates were updated to reflect the salvage depths of specific soil types in Appendix D7. To accomplish this, the soil polygons in Appendix D7 Exhibit D7.3-1 were used to create a 3D grid in AutoCAD that represented the salvage depth for each soil type. Volumes were then “removed” within each topsoil stripping area shown in Exhibit MP.4-2. Outputs from AutoCAD included the average cut depth within each topsoil stripping area. The average cut depth essentially reflects the weighted average of cut depths depending on recommended salvage depth of each soil and the areal extent of each soil type within the stripping areas. The average cut depth is now provided in Table MP.4-1. Again, this depth reflects a weighted average and will not match the recommended salvage depths in Appendix D7. To reflect what topsoil types will be salvaged in each stripping area, the soil polygons shown on Exhibit D7.3-1 were added to Exhibit MP.4-2 which already shows the topsoil stripping areas. This exhibit can be compared to Table MP.4-1 for volume calculations.
- b) Table MP.4-1, Table MP.4-2, and Table MP.4-3 were all updated to show the corrected topsoil volumes.
- c) The weighted average of salvage depth is provided in the Mine Plan text in Section MP.4.2.1 in the second paragraph.
- d) The topsoil stockpile footprints and heights have been corrected on Table MP.4-3 to reflect the new volumes. Please note: Stockpile heights are only averages. The stockpile height varies considerably for most stockpiles because of the nature of the topography in the Brook Mine permit area. When AutoCAD builds the 3D stockpiles, the topography is taken into account for the areal extent of the base. Therefore, hand calculations will unlikely replicate the volumes of stockpile by only considering basal area, average height, and typical side slope. To reflect the change in the topsoil stockpile footprints, the disturbance boundary was updated in Exhibits MP.1-1, MP.4-1, MP.4-2, MP.4-3, MP.4-4, MP.4-5, MP.5-1, MP.5-2, and MP.16-1. The hatches that represent the stockpile footprints were updates in Exhibit MP.4-3 and Exhibit MP.5

Comment DS 22 – Round 3

No comment received.

Response DS 22 – Round 3

Round 2 response assumed to be adequate. No response is necessary.

Comment DS 23 – Round 1

Mine Plan, Exhibit MP.4-2 and MP.4-3 must show the dates (actual years) for the salvage of topsoil and removal of overburden, or year 1 must be tied to an actual year when operations will begin (2016, 2017, etc.). The map or tables in the Mine Plan must provide proposed years and volumes for stockpile construction as well.

Response DS 23 – Round 1

Revised Exhibits as requested. Added note saying that Year 0 corresponds to the year 2016 on all Exhibits with years.

Comment DS 23 – Round 2

No comment received.

Response DS 23 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment DS 30 – Round 1

Reclamation Plan, All Mine Plan Maps with progressions must show the actual years of the initial disturbance or mining activity, or the progression must be linked to a specific year in Reclamation Plan text. The maps must also include the contour interval.

Response DS 30 – Round 1

Revised Exhibits as requested.

Comment DS 30 – Round 2

No comment received.

Response DS 30 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment DS 32 – Round 2 (New Comment)

The LQD requests that RAMACO provide pit identification number/names for all proposed initial box cut locations which will reduce confusion for identification of incident locations or for descriptions during inspections. (DS)

Response DS 32 – Round 2 (New Comment)

Exhibits MP.1-1, MP.4-1, MP.4-4, MP.5-1, MP.15-1, and MP.15-2 were all updated to include pit identification numbers. The text in Section MP.6.1 was also updated to include pit identification numbers to more conclusively identify pits in the hydrologic consequences discussion.

Comment DS 32 – Round 3

No comment received.

Response DS 32 – Round 3

Round 2 response assumed to be adequate. No response is necessary.

Comment DE 1 – Round 1

Mine Plan, Figure MP.1.2 and page MP-3 – MSHA and best practices may require a safety berm on this safety bench which could require a wider bench. Figure MP.1.2 notes a minimum of 35' but the text on page MP-3 just states the bench will be 35' wide. There is a real possibility this safety bench might be used for light plants so it may need to be wider for access and small vehicle use as well as providing a safety bench.

Response DE 1 – Round 1

Revised text as requested.

Comment DE 1 – Round 2

No comment received.

Response DE 1 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment DE 2 – Round 1

Mine Plan, Table MP.1-1 – The total disturbance doesn't seem to match the overall disturbance listed for the trench mining and facilities. Please explain or correct.

Response DE 2 – Round 1

Revised table as requested.

Comment DE 2 – Round 2

No comment received.

Response DE 2 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment DE 3 – Round 1

Mine Plan, Section MP.2.3, page MP-9 – The 1st sentence would be better if it started, “The explosive materials...”. The 2nd sentence should replace the word “detonating” with “explosive”. The 5th sentence in the 2nd paragraph should include cast boosters. The 6th sentence in the 2nd paragraph should discuss storage of emulsions, water gels, and slurries also. This section should also commit to proper signage of the explosive storage area. Please correct.

Response DE 3 – Round 1

Revised text as requested.

Comment DE 3 – Round 2

The third sentence in the 2nd paragraph needs to be corrected. It states one magazine will contain cast boosters and the other magazine will contain detonating cord and boosters. Boosters cannot be stored with detonating cord or detonators. I believe the text should say, “...the other magazine ...will contain detonating cord, detonators and other initiation products. Please correct.

Response DE 3 – Round 2

The third sentence of the second paragraph in Section MP.2.3 was changed as suggested to reflect that boosters will be stored separately from detonating cord, detonators, and other initiation products.

Comment DE 3 – Round 3

Response adequate.

Comment DE 4 – Round 1

Mine Plan, Section MP.5.7.5, page MP-34 – The word “of” in the 2nd line of the last paragraph should be “or”. Please correct.

Response DE 4 – Round 1

Revised text as requested.

Comment DE 4 – Round 2

No comment received.

Response DE 4 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment DE 5 – Round 1

Mine Plan, Section MP.6.1, page MP-39 – The 1st sentence of the 1st full paragraph needs some improvement so it reads properly and makes sense. Please correct.

Response DE 5 – Round 1

Revised text as requested.

Comment DE 5 – Round 2

The 1st sentence of the 1st full paragraph still needs to be improved so it makes sense. The current version says “... Hidden Water Creek watershed will occur...” It doesn’t make sense as it is written. Please correct.

Response DE 5 – Round 2

The text was corrected in the fourth paragraph of Section MP.6.1 to state:

“In the fourth and fifth years, mining occurs east of the Slater Creek watershed and west of the Hidden Water Creek watershed. Mining will occur primarily in minor drainages of the Tongue River in Sections 8, 17, and 18, T57N, R84W, as seen on Exhibit MP.1-1.”

Comment DE 5 – Round 3

Response adequate.

Comment DE 6 – Round 1

Mine Plan, Section MP.14.2, page MP-55 – The 2nd paragraph discusses the use of “cast primers”. The term should be “cast boosters” as it doesn’t become a primer until the detonator is added or detonating cord is attached to it. The discussion of priming holes should describe the use of a cast booster and how it is made-up to become a primer, i.e. with detonating cord or a detonator (blasting cap). Please correct.

Response DE 6 – Round 1

Revised text as requested.

Comment DE 6 – Round 2

No comment received.

Response DE 6 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment DE 7 – Round 1

Mine Plan, Section MP.14.3.2, page MP-56 – In the 2nd line the item “(primer with detonator)” should be changed to “(cast booster with detonator)”. Please correct

Response DE 7 – Round 1

Revised text as requested.

Comment DE 7 – Round 2

No comment received.

Response DE 7 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment DE 8 – Round 1

Mine Plan, Section MP.14.3.2, page MP-56 – The 2nd paragraph discusses powder factors in coal and overburden and the high end of the ranges is extremely high for the type of rock and coal in this area. RAMACO should eliminate the range and simply state powder factors will be adequate to effectively fragment the overburden and coal.

Response DE 8 – Round 1

Revised text as requested.

Comment DE 8 – Round 2

RAMACO kept the powder factor range of 0.2-0.7 pounds per ton in the text. As stated in the 1st round review the high end of the range is extremely high for coal. I would recommend that the text simply state that the powder factors will be adequate to effectively fragment the coal and overburden. Please correct.

Response DE 8 – Round 2

In Section MP.14.3.2, the powder factor ranges for coal and overburden were removed as suggested. The text now states that the powder factors will be chosen to adequately fragment coal or overburden, depending upon which is being blasted.

Comment DE 8 – Round 3

Response adequate.

Comment DE 9 – Round 1

Mine Plan, Section MP14.3.3, page MP-56 – RAMACO should reword this to say that initiation will be done using non-electric or electric systems, which may include electronic detonators, shock tube detonators, detonating cord, electric detonators or a

combination of these. Igniter cord is used to initiate safety fuse and it's highly unlikely that any safety fuse will be used at this mine. Please correct.

Response DE 9 – Round 1

Revised text as requested.

Comment DE 9 – Round 2

No comment received.

Response DE 9 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment DE 10 – Round 1

Mine Plan, Section MP.14.4, pages MP-56 & 57 – It is probable that emulsions will also be stored on site so it should be mentioned since emulsion/ANFO blends are the most widely used product in wet holes. Please correct.

Response DE 10 – Round 1

Revised text as requested.

Comment DE 10 – Round 2

No comment received.

Response DE 10 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment DE 11 – Round 1

Mine Plan, Section MP.14.6, pages MP-57 & 58 – Residents who request a pre-blast survey must make the request to the permittee and the Administrator of Wyoming Land Quality Division (LQD). The permittee is responsible for getting the pre-blast survey done and distributed to the person that requested it and the LQD Administrator. Please correct.

Response DE 11 – Round 1

Revised text as requested.

Comment DE 11 – Round 2

No comment received.

Response DE 11 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment DE 12 – Round 1

Mine Plan, Section MP.14.7, pages MP-58 & 59 – LQD will not approve protecting uninhabited structures (what LQD refers to as engineered structures) at 8.0 inches per second (ips) of peak particle velocity. LQD would allow a maximum limit of 5.0 ips. RAMACO would have to assure that this limit was not exceeded by the use of a seismograph at these structures on all blasts. RAMACO could apply for a modified scale distance factor to show compliance with this limit of 5.0 ips by submitting a vibration study and doing a regression analysis to show the allowable ppv is not exceeded at a 95% confidence level. However, this will require the vibration study be submitted with seismograph records from shots in the mining area so it cannot be done until after some blasting has been done at the mine. Please correct this text.

Response DE 12 – Round 1

Revised text as requested.

Comment DE 12 – Round 2

No comment received.

Response DE 12 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment DE 13 – Round 1

Mine Plan, Section MP.14.8.1, page MP-60 – The discussion on typical pattern size should be changed to more general language. Using the parameters given the powder factor used would be approximately 0.16 lbs./CY using ANFO and in the 0.23-0.25 lbs./CY range when shooting an emulsion blend. These powder factors are not high enough to adequately fragment the overburden. Please correct.

Response DE 13 – Round 1

Revised text as requested.

Comment DE 13 – Round 2

RAMACO continues to discuss a “typical” pattern size and stemming amount. Given the bench height, pattern size, stemming height, hole diameter listed it would be nearly impossible to get powder factors high enough to adequately fragment the overburden. The large burdens and spacings in a 50’ high bench would likely leave hard zones between the holes. The large amount of stemming compared to powder

column height gives poor powder distribution in the holes which will likely lead to hard zones in the upper portions of the bench. This discussion needs to be improved.

Response DE 13 – Round 2

The text in Section MP.14.8.1 has been edited to discuss generalities in overburden blast design as opposed to listing the specifics of before. The text now provides more open design standards for RAMACO to function as necessary for safe and efficient blasting during mining operations.

Comment DE 13 – Round 3

Response adequate.

Comment DE 14 – Round 1

Mine Plan, Section MP.14.8.1, page MP-60 – The 2nd paragraph says if water is in the holes a slurry or water gel explosive will be used. Most likely an emulsion/ANFO blend with good water resistance will be used in wet holes and not a slurry or water gel. Please correct.

Response DE 14 – Round 1

Revised text as requested.

Comment DE 14 – Round 2

No comment received.

Response DE 14 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment DE 15 – Round 1

Mine Plan, Section MP.14.8.1, page MP-60 – The 3rd paragraph discusses the explosive weight per hole and the powder factors. The explosive densities listed are correct but the pounds per hole and powder factors are incorrect. In a 7.875" hole and with a density of ANFO of 0.85 g/cc the pounds/foot of hole is 17.95 lbs. and with 24' of powder column the pounds/hole is 431 lbs., making the powder factor = 0.16 lbs./CY. Similarly using an emulsion blend of 1.32 g/cc the pounds/foot = 27.87 lbs. and the pounds per hole would be 669 lbs. so the powder factor = 0.25 lbs./CY. In the 50' hole described with 26' of stemming and 24' of powder the powder distribution is poor so it would likely lead to blocky material near the top of the bench. Please correct.

Response DE 15 – Round 1

Revised text as requested.

Comment DE 15 – Round 2

No comment received.

Response DE 15 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment DE 16 – Round 1

Mine Plan, Section MP.14.8.2, page MP-61 – Drilling a 35' x 35' pattern in a 15' thick coal seam with a 7.875" hole and 4.5' of stemming will probably result in excessive flyrock, stemming ejection, high airblast and hard zones between the holes. Expecting to stem 4.5' is not realistic – in the field the blaster is going to try to hold for 4' or 5' of stemming. Again RAMACO discusses using slurry or water gel in wet hole when an emulsion/ANFO blend with high water resistance would probably be used. Please correct. Also the powder factor listed for coal is probably a little high so it would be better to just say that the powder factor will sufficient to fragment the coal for the prime movers. Please correct.

Response DE 16 – Round 1

Revised text as requested.

Comment DE 16 – Round 2

RAMACO lists a pattern Drilling size of 35' x 35' and then in the text states the burden and spacing will 17.4' and 35.4'. As stated in the round 1 review comments, this pattern size in a 15' thick coal seam with a 7.875" drill hole will probably result in excessive flyrock, airblast and leave behind hard zones between the holes. The 2nd paragraph discusses using slurry and water gel and it is likely that an emulsion/ANFO blend with high water resistance would be used. RAMACO needs to revise the text in this section because this plan will not be effective.

Response DE 16 – Round 2

The text in Section MP.14.8.2 has been edited to discuss generalities in coal blast design as opposed to listing the specifics of before. The text now provides more open design standards for RAMACO to function as necessary for safe and efficient blasting during mining operations.

Comment DE 16 – Round 3

Response adequate.

Comment DE 17 – Round 1

Mine Plan, Section MP.14.10, page MP-63 – The last bullet item says that detonation during electric storms might be a reason for unscheduled blasting. This is confusing

because it makes it sound like the operator would shoot during electric storms and the only safe thing to do when an electric storm approaches is clear the pattern and keep everyone a safe distance away until the storm passes. Please correct.

Response DE 17 – Round 1

Revised text as requested.

Comment DE 17 – Round 2

No comment received.

Response DE 17 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment DE 18 – Round 1

Mine Plan, Addendum MP-7, Blaster's Log – Under the "Holes" heading RAMACO should use "burden" not the term "burden spacing". On the 2nd page the word "signiture" should be changed to "signature". Please correct.

Response DE 18 – Round 1

Revised text as requested.

Comment DE 18 – Round 2

No comment received.

Response DE 18 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment KM 11 – Round 2 (New Comment)

LQD recommends that sequence maps be revised to include only yearly backfilling and/or replacement, monthly backfilling and/or replacement areas may not be achievable as a permit commitment.

Response KM 11 – Round 2 (New Comment)

RAMACO appreciates the comment and understands the potential difficulty, but the permit remains unchanged.

Comment KM 11 – Round 3

No comment received.

Response KM 11 – Round 3

Round 2 response assumed to be adequate. No response is necessary.

Comment KM 12 – Round 2 (New Comment)

Exhibit MP.1-1 shows surface disturbance beginning in 2017. However, other maps show disturbance beginning in Year “0”, which according to the maps is Year 2016. Please be consistent.

Response KM 12 – Round 2 (New Comment)

Exhibit MP.1-1 has been corrected to properly show surface disturbance beginning in 2016.

Comment KM 12 – Round 3

No comment received.

Response KM 12 – Round 3

Round 2 response assumed to be adequate. No response is necessary.

Comment KM 13 – Round 2 (New Comment)

Exhibits MP.4-2 and RP.5-1 use the same symbol for all years of activities; only color designates different years. Some of the color variations denoting years are not easily discernible from the legend to the map.

Response KM 13 – Round 2 (New Comment)

The exhibits have been changed to use different hatch patterns and colors for years to make separate years more easily discernible.

Comment KM 13 – Round 3

No comment received.

Response KM 13 – Round 3

Round 2 response assumed to be adequate. No response is necessary.

Comment KM 14 – Round 2 (New Comment)

Do the slot openings include truck ramps? How will truck ramps be constructed in each slot?

Response KM 14 – Round 2 (New Comment)

The slot openings will include truck ramps that will be used to remove spoil and coal from the slots to the haul roads. By WDEQ/LQD definition in Chapter 1, Section

2(ds), ramps are not considered roads. As discussed in Section MP.3.1.4, ramps are exempt from mine plan design considerations. The ramps will move and change frequently as mining progresses. To describe a specific way in which the truck ramps will be constructed in each slot would be difficult to accomplish due to the variability in each slot and at each phase of construction of the slot. As Section MP.3.1.4 states, the ramps will be developed with consideration given to the type of equipment operating on them, safety considerations, and surrounding conditions. Safety berms will be installed on all elevated edges.

Comment KM 14 – Round 3

No comment received.

Response KM 14 – Round 3

Round 2 response assumed to be adequate. No response is necessary.

Comment KM 15 – Round 2 (New Comment)

Please confirm the volume of the overburden stockpiles. For example, based on LQD's review of the mine plan and the spoil backfilling sequence maps, it appears that OB-3 will be used to contain all overburden removed from the first slot opening.

Response KM 15 – Round 2 (New Comment)

Please see response to Comment BJ 67. WDEQ/LQD calculations did not consider the side slope of overburden stockpiles, therefore overestimating the volume of overburden stockpiles. Overburden stockpile volumes will be constantly changing over the course of mining due to ongoing reclamation activities. The overburden stockpiles have been sized to accept the required volume of spoil from the trenches, but spoil will likely be cycled in and out of the stockpiles on a regular basis to meet backfilling requirements. Volumes to be placed in stockpiles were calculated from 3D grid files in AutoCAD and given a swell of 16% to approximate the required space.

Comment KM 15 – Round 3

No comment received.

Response KM 15 – Round 3

Round 2 response assumed to be adequate. No response is necessary.

Comment KM 16 – Round 2 (New Comment)

LQD recommends using a swell factor of 11 to 13%, based on our experience in the area.

Response KM 16 – Round 2 (New Comment)

A swell factor of 16% was used as an average approximation. Swell factors of material at other mines in the area have been as high as 20%-22%. After the first pit has been backfilled, a swell study will be conducted and stockpile and PMT design will be reevaluated if necessary. Refer to Section MP.4.3.4 for a discussion that states that actual swell factors will be monitored and PMT will be adjusted if necessary.

Comment KM 16 – Round 3

No comment received.

Response KM 16 – Round 3

Round 2 response assumed to be adequate. No response is necessary.

Comment KM 19 – Round 2 (New Comment)

Page MP-8 states that the “approved Spill Prevention, Control, and Countermeasure (SPCC) plan will be on file with WDEQ and available at the Brook Mine. Who is responsible for approving the plan? WDEQ does not require a SPCC plan to be filed with the agency. SPCC plans is a federal requirement.

Response KM 19 – Round 2 (New Comment)

The text in Section MP.2.1.4 was edited to correctly state that the SPCC plan will be kept onsite at the mine for review and inspection by the EPA.

Comment KM 19 – Round 3

No comment received.

Response KM 19 – Round 3

Round 2 response assumed to be adequate. No response is necessary.

Comment KM 20 – Round 2 (New Comment)

Page MP-8 states that the leachfield(s) will accept water from the change house and equipment service shop. Discharge of industrial wastewater from the equipment service shop into a leachfield may be subject to Chapter 16, Wyoming Water Quality Rules and Regulations.

Response KM 20 – Round 2 (New Comment)

Section MP.2.1.6 states that sewage wastewater from the change house and equipment service shop will be discharged into the leach field. The section does not mention disposal of industrial wastewater into a leach field. However, a statement was added that the septic tank and leach field will be constructed in accordance with WDEQ/WQD rules and regulations.

Comment KM 20 – Round 3

No comment received.

Response KM 20 – Round 3

Round 2 response assumed to be adequate. No response is necessary.

Comment KM 21 – Round 2 (New Comment)

Page MP-8 states that wash down water will be sent to a wastewater impoundment. However Section MP5.2 (page MP-26) state that no wastewater impoundments are currently planned for the Brook Mine. Please discuss.

Response KM 21 – Round 2 (New Comment)

The statement made in Section MP.5.2 that no wastewater impoundments are currently planned was revised to state that designs for a wastewater impoundment are provided in Addendum MP-2. A wastewater impoundment will be required to treat wash down water.

Comment KM 21 – Round 3

No comment received.

Response KM 21 – Round 3

Round 2 response assumed to be adequate. No response is necessary.

Comment KM 22 – Round 2 (New Comment)

Groundwater from dewatering pumps is to be pumped to sumps or NPDES treatment for use in road dust control. What kind of “NPDES” treatment is proposed?

Response KM 22 – Round 2 (New Comment)

The third paragraph of Section MP.5.9 states that the treatment facilities will be sedimentation ponds.

Comment KM 22 – Round 3

No comment received.

Response KM 22 – Round 3

Round 2 response assumed to be adequate. No response is necessary.

Comment KM 23 – Round 2 (New Comment)

The State of Wyoming has primacy for the National Pollutant Discharge Elimination System and issues permits under the Wyoming Pollutant Discharge Elimination

System (WYPDES). Please change all references to NPDES to WYPDES to accurately reflect the current regulatory situation.

Response KM 23 – Round 2 (New Comment)

The reference in the third paragraph of Section MP.5.9 to NPDES was removed. A statement was added that all water is intended to be used, and discharge from the permit area is not anticipated.

Comment KM 23 – Round 3

No comment received.

Response KM 23 – Round 3

Round 2 response assumed to be adequate. No response is necessary.

Comment MK 23 – Round 1

Mine Plan, Section MP.20 Alluvial Valley Floors, The discussion of underground mining in AVFs does not seem necessary given there is no plans for underground mining at the Brook Mine. Furthermore, it is conceivable that circumstances could exist where underground mining of an AVF would not be allowed by the LQD. For example, if the AVF was significant to farming and underground mining of the AVF would result in surface effects such that material damage to the AVF would occur. (MDK)

Response MK 23 – Round 1

While no underground mining is proposed within delineated AVFs, the mine maintains this option. If underground mining is ever planned under the AVF, the appropriate revisions will be made. Revised text as requested.

Comment MK 23 – Round 2

No comment received.

Response MK 23 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 46 – Round 1

Mine Plan, Section MP.4.1 Mining Sequence, 20. On Exhibit MP.4-1, please attempt to show the areas that would be highwall mined versus surface mined. These layers are currently not found until Exhibit MP.15-1. Alternatively, the text in this Section could specify that the areas to be highwall versus surface mined are shown in Exhibit MP.15-1. (MDK)

Response MK 46 – Round 1

Revised text as requested.

Comment MK 46 – Round 2

No comment received.

Response MK 46 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 47 – Round 1

Mine Plan, Section MP.5.1 Surface Drainage and Erosion Plan, 21. Only Slater Creek and Hidden Water Creek are labeled and shown in Exhibit MP.5-1. In order to better evaluate the Hydrologic Control Plan, please provide labels and locations for the other stream channels, including Tongue River, Goose Creek, East Fork Earley Creek, and the other unnamed channels (as shown on the USGS 24K Quad) on the proposed permit area. (MDK)

Response MK 47 – Round 1

Revised Exhibit MP.5-1 as requested.

Comment MK 47 – Round 2

No comment received.

Response MK 47 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 48 – Round 1

Mine Plan, Section MP.5.1 Surface Drainage and Erosion Plan, 22. Exhibit MP.5-1 shows overburden stockpiles OB-13 and OB-12, as well as topsoil stockpile TS-6, occurring directly over the Slater Creek channel. The Exhibit does not show any diversion ditches to be used in these locations. Please either move the location of the stockpiles or present a plan to use a diversion to route Slater Creek around the stockpiles. (MDK)

Response MK 48 – Round 1

Revised Exhibit MP.5-1 as requested.

Comment MK 48 – Round 2

No comment received.

Response MK 48 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 49 – Round 1

Mine Plan, Section MP.5.2 Sedimentation and Wastewater Impoundments, 23. Exhibit MP.5-1 shows the locations of two “sediment basins”. Are these considered the same as “sedimentation impoundments”, as discussed in this Section? If so, the designs for these two impoundments are not found within the Mine Plan. (MDK)

Response MK 49 – Round 1

The “sediment basins” shown in Exhibit MP.5-1 are not considered the same as the “sediment impoundments (reservoirs).” Sediment Basins are considered an Alternative Sediment Control Measure and are discussed in Addendum MP-1. As such, the design for these “sediment basins” are not included in the Mine Plan. However, the design criteria and construction standards for “sediment basins” are similar to those discussed within Section MP.5.2 of the Mine Plan. Revised text as requested.

Comment MK 49 – Round 2

Response accepted. The text states that there are no currently planned sedimentation impoundments planned at the Brook Mine. Please see new Mine Plan and Reclamation Plan comments below that request this clarification elsewhere in the permit. (MDK)

Response MK 49 – Round 2

The statement in Section MP.5.2 was revised to state that sedimentation and wastewater reservoirs will be required for mining operations. The designs of these impoundments are provided in Addendum MP-2. Exhibit MP.5-1 has been revised to show the locations of these impoundments. The disturbance boundary has also been adjusted to encompass the impoundments. Permit-level designs have only been provided for impoundments that are planned to be needed in the first five years of operations. Any potential impoundments required after the first five years will be provided once these impoundments are within five years of ensuing operations. Due to the fact that sedimentation, wastewater, and flood control reservoirs will be required, the text changes referenced in Comments MK 106, 108, 109, 110, 111, 112, 113, and 114 (New Comments) were not made. The responses to these comments reflect that.

Sedimentation reservoirs have been designed to replace the ASCMs originally shown within one half of a mile of the Tongue River and Goose Creek to satisfy the requirements set forth in Guideline 15 (as discussed in Comment MK 116 (New Comment)).

Comment MK 49 – Round 3

No comment received.

Response MK 49 – Round 3

Round 2 response assumed to be adequate. No response is necessary.

Comment MK 50 – Round 1

Mine Plan, Section MP.5.3 Flood Control, 24. This section discusses flood control reservoirs but it is not mentioned how many flood control reservoirs would be constructed and where their locations would be. Please provide this information to comply with LQD Coal Rules and Regulations, Chapter 2, Section 5(a)(i)(D)(IV). (MDK)

Response MK 50 – Round 1

Revised text as requested.

Comment MK 50 – Round 2

No comment received.

Response MK 50 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 51 – Round 1

Mine Plan, Section MP.5.4 Diversions, 25. This section mentions permanent diversions, but there are no apparent plans for permanent diversions. Please discuss if permanent diversions are anticipated as part of the mining operation, or if all diversions will be temporary. (MDK)

Response MK 51 – Round 1

Revised text as requested.

Comment MK 51 – Round 2

No comment received.

Response MK 51 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 52 – Round 1

Mine Plan, Section MP.5.4 Diversions, 26. Exhibit MP.5-1 shows only one diversion ditch for Hidden Water Creek in T57N, R84W, Section 9. Please discuss this particular diversion and its typical design in more detail in Section MP.5.4. (MDK)

Response MK 52 – Round 1

Revised text as requested. Add design exhibit of the Hidden Water diversion ditch.

Comment MK 52 – Round 2

No comment received.

Response MK 52 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 53 – Round 1

Mine Plan, Section MP.5.5 Culverts, 27. Please provide a brief statement that commits to a periodic culvert inspection and maintenance plan to ensure that culverts will function properly over time. (MDK)

Response MK 53 – Round 1

Revised text as requested.

Comment MK 53 – Round 2

No comment received.

Response MK 53 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 54 – Round 1

Mine Plan, Section MP.5.8 Mine Pit Dewatering Plan, 28. The first sentence references a sedimentation reservoir. Where is the location of this sedimentation reservoir? Are these the “sediment basins” shown in Exhibit MP.5-1? If not these sedimentation reservoirs need to be added to this Exhibit. (MDK)

Response MK 54 – Round 1

Revised text as requested.

Comment MK 54 – Round 2

No comment received.

Response MK 54 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 55 – Round 1

Mine Plan, Section MP.5.8 Mine Pit Dewatering Plan, 29. The first paragraph references treating and discharging pit water. Please also reference in the text that appropriate WDEQ/WQD discharge permits (e.g., WYPDES) will be obtained prior to any discharge. (MDK)

Response MK 55 – Round 1

Revised text as requested.

Comment MK 55 – Round 2

No comment received.

Response MK 55 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 56 – Round 1

Mine Plan, Section MP.6.1 Surface Water, 30. Exhibit MP.1-1 shows surface disturbance directly over a few areas of Slater Creek and Hidden Water Creek. Please identify the source of disturbance in these areas. Direct disturbance of the channel should be avoided unless there is a plan for a diversion to route the stream around the disturbance. (MDK)

Response MK 56 – Round 1

See response to Comment MK 76, 88 and 99. Revised text as requested.

Comment MK 56 – Round 2

No comment received.

Response MK 56 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 57 – Round 1

Mine Plan, Section MP.6.1 Surface Water, 31. The mining trenches are often discussed with reference to Exhibit MP.1-1. However, the trenches are not shown on this Exhibit. Please add the locations of the trenches to Exhibit MP.1-1. (MDK)

Response MK 57 – Round 1

Revised Exhibit MP.1-1 as requested.

Comment MK 57 – Round 2

Response not accepted. Exhibit MP.1-1 does show trenches in the east portion of the mine, but not the western portion. For example, in the first full paragraph on Page MP-42, it discusses trenches being constructed perpendicular to the flow path of the minor Tongue River drainages. On Page MP-43, several trenches are discussed: one trench constructed parallel to Slater Creek's flow in Section 18, a trench in associated with the surface mine to the west of Slater Creek, and a trench parallel to Slater Creek in Sections 11, 12, and 13. On Page MP-43, a trench is discussed along the "TRD5" channel. Please add all of these trench locations to Exhibit MP.1-1. Also, please use a different color other than grey for the trenches, as this color tends to blend with the topographic line color. (MDK)

Response MK 57 – Round 2

A hatch has been added to Exhibit MP.1-1 in the western portion of the permit boundary to more clearly show the trench locations. Another hatch has been added to Exhibit MP.1-1 to more clearly show the location of the surface mine. The hatch colors were chosen to stand out from the topographic line color. Additionally in response to Comment DS32 (New Comment), RAMACO has provided pit identification numbers on several exhibits and in Section MP.6 to make pit locations more easily understood.

Comment MK 57 – Round 3

Response accepted.

Comment MK 58 – Round 1

Mine Plan, Section MP.6.1 Surface Water, 32. On Page MP-39, in the first carryover paragraph from the previous page, it states that any surface runoff to come in contact with mining disturbance will be treated prior to discharge. Please also reference in the text that appropriate WDEQ/WQD discharge permits (e.g., WYPDES) will be obtained prior to any discharge. (MDK)

Response MK 58 – Round 1

Revised text as requested.

Comment MK 58 – Round 2

No comment received.

Response MK 58 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 59 – Round 1

Mine Plan, Section MP.6.1 Surface Water, 33. Please discuss the diversion ditch for Hidden Water Creek in the first carryover paragraph on Page MP-39. (MDK)

Response MK 59 – Round 1

Revised text as requested. See Hidden Water Creek diversion Exhibit MP.5-2 for further details.

Comment MK 59 – Round 2

No comment received.

Response MK 59 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 60 – Round 1

Mine Plan, Section MP.6.1 Surface Water, 34. On Page MP-40, in the first carryover paragraph from the previous page, it states that any surface runoff to come in contact with mining activities will be treated prior to discharge. Please reference in the text that appropriate WDEQ/WQD discharge permits (e.g., WYPDES) will be obtained prior to any discharge. (MDK)

Response MK 60 – Round 1

Revised text as requested.

Comment MK 60 – Round 2

No comment received.

Response MK 60 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 61 – Round 1

Mine Plan, Section MP.6.1 Surface Water, 35. On Page MP-40, there is a sentence: “The surface disturbance activities will have temporary impacts on Slater Creek geomorphology including ground cover and soil erodibility”. This statement is unclear. Are the impacts to the actual Slater Creek channel or the uplands and other tributaries in the watershed? Is it reduced ground cover and increased soil erodibility? Please provide a more explicit description of the possible impacts. (MDK)

Response MK 61 – Round 1

See response to Comment MK 56, 76, 88 and 99. Revised text as requested.

Comment MK 61 – Round 2

Response not accepted. The text clarified that the only direct disturbance to the Slater Creek channel is where the channel will be redirected through a culvert under a proposed haul road. However, the sentence: “The surface disturbance activities will have temporary impacts on Slater Creek geomorphology including ground cover and soil erodibility” is still unclear. This statement implies that the channel stability of Slater Creek will be affected, and that bed and banks could experience excessive erosion. Please provide more discussion on what is meant by impacts to Slater Creek channel geomorphology. (MDK)

Response MK 61 – Round 2

Text was added to the fifth paragraph of Section MP.6.1 to clarify that the geomorphology of the Slater Creek channel such as the bed and banks will not be impacted. The only impacts to ground cover and soil erodibility will be in upper portions of the Slater Creek drainage where surface disturbance activities are proposed. The text now clarifies that this is the case and that ASCMs and other sediment and runoff control measures will be used to control sediment transport to Slater Creek.

Comment MK 61 – Round 3

Response accepted.

Comment MK 62 – Round 1

Mine Plan, Section MP.6.1 Surface Water, 36. Please provide a discussion on whether the proposed mining operation would affect surface water quality such that designated uses would be affected on the major streams on and adjacent to the proposed permit area. (MDK)

Response MK 62 – Round 1

Revised text as requested.

Comment MK 62 – Round 2

No comment received.

Response MK 62 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 63 – Round 1

Mine Plan, Section MP.6.1 Surface Water, 37. The text describes possible reductions in peak flows and storm volumes. Please describe in the PHC if the proposed mining operation will have any effects on nearby or downstream surface water rights. (MDK)

Response MK 63 – Round 1

Revised text as requested.

Comment MK 63 – Round 2

Response not accepted. The text speaks to impacts to existing reservoirs/water rights on the permit boundary but does not provide a statement as to possible impacts to water rights off or downstream of the permit boundary. Please provide this discussion in the text. (MDK)

Response MK 63 – Round 2

The last paragraph of Section MP.6.1 previously stated:

“...the Brook Mine is expected to have an extremely small effect on surface water quality in the Tongue River and other major streams adjacent to the permit boundary of the Brook Mine. As such, no effect on the designated uses present on major streams adjacent to the permit boundary is expected.”

Two sentences have been added to the last paragraph of Section MP.6.1. The first states:

“There is no anticipated impact to water rights downstream of the permit boundary either.” (In reference to water quality.)

The second sentence states:

“Additionally, the minimal reduction of any surface water runoff in the upper reaches of drainages in the Brook Mine permit area will not likely have any impact on downstream water rights.”

Comment MK 63 – Round 3

Response accepted.

Comment MK 64 – Round 1

Mine Plan, Section MP.6.1 Surface Water, 38. Please add a brief statement to the PHC that if it is determined that the mining operation affects a surface water right, that water right would be replaced with a water source of similar quantity and quality as provided by W.S. § 35-11-415(b)(xii). (MDK)

Response MK 64 – Round 1

Revised text as requested.

Comment MK 64 – Round 2

No comment received.

Response MK 64 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 65 – Round 1

Mine Plan, Section MP.6.1.1 Land Erosion Stability, 39. It is unclear the intent of this section. It seems to be out of place in the mine plan, as it discusses the USLE in the context of only native and reclaimed conditions. Furthermore, no data other than the K factors are presented in Mine Plan Tables (Table MP.6.1). The Reclamation Plan also does not discuss applying the USLE, so it would seem that Section MP.6.1.1 should be removed unless a USLE analysis is completed of pre- vs during- vs postmine erosion predictions. (MDK)

Response MK 65 – Round 1

Section MP.6.1.1 has been removed.

Comment MK 65 – Round 2

No comment received.

Response MK 65 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 66 – Round 1

Mine Plan, Section MP.7.1 Surface Water Monitoring, 40. It is unclear why reservoirs will be monitored in the operational monitoring program when these features were not sampled for during baseline characterization. If the reservoirs have the potential to be affected by the mining operation they should be sampled prior to mining with this information presented in Appendix D6. (MDK)

Response MK 66 – Round 1

Revised text as requested.

Comment MK 66 – Round 2

Response not accepted. Any reservoir potentially disturbed by mining activities should have a baseline water quality sampled collected with the information presented in Appendix D6. Section MP.6.1 states that Big Horn No. 2 Reservoir, Big Horn No. 14 Reservoir, Permanent Impoundment #1 Reservoir, and Legerski #1 Reservoir will be impacted by mining activities and will be reclaimed. At a minimum, the baseline water quality should be provided for these reservoirs in Appendix D6. RAMACO may also wish to expand the list of reservoirs sampled for baseline water quality to match those listed in Table RP.8-9. (MDK)

Also, there is now a statement on Page MP-49: *All existing reservoirs, stockponds, and proposed reservoirs that will be disturbed by surface mining activities as discussed in Section MP.6.1 will be monitored for relevant discharge through grab samples to ensure that any water released from these reservoirs meets the WDEQ/LQD guidelines discussed above.* It is unclear which WDEQ/LQD guidelines are being referred to. Also, if these reservoirs are going to be discharging, a WYPDES permit would likely be required. Please clarify these items in the text (MDK).

Response MK 66 – Round 2

A commitment has been added to the first paragraph of Section MP.7.1 that states RAMACO will collect water quality data from reservoirs that could potentially be impacted by mining prior to its disturbance and this data will be provided in the Annual Reports. Table MP.7-1 provides the expected monitoring locations.

Second, the statement in the third paragraph of Section MP.7.1 referring to discharge and citing aforementioned WDEQ/LQD guidelines was revised. Because these are existing reservoirs, discharge should not be the concern of RAMACO. RAMACO will monitor the reservoirs for the water quality constituents provided in Guideline 8, Appendix 7 for the time during mining upstream to ensure that mining has not impacted the reservoir.

These items should clarify that RAMACO will monitor reservoirs prior to mining operations upstream of the reservoir, and that the water quality monitoring will be to evaluate the aforementioned list as opposed to discharge. RAMACO does not have control of these reservoirs or how they are operated.

Comment MK 66 – Round 3

Response accepted.

Comment MK 67 – Round 1

Mine Plan, Section MP.7.1 Surface Water Monitoring, 41. Please add the reservoir monitoring locations listed in Table MP.7-1 to Exhibit MP.7.1. (MDK)

Response MK 67 – Round 1

Revised Exhibit MP.7.1 as requested.

Comment MK 67 – Round 2

No comment received.

Response MK 67 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 68 – Round 1

Mine Plan, Section MP.7.1 Surface Water Monitoring, 42. Please add the northing/easting State Plane coordinates for the surface water monitoring stations to Table MP.7.1. (MDK)

Response MK 68 – Round 1

See response MK

Comment MK 68 – Round 2

Response not accepted. The coordinates were not added to the Table. Please see response to Comment MK 35. Please add the northing/easting State Plane coordinates for the surface water monitoring stations to Table MP.7.1. (MDK)

Response MK 68 – Round 2

Table MP.7-1 has been updated to include the State Plane coordinates.

Comment MK 68 – Round 3

Response accepted.

Comment MK 69 – Round 1

Mine Plan, Section MP.7.1 Surface Water Monitoring, 43. Please identify what type of water quantity data will be generated from the continuous stage monitoring. For example, will mean daily flow rates and/or peak daily flow rates be estimated, as these would likely be submitted to the LQD in the Annual Report? (MDK)

Response MK 69 – Round 1

Revised text as requested.

Comment MK 69 – Round 2

No comment received.

Response MK 69 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 70 – Round 1

Mine Plan, Section MP.7.1 Surface Water Monitoring, 44. The text in the last paragraph on Page MP-45 states that water quality samples will be collected from a single station using an ISCO automatic sampler. Please identify in the text which station this is. Also, please explain the rationale for using an ISCO sampler at only one of the four stream monitoring sites. (MDK)

Response MK 70 – Round 1

Revised text as requested. The station equipped with the ISCO automatic sampler was the only station equipped with such a device due to the stations location as well as expected flows. Quarterly grab samples taken at stations upstream of mining disturbances will give an accurate representation of water quality entering the permit boundary. Since the station equipped with an automatic sampler is located near the area in which Slater Creek exits the permit boundary, an automatic sampler allows the operator see if the mining activities of the Brook Mine have an impact on the water quality of Slater Creek as the highest chance water quality is affected will occur during precipitation events. An automatic recorder was not installed at the station downstream of disturbances on Hidden Water Creek because the recorded and modeled flows for the drainage are extremely low. No observable flow had been recorded on any surface water station along Hidden Water Creek, despite precipitation events having occurring. As such, any data collected by an automatic sampler on Hidden Water Creek would occur during extreme precipitation events in which the flows through Hidden Water Creek would likely have high turbidity and be an unrealistic representation of the water quality within Hidden Water Creek.

Comment MK 70 – Round 2

No comment received.

Response MK 70 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 71 – Round 1

Mine Plan, Section MP.7.1 Surface Water Monitoring, 45. The text in the first paragraph on Page MP-46 states that data will be evaluated to determine if any surface water and groundwater interactions exist. It would seem that any interactions should have already been identified during the baseline characterization of the hydrological system on and near the proposed permit area. It does not appear that the permit application discusses surface/groundwater interactions. (MDK)

Response MK 71 – Round 1

Revised text as requested. The monitoring is a continuation of the baseline monitoring sites.

Comment MK 71 – Round 2

Response not accepted. The response states that the text was revised but the same statement remains without any additional explanation. If surface and groundwater interactions are expected to exist then these should have already been discussed in the baseline characterization of the hydrologic system. It does not appear that the

permit application discusses surface/groundwater interactions. Please provide more explanation on this in the text. (MDK)

Response MK 71 – Round 2

The third and fourth to the last sentences in the last paragraph of Section MP.7.1 were edited to state:

“Baseline monitoring has not indicated any interactions between surface water and groundwater. However, surface water data will continue to be compared to groundwater monitoring data to determine if any surface water and groundwater interactions exist that weren’t observed in baseline studies.”

Comment MK 71 – Round 3

Response accepted.

Comment MK 72 – Round 1

Mine Plan, Section MP.8 Water Use, 46. Please state in the text that all water from surface reservoirs or wells will be used under appropriate permits from the State Engineer’s Office (SEO). (MDK)

Response MK 72 – Round 1

Revised text as requested.

Comment MK 72 – Round 2

No comment received.

Response MK 72 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 73 – Round 1

Mine Plan, Section MP.8 Water Use, 47. It is advised that the applicant discuss with the SEO-Interstate Streams Division any implications that water use may have under the Yellowstone River Compact. (MDK)

Response MK 73 – Round 1

Revised text as requested.

Comment MK 73 – Round 2

No comment received.

Response MK 73 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 74 – Round 1

Mine Plan, Addendum MP-6 Subsidence Control Plan, Section MP.6.3 Subsidence Monitoring and Assessment and Section MP-6.4 Subsidence Control and Remediation, 48. The text states that subsidence monitoring would be discontinued if no evidence of subsidence occurred after six months after highwall mining. Please include a clarifying statement that the applicant would remediate subsidence up until bond release is approved, even if the subsidence was detected later than the six months of initial monitoring. (MDK)

Response MK 74 – Round 1

Please see revision to last paragraph of Addendum MP-6.

Comment MK 74 – Round 2

No comment received.

Response MK 74 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 106 – Round 2 (New Comment)

In Section MP.2.1.2 Change House and Equipment Service Shop, on Page MP-8, it states that wash down water will be routed to wastewater impoundment. As stated on Page MP-26, wastewater reservoirs are not currently planned as part of the mining operation. The text in this section should also clarify that wastewater reservoirs are not planned. (MDK)

Response MK 106 – Round 2 (New Comment)

The text in Section MP.2.1.2 was not revised. The text in Section MP.5.2 was changed to reflect that wastewater impoundment(s) will be required. Designs for the wastewater impoundment are provided in Addendum MP-2.

Comment MK 106 – Round 3

Response not accepted. The location of the wastewater impoundment is not shown in Exhibit MP.5- 1, as the map contains labels for only sedimentation ponds and flood control reservoirs. Exhibit 12 in Addendum MP-2 shows the design for a "typical facilities reservoir". The text in Section MP 5.2 should acknowledge that the location for the wastewater impoundment is not shown on Exhibit MP.5-1 and has not been determined yet, but the typical design is shown in Exhibit 12 in Addendum MP-2.

Please make this correction or explain if my understanding of this issue is not accurate. (MDK)

Response MK 106 – Round 3

Text at the end of Mine Plan Section MP.5.2 has been revised, as requested. The text states the typical facilities reservoir location has yet to be determined and a typical design is included in Exhibit 12 of Addendum MP-2.

Comment MK 107 – Round 2 (New Comment)

In Section MP.5.2.1 General Design Criteria, there is a sentence: A discussion regarding the USLE method is provided in Section MP.6.1.1. As per to the response to Comment MK 65, Section MP.6.1.1 has been removed. Please remove the sentence that references Section MP.6.1.1. (MDK)

Response MK 107 – Round 2 (New Comment)

The sentence referencing the previously deleted Section MP.6.1.1 was removed.

Comment MK 107 – Round 3

Response accepted.

Comment MK 108 – Round 2 (New Comment)

In Section MP.6.1 Surface Water, there is a sentence on Page MP-42: *Any surface runoff to come in contact with mining disturbance will be treated in the pits or retained in sedimentation control structures in the vicinity of Hidden Water Creek to meet water quality standards before being discharged from the Permit Area.* As noted in the response to Comment MK 49, sedimentation impoundments are not currently planned as part of the mining operation. The text in this section should also clarify that sedimentation impoundments are not planned. (MDK)

Response MK 108 – Round 2 (New Comment)

The text in Section MP.6.1 was not revised. The text in Section MP.5.2 was changed to reflect that sedimentation reservoirs will be required for mining operations. The designs for sedimentation impoundments are provided in Addendum MP-2.

Comment MK 108 – Round 3

Response accepted.

Comment MK 109 – Round 2 (New Comment)

In Section MP.6.1 Surface Water, there is a sentence on Page MP-42: *As previously discussed, any runoff coming into contact with mining activities will be captured in a sedimentation impoundment or ASCM to meet water quality standards prior to discharge*

from the Permit Area. As noted in the response to Comment MK 49, sedimentation impoundments are not currently planned as part of the mining operation. The text in this section should also clarify that sedimentation impoundments are not planned. (MDK)

Response MK 109 – Round 2 (New Comment)

The text in Section MP.6.1 was not revised. The text in Section MP.5.2 was changed to reflect that sedimentation reservoirs will be required for mining operations. The designs for sedimentation impoundments are provided in Addendum MP-2.

Comment MK 109 – Round 3

Response accepted.

Comment MK 110 – Round 2 (New Comment)

In Section MP.6.1 Surface Water, there is a sentence on Page MP-43: *Sedimentation impoundments will capture runoff that has come in contact with mining activities, and will treat the water to meet water quality standards before discharge.* As noted in the response to Comment MK 49, sedimentation impoundments are not currently planned as part of the mining operation. The text in this section should also clarify that sedimentation impoundments are not planned. (MDK)

Response MK 110 – Round 2 (New Comment)

The text in Section MP.6.1 was not revised. The text in Section MP.5.2 was changed to reflect that sedimentation reservoirs will be required for mining operations. The designs for sedimentation impoundments are provided in Addendum MP-2.

Comment MK 110 – Round 3

Response accepted.

Comment MK 111 – Round 2 (New Comment)

In Section MP.6.1 Surface Water, there is a sentence on Page MP-44: *Any runoff that does enter disturbed areas will be captured in a sedimentation pond or treated in the trenches to meet water quality requirements before being discharged from the Permit Area.* As noted in the response to Comment MK 49, sedimentation impoundments are not currently planned as part of the mining operation. The text in this section should also clarify that sedimentation impoundments are not planned. (MDK)

Response MK 111 – Round 2 (New Comment)

The text in Section MP.6.1 was not revised. The text in Section MP.5.2 was changed to reflect that sedimentation reservoirs will be required for mining operations. The designs for sedimentation impoundments are provided in Addendum MP-2.

Comment MK 111 – Round 3

Response accepted.

Comment MK 112 – Round 2 (New Comment)

In Section MP.12.5 Mine Facilities, the first bullet is for a Sedimentation Pond. As noted in the response to Comment MK 49, sedimentation impoundments are not currently planned as part of the mining operation. The text in this section should also clarify that sedimentation impoundments are not planned. (MDK)

Response MK 112 – Round 2 (New Comment)

The bullet item in Section MP.12.5 was not deleted. The text in Section MP.5.2 was changed to reflect that sedimentation reservoirs will be required for mining operations. The designs for sedimentation impoundments are provided in Addendum MP-2.

Comment MK 112 – Round 3

Response accepted.

Comment MK 113 – Round 2 (New Comment)

In Section MP.12.5 Mine Facilities, the second bullet is for a Wastewater Reservoir. As stated on Page MP-26, wastewater reservoirs are not currently planned as part of the mining operation. The text in this section should also clarify that wastewater reservoirs are not planned. (MDK)

Response MK 113 – Round 2 (New Comment)

The bullet item in Section MP.12.5 was not deleted. The text in Section MP.5.2 was changed to reflect that wastewater reservoirs will be required for mining operations. The design for the wastewater impoundment is provided in Addendum MP-2.

Comment MK 113 – Round 3

Response accepted.

Comment MK 114 – Round 2 (New Comment)

In Section MP.12.5 Mine Facilities, the third bullet is for a Flood Control Reservoir. As stated on Page MP-29, flood control reservoirs are not currently planned as part of the mining operation. The text in this section should also clarify that flood control reservoirs are not planned. (MDK)

Response MK 114 – Round 2 (New Comment)

The text in Section MP.5.3 in the second paragraph was revised to reflect that flood control reservoirs will be required for mining operations within the first five years. The designs of these flood control reservoirs are provided in Addendum MP-2 and the

locations in relation to the permit area are shown on Exhibit MP.5-1. Therefore, the text in Section MP.12.5 was not revised to remove “Flood Control Reservoir” from the list.

Comment MK 114 – Round 3

Response accepted.

Comment MK 115 – Round 2 (New Comment)

Mine Plan Addendum MP-1 commits to getting LQD approval and doing further sediment yield analysis for ASCMs that drain larger than 30 acres, as per LQD Guideline No. 15. It isn’t clear from the Hydrologic Control Plan in Exhibit MP 5-1 if any of the currently proposed ASCMs drain more than 30 acres. Please indicate if any of the ASCMs shown in Exhibit MP 5-1 drain more than 30 acres. (MDK)

Response MK 115 – Round 2 (New Comment)

Exhibit MP.5-1 now shows the drainage areas for any ASCMs that drain more than 30 acres. Any ASCMs with drainage areas of more than 30 acres have designs provided in Addendum MP-2.

Comment MK 115 – Round 3

Response accepted.

Comment MK 116 – Round 2 (New Comment)

LQD Guideline No. 15 states that ASCMs should not be used for disturbed or reclaimed areas that are within one-half mile (channel distance) of Class 1 or Class 2 streams. Since the Tongue River and Goose Creek are Class 2 streams, please provide an analysis of the distance of the currently proposed ASCMs on Exhibit MP 5-1 to the Tongue River and Goose Creek. In accordance with LQD Guideline No. 15, more traditional sediment control methods (i.e., sedimentation impoundments) may be needed for disturbed areas that are close to the Tongue River and Goose Creek. (MDK)

Response MK 116 – Round 2 (New Comment)

Exhibit MP.5-1 now shows a half mile buffer from the Tongue River and Goose Creek. In those locations where ASCMs had been proposed within a half mile of either the Tongue River or Goose Creek, more robust methods of sediment control have been implemented (primarily sediment impoundments and collector ditches). Because several locations that require such sediment control measures are within the first five years of operations, sediment impoundments have been designed and these designs are provided in Addendum MP-2. The locations of the sediment impoundments and collector ditches in relation to the permit area are shown on Exhibit MP.5-1.

Comment MK 116 – Round 3

Response not accepted. Thank you for providing the Class 1 and Class 2 Stream 1/2 mile buffer on Exhibit MP 5-1 and for showing other forms of sediment control besides ASCMs in the buffer. However, the text in this section should also state that the mine trenches will also serve as sediment control. This is important to demonstrate since there are some areas, for example in Section 18 near TR-6 and in Section 14 near TR-9A and TR-12 that are within the buffer to the Tongue River but sedimentation ponds will not be used. (MDK)

Response MK 116 – Round 3

The first paragraph of Section MP.5.1 has been revised to include discussion of mine trenches as a form of sediment control.

Comment MK 117 – Round 2 (New Comment)

LQD Guideline No. 15 provides monitoring guidance for ASCMs based on the drainage area upstream of the ASCM. For large receiving streams (drainage area greater than 1.0 square mile), monitoring should include repeated surveys of channel cross-sections and/or upstream and downstream sediment yield stations. Please provide a commitment to conduct this monitoring to evaluate the performance of the proposed ASCMs that drain to large receiving streams. (MDK)

Response MK 117 – Round 2 (New Comment)

A commitment has been added to the last paragraph of Section MP.5.1 that RAMACO will either monitor the stream channel cross sections or will have upstream and downstream sediment yield monitoring stations to ensure the ASCMs are functioning properly in areas that drain to receiving streams with a drainage area of greater than 1.0 square mile.

Comment MK 117 – Round 3

Response accepted.

Comment MK 123– Round 3 (New Comment)

MP.1.3 Acreage to Be Affected Annually. There is a sentence in the second paragraph of this section that is confusing and needs rewritten to improve clarity. The difference between disturbance boundary and affected area boundary would likely be confusing to the public and therefore a clear distinction should be made. The sentence states: The disturbance boundary includes all lands that will be physically disturbed during mining lands that are exclusive of the disturbance boundary but inclusive of the affected area boundary have the potential to be disturbed by mining. It is suggested that this be broken into two sentences: The disturbance boundary includes all lands that will be physically and directly disturbed during mining. The affected area

boundary includes all lands within the disturbance boundary plus additional lands that have the potential to be disturbed by mining.

Response MK 123 – Round 3 (New Comment)

The sentences in the second paragraph of Section MP.1.3 regarding the disturbance and affected area boundaries have been revised for clarity, as requested.

Comment MK 124– Round 3 (New Comment)

MP.8 Water Use. This section has been revised in this round to remove groundwater wells as a source of water for the mine. As shown in the new Table MP.8-1, surface water rights are now expected to provide 227,000 gpd, or 69 percent of the mine's water use. In the text, please provide further discussion on how and where these surface water rights will be obtained. For example, are these existing surface water rights that the mine already has rights to, and if so where are the rights located? The Mine Plan PHC (Section MP.6.1) also needs revised as this new plan for water use has not been analyzed for any effect on decreasing surface water quantity. (MDK)

Response MK 124 – Round 3 (New Comment)

Surface water rights will be obtained through the State Engineers Office and in accordance with the Yellowstone Compact. No changes to the Mine Plan have been made in response to this comment.

Comment MK 125– Round 3 (New Comment)

MP.12.4 Buffer Zones. Assuming Slater Creek is an intermittent stream (Comment MK 29), LQD Coal Rules and Regulations, Chapter 4, Section 2 (r)(ii)(B) states that a buffer zone shall be designated, marked in the field, and on a mine plan map. From Chapter 4, Section 2 (r)(ii)(A), this buffer zone is to be 100 feet. Please designate the buffer zone on Exhibit MP-5.1 and provide a commitment to marking the buffer zone at select locations in the field prior to commencing mining-related disturbance. (MDK)

Response MK 125 – Round 3 (New Comment)

A buffer zone boundary of Slater Creek has been added to Exhibit MP.5-1. A commitment to provide a buffer zone marked in the field prior to commencing mining related disturbance has been placed in the fifth paragraph of Section MP.6.1.

Comment MK 126– Round 3 (New Comment)

MP.25 Alluvial Valley Floors. Although no mining is planned on the AVFs on the Tongue River and Goose Creek, the disturbance boundary is within a small part of the Big Horn Mine AVF extent (Exhibit D11.6-1). It appears that this area includes the SP-1, OB-1, and OB-2 features in Section 21 on Exhibit MP.5-1, which was updated for this round. Please include a statement in the text of Section MP .25 that there is some minor disturbance proposed within the AVF extent. Please also discuss in the text of

MP.25 whether this disturbance would affect the essential hydrological functions of the AVF. (MDK)

Response MK 126 – Round 3 (New Comment)

Minor disturbance is planned within the Big Horn Mine AVF extent in Section 21 of Township 57 North, Range 84 West. The disturbance would include placement of an overburden pile (OB-1) and a sediment pond (SP-1). The disturbance should not affect the essential hydrologic functions of the AVF on the Tongue River as the disturbed area is minimal in size and should not preclude the conveyance of flow. Discussion of the planned AVF disturbance has been added to the second paragraph of Section MP.25.

Comment MuK 32 – Round 1

Mine Plan, 32. Please provide an electronic copy of the groundwater model referenced in Addendum MP-3. In addition, please provide the GIS projection coordinate of the model files that will enable the LQD to plot the model results in GIS for the purposes of producing the CHIA (Cumulative Hydrologic Impact Assessment). The LQD review of the model files might potentially generate additional comments, clarifications or questions. (MK)

Response MuK 32 – Round 1

An electronic copy of the groundwater model will be provided under separate cover. The elements in the model are based on the Wyoming East Central NAD 83 state plane coordinate system. To convert from model Grid to the state plane coordinates the X offset is 1367387.512 and the Y offset is 1915004.382. There is no rotation from the model grid to the state plane coordinate system.

Comment MuK 32 – Round 2

Response conditionally accepted. Because of a version compatibility issue between the software used by the LQD and the mine, the LQD was not able to review the model files. The LQD has contacted Office of Surface Mining (OSM) to explore the options (if any) to update the Groundwater Vistas software to the latest version. OSM is looking into this issue and has not responded during the completion of the review. The LQD would also welcome any suggestions from the mine to resolve this issue. (MK)

Response MuK 32 – Round 2

RAMACO suggests that WDEQ/LQD obtain a “Student License” for Groundwater Vistas. A student license will allow WDEQ/LQD to view the model but not to make any changes to the model. The Brook Mine model cannot be saved to an older version of Groundwater Vistas without causing significant issues in the functionality of the model. The newer versions of Groundwater Vistas contain features vital to the functionality of the model that are not available in older versions of Groundwater Vistas.

Comment MuK 32 – Round 3

Response not accepted. The LQD was able to obtain a newer version of Groundwater Vistas from the OSM. The model files provided in the initial submittal were attempted to run following the written instructions that came along with the model files. The steady state model ran and the results for mass balance were similar to the results provided in the application. However, the transient model results do not align with the results presented in the application. Please provide additional assistance and clarification to help the LQD replicate the model results. Depending on the results from this verification run, additional comments may be generated. In addition, please review comment# 74 on the revised model files.

Response MuK 32 – Round 3

During follow up discussions between WWC and Muthu Kuchanur it was discovered that from the time that the original model was developed and the time that the model files were reviewed at LQD, Groundwater Vistas had been updated. The model files provided to LQD were developed in Groundwater Vistas Version 6.43 Build 4. However LQD was using a later version of Groundwater Vistas (Version 6.78 Build 37). When the model files were run on the newer version of Groundwater Vistas they returned erroneous results. WWC downloaded the latest version of Groundwater Vistas (Version 6.80 Build1) available on December 1, 2015 and reconfigured the model to run on the latest version of Groundwater Vistas.

When the model files were configured to run on the later version of Groundwater Vistas, there were a few minor changes in the model results. While most of the differences in the model results were very minor, in order to ensure that the results reported in Addendum MP-3 matched the latest model simulations several pages in Addendum MP-3 were updated with the latest model results. Following are the pages in Addendum MP-3 that have been updated:

Executive summary, Page 4-the modeled drawdown to private wells was updated.

Executive summary, Page 5-the modeled drawdown to private wells was updated.

Section 3.1, Page 30-The version and build number used for the latest version of the model simulations was updated.

Table 4.7-1, Page 49, -The calibration Results were updated.

Figure 4.7-4, Page 54 -Model residuals on the figure were updated.

Table 4.8-1, Page 55-Model sensitivity results were updated.

Table 4.8-2 and Table 4.8-3 Page 56-Model sensitivity results were updated.

Table 4.8-4, Page 57- Model sensitivity results were updated.

Section 4.9, Page 58- To accommodate a more efficient mine plan, in December 2015, RAMACO shifted the slot location between mine blocks 1 and 2 to the north approximately 630 feet. Since the footprint of the mine blocks are still generally similar, this small change in the location of the slot is not expected to significantly alter the groundwater model predictions. As a result, the groundwater model was not adjusted to specifically address this minor change to the mine plan. Additional text was added to this page to address the changes in the mine plan.

Table 4.9-1, Page 69 Maximum modeled drawdowns for adjacent wells were updated.

Section 4.9, Page 72 (Includes Table 4.9-2)-text and table describing pit inflows were updated.

Table 4.10-1, Page 77-Table was updated to include text denoting stress period and time step when values were measured and total inflow value for 5 years into mining were updated.

The latest model files configured to run on Groundwater Vistas Version 6.80, Build 1 are provided on a DVD with these comment responses.

Comment MuK 33 – Round 1

Mine Plan, MP.1.1 Type of Mine, 33. Page MP-1 states, “Below the Tongue River Member is the Lebo shale member of the Fort Union Formation which contains the Masters Seam (Cardno MM&A, October 2013).” This statement is not consistent with Table D5.3-1, Page D5-T1 and other descriptions in Appendix D5. Table D5.3-1 indicates Masters Coal seam is in the Tongue River Member. Please clarify and make appropriate changes throughout the submittal (Example: MP 4.4). (MK)

Response MuK 33 – Round 1

Revised text as requested.

Comment MuK 33 – Round 2

No comment received.

Response MuK 33 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MuK 34 – Round 1

Mine Plan, MP.1.1 Type of Mine, 34. Major coal seams on the Brook Mine include: Dietz (1,2,3), Monarch, Upper Carney, Lower Carney and Masters.”. Dietz (1,2,3) coal seam is not included in the description presented in Section D5.3.3.3, Appendix D5. Please clarify: (i) the seams that will be mined by the Brook Mine and (ii) include the description of all the coals seams as appropriate in Appendix D5 and Appendix D6. (MK)

Response MuK 34 – Round 1

Please refer to Mine Plan Section MP.4.4.1 for targeted coal seams at the Brook Mine.

Comment MuK 34 – Round 2

No comment received.

Response MuK 34 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MuK 35 – Round 1

Mine Plan, MP.5.8 Mine Pit Dewatering Plan, Consider using the groundwater model referenced in Appendix D-3 to provide a description for a range of estimates on anticipated dewatering rates/volumes and groundwater inflows to the mine pit. (MK)

Response MuK 35 – Round 1

The text in Section MP.5.8 is to indicate that water entering the pit from either groundwater or surface water will be controlled using sumps and treated prior to discharge.

Comment MuK 35 – Round 2

Response not accepted. Please provide a range of estimates of the expected groundwater inflows to the pit. The intent of this comment is to understand the volume/rate of water that will be dewatered to facilitate mine operations. In addition, please clarify if the groundwater model provides an estimate of this inflow to the pit. (MK)

Response MuK 35 – Round 2

Yes, the amount of water discharging from the drains to simulate mining can be used to estimate how much water would enter into the mine pits during the mining scenarios. The model predicted pit inflow rates are estimated to range between 0.3 gpm and 75 gpm depending on the location of the mine pits. Model predicted pit inflow rates have been added to Addendum MP-3 Section 4.9 (Table 4.9-2). Also, text describing the range of flows has been added to Section MP.5.8.

Comment MuK 35 – Round 3

Response accepted.

Comment MuK 36 – Round 1

Mine Plan, MP.5.8 Mine Pit Dewatering Plan, 36. Please clarify the anticipated effects of the faults on the dewatering plan or groundwater impacts during mining. (MK)

Response MuK 36 – Round 1

Since the water will be collected in a sump, treated, and then discharged, the faults should have no effect.

Comment MuK 36 – Round 2

Response not accepted. It is acknowledged that the water will be collected in a sump. The intent of the comment is to get an understanding on the effects of faults on the inflows to the pit. For example, are the pit inflow rates sensitive to the location and permeability of the faults within the permit boundary? If yes, please provide a range of estimates to account for this sensitivity. (MK)

Response MuK 36 – Round 2

The faults do influence the inflow to the pits. As shown on MP-3 Figures 4.9-12, 4.9-13, and 4.9-14 the faults generally cause a shadow effect where the coals downstream of the faults dry out because the faults prevent efficient recharge of the coal aquifer downstream of the fault. An additional table added to Addendum MP-3 (Table 4.9-2) allows the influence of the faults on the pit inflows to be further evaluated. As shown on Table 4.9-2 the predicted pit inflow rates decline significantly between 2018 and 2019. Between 2018 and 2019 the mining moved closer to the fault located in the northeast side of the permit. The decline in pit inflow is partially due to the fact that the coals immediately downgradient of the fault are drier.

Comment MuK 36 – Round 3

Response accepted.

Comment MuK 37 – Round 1

Mine Plan, MP.5.9 Dewatering Wells, 37. Please provide a brief discussion on the anticipated quality of groundwater removed at various stages of mining. (MK)

Response MuK 37 – Round 1

Revised text as requested.

Comment MuK 37 – Round 2

Response not accepted. In addition to the reference to Appendix D6, please provide a description of any expected variability or trends in water quality of the groundwater removed as different coal seams are mined. Are there any expected groundwater constituents of concern based on Appendix D6? (MK)

Response MuK 37 – Round 2

The third paragraph of Section MP.5.9 now includes a short discussion summarizing information from Appendix D6. The discussion states some of reasons why water

quality could vary during the progression of mining operations. However, the discussion also states that even with the variability, there are no expected groundwater constituents of concern that could cause problems during dewatering and surface containment. The following table is a summary of the information already provided in Appendix D6:

Constituent of Concern	Units	Acute Standard¹	CRN	MST	CRN-MST
Priority Pollutants					
Arsenic, dissolved	mg/L	0.34	<0.005	<0.005	<0.005 - 0.007
Cadmium, dissolved	mg/L	0.002	<0.001	<0.001	<0.001 - 0.001
Copper, dissolved	mg/L	0.0134	<0.01 - 0.02	<0.01	<0.01
Lead, dissolved	mg/L	0.0646			<0.02
Mercury, dissolved	mg/L	0.0014	<0.001	<0.001	<0.001
Nickel, dissolved	mg/L	0.4682	<0.01	<0.01	<0.01
Selenium, dissolved	mg/L	0.02	<0.005 - 0.005	<0.005	<0.005 - 0.005
Zinc, dissolved	mg/L	0.1172	<0.01 - 0.01	<0.01 - 0.02	<0.01
Non-Priority Pollutants					
Ammonia	mg/L	varies ²	<0.1 - 7.6	2 - 10.6	1 - 2.3
Chloride	mg/L	860	7 - 27	7 - 30	11 - 24
Fluoride	mg/L	2 ³	0.5 - 1.9	0.5 - 1.5	1.7 - 2
Laboratory pH	s.u.	6.5-9.0	7.6 - 8.3	7.6 - 8.4	8.3 - 8.4
Nitrate/Nitrite	mg/L	10 ³	<0.1 - 7.9	<0.1 - 8	<0.1 - 1.2
Barium, dissolved	mg/L	2 ³	<0.1	<0.1	<0.1
Iron, dissolved	mg/L	0.3 ³	<0.05 - 0.22	<0.05 - 0.68	<0.05 - 0.21

¹ WDEQ-WQD Rules and Regulations Chapter 1, Appendix B, Aquatic Life Acute Value

² WDEQ-WQD Rules and Regulations Chapter 1, Appendix C, Ammonia Toxicity is pH and Temperature Dependent

³ WDEQ-WQD Rules and Regulations Chapter 1, Appendix B, Human Health Consumption of Fish and Drinking Water

As can be seen in this summary table, most constituents in the Carney and Masters coal seams fall below the acute standard. This table has not been included in the Mine Plan because this is baseline data that does not belong in the Mine Plan. This table has also not been added to Appendix D6 because the groundwater quality constituent concentrations are already summarized in Appendix D6. RAMACO has

committed in the Mine Plan to monitoring groundwater quality during the course of operations in order to ensure that there are no constituents of concern that could cause issues while dewatering the mine pits in potential surface containment.

Comment MuK 37 – Round 3

Response accepted.

Comment MuK 38 – Round 1

Mine Plan, MP.5.9 Dewatering Wells, 38. If groundwater is discharged into a stream channel, anticipated discharge flow rate, water quality, and estimated seasonal discharge of the groundwater should be tabulated. The availability and suitability of this water for downstream water users should also be evaluated. Please clarify if this is an expected mechanism to discharge pumped groundwater. (MK)

Response MuK 38 – Round 1

Revised text as requested.

Comment MuK 38 – Round 2

No comment received.

Response MuK 38 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MuK 39 – Round 1

Mine Plan, MP.5.8 Groundwater Rights, Please include a description on any expected degradation of groundwater quality caused by the mining operation (including lateral flow through spoils) in the adjudicated wells. (MK)

Response MuK 39 – Round 1

Revised text as requested.

Comment MuK 39 – Round 2

No comment received.

Response MuK 39 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MuK 40 – Round 1

Mine Plan, MP.6.2.Groundwater, 40. Please provide a brief discussion on any hydrologic effects caused by anticipated changes in recharge to the aquifers during mining. (MK)

Response MuK 40 – Round 1

Revised text as requested.

Comment MuK 40 – Round 2

Response not accepted. Not able to locate the revision made. Typically, the revisions from other operators are highlighted with bolded text or a different color to enable the reviewer to efficiently review the changes made. Without that tracking mechanism, it is difficult to review the exact revisions. Please consider using a distinct tracking mechanism in the future submittals. (MK)

Response MuK 40 – Round 2

RAMACO does not anticipate significant changes to recharge rates due to disturbance at the Brook Mine. Two sentences have been added to the end of Section MP.6.2.1 that state that RAMACO doesn't expect significant fluctuations in recharge rates, but commits to monitoring groundwater levels according to Section MP.7 and will report any significant fluctuations in groundwater levels that could be attributed to altered recharge rates.

Comment MuK 40 – Round 3

Response accepted.

Comment MuK 41 – Round 1

Mine Plan, MP.6.2.Groundwater, 41. Please provide an assessment of any subsidence effects (Addendum MP-6) on the hydrologic system during operations. (MK)

Response MuK 41 – Round 1

Revised text as requested.

Comment MuK 41 – Round 2

No comment received.

Response MuK 41 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MuK 42 – Round 1

Mine Plan, MP.6.2.Groundwater, 42. Please discuss if there are any expected impacts on groundwater quality caused by subsidence. (MK)

Response MuK 42 – Round 1

Revised text as requested.

Comment MuK 42 – Round 2

No comment received.

Response MuK 42 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MuK 43 – Round 1

Mine Plan, MP.6.3.2 Plan to Mitigate the Impacts on Groundwater, 43. If the quality or quantity of adjudicated water supplies are affected, then an alternative source should be identified as part of the mitigation plan. Please provide a statement to meet this statutory requirement (W.S. § 35-11-415(b)(xii)). (MK)

Response MuK 43 – Round 1

Revised text as requested.

Comment MuK 43 – Round 2

No comment received.

Response MuK 43 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MuK 44 – Round 1

Mine Plan, MP.7.2 Groundwater Monitoring, 44. Please clarify the lack of any shallow monitor wells near Hidden Water Creek, Goose Creek and Tongue River alluvium and if this will be an impediment to completely characterize the groundwater impacts during mining. (MK)

Response MuK 44 – Round 1

Hidden Water Creek has no alluvium therefore, no shallow well can be installed. Goose Creek in the area of the permit is through a reclaimed mine area (pre-law) therefore there is not alluvium. As discussed throughout we will not impact the Tongue River Alluvium. RAMACO will add wells in the Tongue River Alluvium.

Comment MuK 44 – Round 2

Response not accepted. Please provide a more detailed plan for installing the proposed alluvial monitoring well(s). (MK)

Response MuK 44 – Round 2

See comments MK-21,22 (Round 2) responses. Discussion of the potential AVF impacts and proposed alluvial monitoring plan is presented in Mine Plan Section MP.25.

Comment MuK 44 – Round 3

Response accepted.

Comment MuK 45 – Round 1

Mine Plan, MP.7.2 Groundwater Monitoring, 45. Please clarify the possibility of any of the monitor wells shown in Exhibit MP.7-7 being discontinued due to any constraints in the proposed-mine plan (example: mined through). (MK)

Response MuK 45 – Round 1

Revised text as requested.

Comment MuK 45 – Round 2

No comment received.

Response MuK 45 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MuK 46 – Round 1

Mine Plan, MP.8 Water use, 46. Page MP-47 states, “Industrial water will be obtained from groundwater wells or from water collected in sediment and flood control reservoirs.” Please clarify if the groundwater wells mentioned in this statement are wells that will be exclusively used as industrial supply wells or if they are same as dewatering wells. (MK)

Response MuK 46 – Round 1

Revised text as requested.

Comment MuK 46 – Round 2

Response not accepted. Please provide additional description on the source aquifer for the proposed industrial supply wells. (MK)

Response MuK 46 – Round 2

Discussion regarding wells as a water source was removed from Section MP.8. Due to the coal seams being mostly dry and the only reliable aquifers being very deep, RAMACO will rely on surface water rights and water collected in the sediment and

flood control reservoirs and other sources for supplying the quantities of water needed for industrial purposes. Refer to Table MP.8-1 for a summary of water quantity obtained from each source.

Comment MuK 46 – Round 3

Response accepted.

Comment MuK 47 – Round 1

Mine Plan, MP.8 Water use, 47. Page MP-48 states, “It is estimated that the total water use will be approximately 400 million gallons per year.” Please provide a discussion comparing the reported water use by other mines of similar size in the Powder River Basin.

Response MuK 47 – Round 1

No record of reported water use was discussed in the annual reports submitted to WDEQ for several different mines within the Powder River Basin. As such, a comparison was unable to be made.

Comment MuK 47 – Round 2

Response not accepted. The SEO requires a submittal of the water use by the other mines. In addition, the coal review reports by the BLM also provide a summary of water use. Example: AECOM, Inc., 2014, Update of the Task 1B Report for the Powder River Basin Coal Review – Current Water Resources Conditions, prepared for Bureau of Land Management High Plains District Office and Wyoming State Office, <http://www.blm.gov/pgdata/etc/medialib/blm/wy/programs/energy/coal/prb/coalreview/phase2/Task1B.Par.91805.File.dat/Task1B.pdf>.

Response MuK 47 – Round 2

As discussed in the meeting between WDEQ and WWC on September 1, 2015, the AECOM report has been added as a reference to the Mine Plan. Water usage for the Brook Mine has been reevaluated and presented in Table MP.8-1. The fourth paragraph of Section MP.8 summarizes the expected water usage by the Brook Mine per year. This paragraph states that the approximate annual water usage at the Brook Mine will be 368 acre-feet which is on the lower end of water usage ranges provided in the report (300 to 920 acre-feet).

Comment MuK 47 – Round 3

Response accepted.

Comment MuK 48 – Round 1

Mine Plan, MP.8 Water use, 48. Page MP-48 states, “It is estimated that the total water use will be approximately 400 million gallons per year.” Please provide a comparison of

this estimated total water use against the various estimated water sources available during mining (Example: from dewatering wells). It will be very helpful to provide a discussion on contingency measures during extreme wet/dry years or if the proposed mine plan does not require extensive dewatering. (MK)

Response MuK 48 – Round 1

RAMACO is currently working to solidify the necessary water right for this water. The sources and associated amounts are in discussions and therefore not presented at this time.

Comment MuK 48 – Round 2

Response not accepted. The information will be reviewed as soon as it is made available to the LQD. (MK)

Response MuK 48 – Round 2

Table MP.8-1 has been added to the Mine Plan to outline the specific water uses with estimated quantities projected at the Brook Mine. Table MP.8-1 also shows the expected volume of water from each source. The fourth paragraph of Section MP.8 has been revised to state that the Brook Mine will use approximately 120 million gallons per year with an expected variability of plus or minus 20 percent. A statement was added to the fourth paragraph of Section MP.8 that enough water is available from the surface water rights that any variations in the quantities from other sources can be covered by the surface water rights.

Comment MuK 48 – Round 3

Response accepted.

Comment MuK 49 – Round 1

Mine Plan, MP.8 Water use, 49. Please clarify if there is any expected variability in this projected water use (example: is it closely related to the mine plan). (MK)

Response MuK 49 – Round 1

Revised text as requested.

Comment MuK 49 – Round 2

Response not accepted. The text indicates that the total water use will be approximately 400 million gallons per year. Please provide at least a range of expected variability in this projected annual water use. (MK)

Response MuK 49 – Round 2

The water usage at the Brook Mine has been reevaluated. Table MP.8-1 has been added to the Mine Plan which summarizes the expected quantities of water usage per day by specific use. This table shows that the Brook Mine is expected to use approximately 328,200 gallons per day. The fourth paragraph of Section MP.8 states that this equates to approximately 120 million gallons per year (significantly less than originally reported). The text in the fourth paragraph of Section MP.8 also states that the water usage has an expected variability of plus or minus 20 percent.

Comment MuK 49 – Round 3

Response accepted.

Comment MuK 50 – Round 1

Mine Plan, Addendum MP-3 Groundwater Model, 50. Page Addendum MP-3-19 states, “Since, most of the wells within the modeled domain are stock wells with intermittent pumping and completed in geologic strata below the Masters Coals, they are relatively inconsequential to the groundwater system modeled in this report.” Please provide a Figure (or reference) to show these wells, their depths and discuss on why they are hydrogeologically isolated from the effects of the proposed mine. (MK)

Response MuK 50 – Round 1

All the groundwater rights are tabulated within Appendix B of the adjudication volume and Exhibits 5 and 8 in the adjudication volume show the locations of each respective groundwater right. Please note that adjudication Exhibits 5 and 8 include monitor wells in addition to stock and domestic wells so all the wells shown on the exhibits are not necessarily wells that are being used as water supply wells. In fact, almost all the completed water wells shown on Exhibit 5 of the adjudication volume within the Brook Mine permit area are actually monitor wells. The Cross Sections presented in Exhibit 2 of Addendum D5-3 show the depth of the coal seams at various locations within the Brook Mine Permit. For comparison, the depths of each well are listed in the tabulation in Appendix B of the adjudication volume.

The statement on Page MP-3-19 “they (the wells) are relatively inconsequential to the groundwater system modeled in this report” means that the wells are not believed to be significant stressors to the groundwater system because of their relatively low pumpage rates. This statement should not be interpreted to mean that all of the stock and domestic wells in the area are hydrologically isolated from the coals proposed for mining within the Brook Mine Permit area. In fact, Section 4.9 of Addendum MP-3 specifically describes 26 wells that, based on their depths and locations, are likely completed within the coals. The expected impacts to these wells were assessed as part of the modeling exercise. Based on a comparison between the reported depths in the water rights tabulation in Appendix B of the adjudication volume and the geologic cross sections in Addendum D5-3, the other stock and domestic wells in the area were

determined to be completed either in the Tongue River alluvium, or deeper strata below the Carney coal and do not have a direct hydrologic connection to the coals proposed for mining in the Brook Mine and were not specifically evaluated in the groundwater model.

Along the eastern edge of the model domain there are a large number of CBM wells and, based on available data presented in the water rights tabulation in Appendix B of the Adjudication volume, these wells are likely pumping water from the Carney and Masters coal seams. The impacts from the CBM wells are described in detail within later sections of the report. However, the text on page MP-3-19 does not speak to the CBM wells. Minor changes to the text on page Addendum MP-3-19 and additional explanatory text have been added to this page to provide further clarification.

Comment MuK 50 – Round 2

Response conditionally accepted. Please incorporate the context of the response into the permit application. (MK)

Response MuK 50 – Round 2

Section 2.2 of Addendum MP-3 had previously been updated to incorporate this comment response. Additional explanatory text has also been added to Addendum MP-3 Section 2.3 to further incorporate the context of this response into the Permit Application.

Comment MuK 50 – Round 3

Response accepted.

Comment MuK 51 – Round 1

Mine Plan, Addendum MP-3 Groundwater Model, 51. Page Addendum MP-3-20 states, “The faults are significant in lateral extent and form natural no flow boundaries”. Please provide a discussion (or refer to a discussion) on how these faults were determined to be no flow boundaries. (MK)

Response MuK 51 – Round 1

Faulting within the permit area was mapped by B.E. Barnum on the USGS Monarch Quadrangle. As noted in Section D5.3.2, Barnum indicates fault displacements on the order of 50 feet within the mine area. Lithologic logs provided in Addendum D-5-3 demonstrate that the dominating lithology in the column is claystone and coal thicknesses are less than 20 feet. This offset geology from faulting results in a claystone hanging or footwall adjacent the coal aquifer and therefore discontinuity of the aquifer and an assumed hydrologic flow boundary.

Comment MuK 51 – Round 2

Response not accepted. It is appreciated and acknowledged the note of lithologic logs. In addition, please clarify or substantiate if there is any hydrologic evidence to support the interpretation that the faults are no flow boundaries (Example: water levels, water quality or other hydrologic evidence). This will increase the validity of the no-flow assumption. (MK)

Response MuK 51 – Round 2

In addition to the lithological evidence discussed in the previous response that supports treatment of the faults as no flow barriers, comparisons of water levels in coal monitor wells on either side of the fault also demonstrate that the faults serve as no flow barriers. Exhibits D6.2-2 and D6.2-3 in Addendum D6 illustrate the potentiometric surface in Masters and Carney coal seams, respectively. As shown on Exhibits D6.2-2 and D6.2-3, within the northeastern portion of the Brook Mine permit area there are two monitor well clusters that straddle both sides of a fault (578408 and 578409). In the case of the Masters coal, the measured water level in the monitor well on the upper side of the fault (578408-MST) is 173 feet higher than the water level measured in the monitor well completed on the downblock side of the fault (578409-MST). Similarly, the measured water level difference across the fault in the Carney monitor wells is approximately 180 feet. The change in potentiometric head between the monitor wells on both sides of the fault is significantly higher than would be expected due to the natural gradient in this area. Therefore, the variation in the measured potentiometric head across the fault demonstrates that it does serve as a hydraulic barrier. Additional text has been added to Addendum MP-3 Section 2.4.1 to more fully describe the effects that the faults have on the conceptual flow model.

Supplemental analysis of water quality on opposite sides of the faults has been conducted to note any difference in water quality that would indicate that the faults serve as no-flow barriers. This analysis and discussion has been added to Addendum MP-3 in Section 2.4.1.

Comment MuK 51 – Round 3

Response accepted.

Comment MuK 52 – Round 1

Mine Plan, Addendum MP-3 Groundwater Model, 52. Please clarify the reason for not estimating vertical hydraulic conductivity of the interburden using an aquifer test. (MK)

Response MuK 52 – Round 1

Response to this comment is partially clarified in responses to MK's Comments 18 and 19 above. During the aquifer test conducted at the 578409 well cluster no response was observed across the interburden, therefore, the vertical hydraulic conductivity of

the interburden was too low to measure in the aquifer test. Furthermore, the static water levels in the Masters and Carney coal seams are different which demonstrates that the hydraulic conductivity of the interburden is very low. Therefore, literature values were utilized and adjusted within reasonable bounds to improve model calibration.

Comment MuK 52 – Round 2

Response conditionally accepted. Please incorporate the context of the response into the permit application. (MK)

Response MuK 52 – Round 2

The context of this response was incorporated into Addendum D6-8 “Pumping Test Report.” The context was added into Section D6-8.4 “Determination of Aquifer Parameters.”

Comment MuK 52 – Round 3

Response accepted.

Comment MuK 53 – Round 1

Mine Plan, Addendum MP-3 Groundwater Model, 53. Page Addendum MP-3-25 states, “With no unnatural stresses on the system ...” Please provide a discussion of the CBM impacts on the water levels. It appears that the hydrographs presented in Appendix D6 do not show the impacts of CBM. (MK)

Response MuK 53 – Round 1

There are multiple CBM production wells located along the eastern side of the groundwater domain. In order for the CBM producers to be able to produce gas it is necessary to significantly lower the water levels in the coal to release the gas in the coal fractures. CBM production began in this area around 1999. Therefore, it was conservatively assumed that CBM production has already resulted in lowering the water levels in the coal aquifers to the top of the coal aquifer along the eastern edge of the model domain and the general head boundaries were set accordingly to simulate this effect. Even though water level data in the coal aquifer prior to CBM production is limited because of the lack of monitor well data, prior to CBM production, the potentiometric head in the coal was estimated to be significantly higher than the top of coal.

The hydrographs presented in Appendix D6-9 do not show the impacts of CBM because they show water level changes over a one year period roughly 13 years after CBM production began in the area, and if the wells were going to be impacted by CBM, it is likely that they have already been impacted. Please note that the model assumed that CBM production would continue into the future resulting in the water levels in the coal being maintained at unnaturally low levels. Therefore, the model has

conservatively estimated the combined impacts from both CBM and the proposed coal mining activities. Currently, a large majority of the CBM wells are being plugged and abandoned which may result in higher than predicted water level recovery rates in the coal aquifer.

Text edits were made to page MP-3-25 to help clarify the discussion.

Comment MuK 53 – Round 2

No comment received.

Response MuK 53 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MuK 54 – Round 1

Mine Plan, Addendum MP-3 Groundwater Model, 54. There are two sub-sections for recharge, Section 2.5.3 and Section 2.6.1. Please clarify/consolidate. (MK)

Response MuK 54 – Round 1

The two subsections have been combined into one subsection under Section 2.6.1.

Comment MuK 54 – Round 2

No comment received.

Response MuK 54 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MuK 55 – Round 1

Mine Plan, Addendum MP-3 Groundwater Model, 55. Page Addendum MP-3-26 states, "... drain cells were placed in the model to simulate seeps from the outcrops." Please provide a discussion on the evidence for seeps (or reference) observed during field surveys. Were there any field data collected on the location and flow rates of these seeps? (MK)

Response MuK 55 – Round 1

Evidence of seeps from outcrops can be seen in Color Infrared Imagery (CIR), which is included in the permit as Exhibit D11.1-1. The areas of seepage are manifested on the CIR imagery as areas with more vegetation. Evapotranspiration from the vegetation growing along the seep removes all the water before it emanates from the formation into the drainage. Therefore, no measurements of the seepage rate at the outcrops were possible or are available. Additional discussion explaining the need for drain cells within the model is provided in Section D6.2.2. Also, text was added to Section D6.2.2 to clarify that no field flow measurements were available.

Comment MuK 55 – Round 2

Response conditionally accepted. Please include the discussion on CIR into the permit application (MK)

Response MuK 55 – Round 2

Additional text describing the seeps was added to Addendum MP-3 Section 2.6 to incorporate the context of this response.

Comment MuK 55 – Round 3

Response accepted.

Comment MuK 56 – Round 1

Mine Plan, Addendum MP-3 Groundwater Model, 56. Page Addendum MP-3-27 states, “River cells from MODFLOW’s river boundary conditions package were placed in the model to simulate the Tongue River and Goose Creek.” Please provide a conceptual discussion supported by field observations on the type/nature of interaction of these streams with groundwater (Gaining stream vs. losing stream). (MK)

Response MuK 56 – Round 1

As described in Section 2.3 of MP-3, the dip of the strata in the project area is generally east-southeast into the Powder River Basin and the groundwater flow direction follows this trend regionally. As such, the Tongue River comes into contact with the coal seams of interest near the updip side of the coal seams. Interactions between the surface water and groundwater occur at those points where permeable formations sub-crop into alluvial/surface water bodies. Both the Carney and the Masters coal subcrop under the Tongue River near the western edge of the model domain. Conceptually these subcrops are the only places where the coals would be in contact with the surface water. Section 2.3 of Addendum MP-3 describes the conceptual groundwater flow in some detail.

As described in Addendum MP-3 Section 2.3, the Carney coal is largely dry to the north and west of its subcrop into the Tongue River alluvium and becomes saturated at an elevation just above the elevation where it subcrops beneath the Tongue River alluvium. Therefore it is likely that the Carney Coal would lose water to the Tongue River alluvium. The potentiometric surface in the Masters Coal is roughly the same as the potentiometric surface of the Tongue River where the Masters coal subcrops beneath it. A review of the steady state groundwater model shows that where the River boundary cells are immediately above the Masters Coal the net effect is that the River boundary cells input approximately 3.2 gpm into the model. Conversely, near the upper and lower Carney Coal/Tongue River outcrops the River cells are taking roughly 0.16 gpm out of the model. Since the coal outcrops occur beneath the Tongue River there is no way to field verify these flows but conceptually they do seem reasonable.

The river boundary cells extend to the bottom of the layer in which they are placed as discussed in response to comment MUK 74 and MUK 84. The River boundary cells were placed in Layer 1 to the confluence of Goose Creek and the Tongue River which extends east of the area where the Carney Coal would be in communication with the Tongue River alluvium. Due to the fact that the River boundary cells extend to the bottom of the layer they do provide a conduit for the River to provide recharge into the Carney Coal even though the River would be physically separated from the coal by multiple zones of low permeability shales. The estimated recharge occurring in this area from the Tongue River to both layers 1 and 2 is approximately 8 gpm. The discharge into the coals is likely conservatively overestimated and not all of the 8 gpm would necessarily end up in the coal as some of it also discharges to layer 1. As such, the model conservatively estimates that up to 11.2 gpm would be discharged from the river to the coals or overburden between the Carney Coal and the Tongue River.

The strata located above the coal seams of interest is generally claystone with low permeability as discussed in MP-3 Section 2.2. Therefore, interaction of groundwater between these units and the Tongue River or Goose Creek is very limited. Within the model domain, the Tongue River Alluvium does have large deciduous trees and other vegetation immediately adjacent to the river. Conceptually, evapotranspiration from the vegetation along the Tongue River would indicate that through the model domain the Tongue River is a losing Stream. Throughout most of the model domain where the Tongue River is present, there low permeability overburden strata between the Tongue River alluvium and the coal seams which hydrologically isolate the Tongue River from both the Masters and the Carney coal seams. Since Goose Creek is located in the eastern portion of the model domain where the coal is significantly below the alluvium and the clay intervals are even thicker, the Goose Creek alluvium is also hydrologically separated from the Masters and Carney Coals. The Goose Creek alluvium would likely see similar losses to evapotranspiration that would be observed in the Tongue River alluvium.

Comment MuK 56 – Round 2

Response conditionally accepted. Please incorporate the context of the response into the permit application. (MK)

Response MuK 56 – Round 2

Text from this response has been incorporated into Addendum MP-3 Sections 2.3 and 4.7.2 as appropriate.

Comment MuK 56 – Round 3

Response accepted.

Comment MuK 57 – Round 1

Mine Plan, Addendum MP-3 Groundwater Model, 57. Please provide a discussion on any contribution of groundwater baseflow to the major surface water bodies within the permit boundary. (MK)

Response MuK 57 – Round 1

As described in the response to comment MuK 56, conceptually, very little groundwater base flow from the Carney and Masters coal seams are expected to contribute to the surface water bodies within the permit boundary. The mass balance table provided in response to comment MuK 73 demonstrates that much more water is expected to enter the groundwater system from the surface water bodies (river cells) than is contributed to the surface water bodies from groundwater baseflow.

Comment MuK 57 – Round 2

Response conditionally accepted. Please incorporate the context of the response into the permit application. (MK)

Response MuK 57 – Round 2

The context of this response has been added to Addendum MP-3 via additional text to address comments MuK 56 and MuK 73. Specifically, text additions to Addendum MP-3 Section 4.10 include the context of the Round 1 response.

Comment MuK 57 – Round 3

Response accepted.

Comment MuK 58 – Round 1

Mine Plan, Addendum MP-3 Groundwater Model, 58. In section 3.2 MODFLOW Input Files, was aerial recharge used as an input file? Please clarify if evapotranspiration was considered as a discrete input or lumped into net aerial recharge. (MK)

Response MuK 58 – Round 1

Yes, the recharge package was used as an input file. Section 3.2 of Addendum MP-3 was updated to include a discussion of the recharge package. The evapotranspiration (ET) package was not utilized in the model. To address the effects of ET, the recharge rates were adjusted down in proportion to the estimated losses created by ET. Within most of the model domain where evapotranspiration would occur, the low permeability overburden between the surface and the coal seams of interest provide a hydrologic barrier so the evapotranspiration was ignored in these areas.

Comment MuK 58 – Round 2

Response conditionally accepted. Please incorporate the context of the response into the permit application. (MK)

Response MuK 58 – Round 2

Addendum MP-3 Section 4.2.2 was updated to incorporate the context of the Round 1 response.

Comment MuK 58 – Round 3

Response accepted.

Comment MuK 59 – Round 1

Mine Plan, Addendum MP-3 Groundwater Model, 59. Page Addendum MP-3-31 states, “Layer 1 – represents the coal overburden”. Please clarify if the alluvial aquifer was included in the model. Please provide justification for not considering the alluvial aquifer in the model. (MK)

Response MuK 59 – Round 1

As described in the responses to comments MuK 56 and MuK 57, the only place within the model domain where there is potential for interactions between any alluvial aquifers and the coal seams of interest is where the coal is directly below the Tongue River alluvium or Slater Creek colluvium. Where the coal is in direct contact with alluvium/colluvium, layer 1 (the coal overburden) was assigned a higher vertical hydraulic conductivity to allow the layer to better emulate the alluvial/colluvial aquifer in this location. This zone of higher hydraulic conductivity in layer 1 is depicted on Addendum MP-3 Figure 4.2-1. Groundwater Vistas does not allow discontinuous layers throughout the model domain so this allowed the alluvium/colluvium to be effectively be modeled without the need to add an additional layer across the top of the entire model domain. This helped to improve the computational efficiency of the model. Since the overburden has a very low hydraulic conductivity and hydrologically separates the coals from the other alluvial/colluvial deposits within a large portion of the model domain, there is no reason to model any additional alluvial/colluvial deposits. To help clarify this comment Figure 4.2-1, was prepared and sections 2.5 and 4.2 of MP-3 have been updated.

Comment MuK 59 – Round 2

Response conditionally accepted. Please incorporate the context of the response into the permit application. (MK)

Response MuK 59 – Round 2

With the addition of the text to address comments MuK 56 and Muk 57 as well as the text added to Addendum MP-3 Section 4.2.1, the context of this comment has been incorporated into Addendum MP-3.

Comment MuK 59 – Round 3

Response accepted.

Comment MuK 60 – Round 1

Mine Plan, Addendum MP-3 Groundwater Model, 60. Page Addendum MP-3-31 states, “Layer 3- Carney Interburden. This interval is generally of low to very permeability in the western portion of the Project Area”. Please clarify how the areas where Layer 3- Carney Interburden is absent are treated in the groundwater model. (MK)

Response MuK 60 – Round 1

Ground Water vistas does not allow discontinuous layers. Therefore, Layer 3 is continuous across the entire model domain. Where the coal seam coalesces on the east portion of the model, the Layer 3 interburden was modeled as coal by setting hydraulic properties of the layer equivalent to the values of the overlying and underlying coal seams. Additional text has been added to Section 4.2.1 of Addendum MP-3 to further describe how the hydraulic conductivities were assigned to layer 3.

Comment MuK 60 – Round 2

Response conditionally accepted. Please incorporate the context of the response into the permit application. (MK)

Response MuK 60 – Round 2

The context of the Round 1 response has been incorporated into Addendum MP-3 Section 4.2.1.

Comment MuK 60 – Round 3

Response accepted.

Comment MuK 61 – Round 1

Mine Plan, Addendum MP-3 Groundwater Model, 61. Please include a discussion of the thickness of all model layers. (MK)

Response MuK 61 – Round 1

Addendum MP-3 Section 2.5 describes the thickness of the various coal seams. Additional text has been added to MP-3 Section 4.1 to generally describe the thickness of each layer. Following are the modeled thicknesses for each layer:

- Layer 1-The thickness for this layer varies throughout the model domain. Near the western side of the model the layer is often absent where all the strata geologically younger than the Carney coal has been eroded off. These areas are generally represented as no flow cells in the model. Within the eastern portion of the model Layer 1 can be substantial. In the model the maximum thickness of Layer 1 in the eastern side of the model domain was approximately 1,100 feet.
- Layer 2-The Upper Carney coal was modeled with a constant thickness of 7 feet throughout the model.
- Layer 3-The Carney coal interburden layer varied in thickness from 4 feet up to 15 feet within the active portion of the model.
- Layer 4-The Lower Carney coal was modeled with a constant thickness of 8 feet within the model.
- Layer 5 The Carney/Masters coal interburden layer varied in thickness from 4 feet up to 107 feet within the model.
- Layer 6-The Masters coal was modeled with a constant thickness of 6 feet within the model.

Comment MuK 61 – Round 2

Response not accepted. It is acknowledged that Section 4.2.1 provides the thickness of the model layers. Also, the response states, “*Addendum MP-3 Section 2.5 describes the thickness of the various coal seams.*” Addendum MP-3, Section 2.5 does not describe the thickness but it is a section on hydraulic properties. Please clarify. (MK)

Response MuK 61 – Round 2

The previous sections reference was incorrect. Addendum MP-3 Section 2.5.1.3 provides a statement regarding the thickness of the Carney Coal. Addendum MP-3 Section 2.5.1.4 provides a statement regarding the thickness of the Masters Coal.

Comment MuK 61 – Round 3

Response accepted.

Comment MuK 62 – Round 1

Mine Plan, Addendum MP-3 Groundwater Model, 62. Please include a justification for not considering the underlying zones beneath the Masters coal seam in the model. (MK)

Response MuK 62 – Round 1

The Masters coal is underlain by the Lebo Shale. The Lebo Shale is a thick (Appendix D5 Section D5.2.3), regional confining interval in the project area as described in Mine Plan Addendum MP-3 Section 2.1. There are no aquifer units identified within the model domain within the Lebo Shale with direct hydrologic connection to any of the elements of the model. Since the Lebo Shale is a regional confining unit, if it had been included in the groundwater model, it would have been assigned hydraulic parameters typical of a shale interval (very low hydraulic conductivity) and it would have essentially been a no flow barrier to the more permeable Masters coal above it. Groundwater Vistas treats the bottom of the model as a no flow boundary. Therefore, the Lebo Shale is for all practical purposes included in the model as a confining interval with the way the model is currently defined.

Comment MuK 62 – Round 2

Response conditionally accepted. Please incorporate the context of the response into the permit application. (MK)

Response MuK 62 – Round 2

The second to last paragraph in Addendum MP-3 Section 4.1 incorporates the context of the Round 1 response.

Comment MuK 62 – Round 3

Response accepted.

Comment MuK 63 – Round 1

Mine Plan, Addendum MP-3 Groundwater Model, 63. Please provide appropriate cross section(s) of the model grid overlaid with the drill hole data collected during baseline characterization. This will help the evaluation of the adequacy of model layer thicknesses against the stratigraphic field data. (MK)

Response MuK 63 – Round 1

As noted in Addendum MP-3 Section 4.1, the Groundwater model layers were developed from a 3D geologic model developed from drill hole data within the project area developed for the purposes of making volumetric coal estimates. Minor updates to the surfaces were made where new data provided by additional exploration drilling was completed. An additional figure was developed (Addendum MP-3 Figure 4.1-3) and included in Addendum MP-3 that depicts actual cross sections cut from the groundwater model. Addendum D5-3 of Appendix D5 includes geologic cross sections with drill hole data that can be compared back to the actual cross sections included in Figure 4.1-3 of Addendum MP-3.

Comment MuK 63 – Round 2

No comment received.

Response MuK 63 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MuK 64 – Round 1

Mine Plan, Addendum MP-3 Groundwater Model, 64. Please clarify how the layers were modeled to represent the confined/unconfined aquifer types. (MK)

Response MuK 64 – Round 1

Groundwater Vistas has a “layer type” control that was set to #5: Confined/Unconfined, which allows the model to determine whether to use storativity or specific yield for the storage coefficient based on the elevation of the water elevation vs. formation tops. Groundwater Vistas handles the aquifer type classification without further inputs.

Comment MuK 64 – Round 2

Response not accepted. It is acknowledged and noted that GW Vistas handles it in an automated mode. Please provide a description on if there were any additional checks conducted on the results from the groundwater model to verify if the aquifer type used by GW Vistas is consistent with the conceptual model and field data. Example discussion: Are the deeper layers confined for the entire simulation or do they change from confined to unconfined due to mine operations? (MK)

Response MuK 64 – Round 2

Within the model domain the coal aquifers are relatively thin, ranging in thickness from 4 to 15 feet. Because the coal aquifers are relatively thin, during the model simulation the coals were typically either confined or dry. The only place where unconfined conditions occurred in the groundwater model simulations were near the outcrops or in the cells immediately adjacent to cells that went dry during the modeling simulations. Similarly, during mining simulations the cells immediately next to the mining areas became unconfined as well. When the water level in a cell drops below the top of the layer, Groundwater Vistas treats that cell as an unconfined aquifer which means that instead of using the specific storage term to calculate the amount of water in storage, the program uses specific yield to calculate the amount of water in storage. The total area of unconfined coal aquifer was relatively small as compared to the portion of the aquifer that was dry or fully saturated. Due to the relatively small area of potential unconfined aquifer, no specific analyses were conducted to determine whether changes in the specific yield in the unconfined aquifer would affect model calibration.

Comment MuK 64 – Round 3

Response accepted.

Comment MuK 65 – Round 1

Mine Plan, Addendum MP-3 Groundwater Model, 65. In addition to model calibration, please provide justification for the recharge rates applied in the model including any literature references. (MK)

Response MuK 65 – Round 1

The initial recharge rates utilized in the model were initially estimated based on a USGS study (Water-Resources Investigations Report 01-4278) conducted on the eastern side of the Powder River basin and the Black Hills area. The study entitled, “Estimated Recharge to the Madison and Minnelusa Aquifers in the Black Hills Area, South Dakota and Wyoming, Water Years 1931-98.” was prepared by J.M. Carter and D.G. Driscoll. In the study Carter and Driscoll reported recharge rates varying from 0.04 inches per year to 2.93 inches per year. The 2.93 inch per year recharge rate was reported within the Madison limestone formation outcrops in the Black Hills while the lower range of recharge rates reported by Carter and Driscoll were estimated for areas in the eastern periphery of the Powder River Basin where the precipitation and soil types are similar in nature to the Brook Mine Permit area. Since calibrated recharge rates in the key recharge areas (the coal outcrops and the scoria outcrops) were within the range of values developed by Carter and Driscoll, the recharge rates used in the model are considered reasonable. Please note that the recharge rate throughout Layer 1 is much lower than the range of recharges developed by Carter and Driscoll. This is reasonable because much of Layer 1 has no hydrologic connection to the underlying coal seams. Additional justification for recharge rates applied in the model is discussed in response to comment BJ57.

Comment MuK 65 – Round 2

Response conditionally accepted. Please incorporate the context of the response into the permit application. (MK)

Response MuK 65 – Round 2

Addendum MP-3 Section 4.2.2 has been updated to incorporate the context of the Round 1 response.

Comment MuK 65 – Round 3

Response accepted.

Comment MuK 66 – Round 1

Mine Plan, Addendum MP-3 Groundwater Model, 66. Page Addendum MP-3-33 states, “Recharge is applied within the modeling software by applying the recharge to the highest active layer.” Please clarify the presence of any modeled ‘dry cells’ in the model and the influence of applying the recharge to the layers below the dry cells. (MK)

Response MuK 66 – Round 1

As noted in the responses for comments MuK 59 and MuK 60, Groundwater Vistas does not allow for discontinuous layers across the model domain. Along the north and the west sides of the model there is a good portion of the model domain where the upper layers have been eroded off and do not actually exist. These areas of erosion were accounted for using no flow cells. As shown on Figures 4.4-1 through 4.4-4 of Addendum MP-3, the no flow cells in the top layer are the largest in areal extent while each underlying layer has a slightly decreased areal extent of no flow cells. In this case the no flow cell distribution was adjusted to match the outcrop of each layer. The fact that the software applies the recharge to the highest active layer was taken advantage of during the modeling process, since it is an effective way to apply recharge to an outcropping layer which is under another layer that is eroded away but due to software limitations is still present in the model.

Because CBM operations have generally removed most of the water from the coal seams, there are some locations within the model domain where dry cells during the modeling have caused cells in layer 1 to go dry and the recharge is applied to the next active layer below. While this could be problematic if a high recharge rate were assigned to the model cells, generally throughout the model domain the recharge rate is very low. Therefore, this results in a very minor amount of water coming into the model and did not significantly affect the model calibration.

Comment MuK 66 – Round 2

Response conditionally accepted. Please incorporate the context of the response into the permit application. (MK)

Response MuK 66 – Round 2

Addendum MP-3 Section 4.2.2 has been updated to incorporate the context of this response.

Comment MuK 66 – Round 3

Response accepted.

Comment MuK 67 – Round 1

Mine Plan, Addendum MP-3 Groundwater Model, 67. Table 4.2-3. lists model porosity values. Typically, MODFLOW (flow model) does not use porosity in its calculations. Please clarify the need for this input parameter. (MK)

Response MuK 67 – Round 1

Modflow does not utilize porosity as part of its calculations. However, other modules included in the Groundwater Vistas package such as MODPATH do utilize porosity. In the case of this model, no MODPATH simulations were conducted. Therefore, the porosity term as put into the model has no impact on the calculations. However, porosity is a hydraulic parameter of the aquifer and may be important for future modeling simulations, therefore, the porosity values developed for each aquifer/aquitard unit will be left in the model report. Minor changes to the text in Addendum MP-3 have been made to clarify the role of porosity in this model.

Comment MuK 67 – Round 2

Response conditionally accepted. Please incorporate the context of the response into the permit application. (MK)

Response MuK 67 – Round 2

The context of the Round 1 response was incorporated into Addendum MP-3 Section 4.2.3 as part of the first round of comment responses.

Comment MuK 67 – Round 3

Response accepted.

Comment MuK 68 – Round 1

Mine Plan, Addendum MP-3 Groundwater Model, 68. The faults are not modeled in Layer 1. Please clarify the procedure for determining the vertical extents of the faults in the model. (MK)

Response MuK 68 – Round 1

The composition of Layer 1 is predominately claystone. Because Layer 1 is not composed of aquifer material and because the hanging and footwalls are composed of strata with similar hydraulic properties, displacement due to faulting does not substantially change the flow through the aquitard and placing Horizontal flow barriers in the model in layer 1 was not necessary.

Comment MuK 68 – Round 2

Response conditionally accepted. Please incorporate the context of the response into the permit application. (MK)

Response MuK 68 – Round 2

Addendum MP-3 Section 4.4.1 was updated to incorporate the context of the Round 1 response.

Comment MuK 68 – Round 3

Response accepted.

Comment MuK 69 – Round 1

Mine Plan, Addendum MP-3 Groundwater Model, 69. Please provide the input parameters used to model the horizontal flow barriers in the model and discuss their technical reasonableness. (MK)

Response MuK 69 – Round 1

Horizontal Flow Barriers were used in the model to simulate no-flow boundaries created by faulting within the project area. Horizontal flow barriers require two input parameters in Groundwater Vistas including wall thickness and hydraulic conductivity. The input parameter used in the model for wall thickness was 10 feet and a hydraulic conductivity of 1.0×10^{-5} ft/day was used. The horizontal flow barrier parameters as applied will essentially limit all but a very minor amount of flow across the barrier. As described in the response to comment MuK 51, the coal seams within the project area are relatively thin as compared to the fault offsets so it is reasonable to assume that the faults will significantly impede flow in the aquifer units.

Comment MuK 69 – Round 2

Response conditionally accepted. Please incorporate the context of the response into the permit application. (MK)

Response MuK 69 – Round 2

Addendum MP-3 Sections 4.4.2, 4.4.3, and 4.4.4 were updated to incorporate the context of the Round 1 response.

Comment MuK 69 – Round 3

Response accepted.

Comment MuK 70 – Round 1

Mine Plan, Addendum MP-3 Groundwater Model, 70. Page Addendum MP-3-40 states, “As the current, post-CBM potentiometric surface is considered the static level.....” Please provide the implications of this assumption, on the model calibration of hydraulic parameters and the model predicted hydrologic impacts (over estimation of drawdown vs. underestimation) (MK)

Response MuK 70 – Round 1

Addendum MP-3 Sections 4.8.1, 4.10, and 4.11 all discuss the implications of CBM impacts. In addition, the response to comment MuK 53 also discusses CBM impacts to water levels. As discussed in the response to comment MuK 53, the model conservatively assumed that CBM operations have lowered the water levels in the eastern portion of the model domain to a level near the top of the coal seams. To simulate this drawdown, the elevations of each general head boundary on the east side of the model were set at an elevation just above the top of the coal seam. The general head boundaries elevations remained the same in both the steady state and the transient models. Essentially, this means that the model operated under the assumption that the post CBM impacts were permanent prior to and after the Brook Mine mining activities.

The assumption that the water levels have been permanently impacted by CBM did have a significant impact on model calibration. The severely depressed water levels caused by CBM operations have resulted in a large number of cells going dry. The hydraulic parameters of the aquifer units within the eastern portion of the model domain were not adjusted to eliminate the dry cells since it is reasonable to assume that, with the severe drawdown modeled, the coal seams could have been dewatered in these areas. Therefore, even though the effects of the CBM drawdowns were observed during calibration, no specific adjustments were made to the modeled aquifer characteristics to eliminate these impacts. The dry cells did complicate calibration of the model because they cause instability in the MODFLOW model calculations and results.

The model was developed to take into account impacts from the combined effects of CBM and the proposed coal mining. In general, CBM development impacts are significantly larger than the predicted impacts from the Brook Mine. Therefore, ignoring CBM impacts would have significantly under predicted the potentiometric surfaces within the model domain and overestimated the impacts that Brook Mine would have on the system.

Many of the CBM wells are actively being plugged and abandoned. If this trend continues, there is a chance that recovery of water levels from CBM impacts may begin which will result in recharging of the coal seams. If this happens, it is anticipated that the model conservatively over predicts the impacts to the region especially in the long term recovery scenarios.

Comment MuK 70 – Round 2

Response conditionally accepted. Please incorporate the context of the response into the permit application. (MK)

Response MuK 70 – Round 2

Most of the discussion in the original comment has already been incorporated into Addendum MP-3 with the first round of comment responses. However, an additional concluding statement from this response was added to Addendum MP-3 Section 4.1.1 to incorporate the context of the Round 1 response into the permit application.

Comment MuK 70 – Round 3

Response accepted.

Comment MuK 71 – Round 1

Mine Plan, Addendum MP-3 Groundwater Model, 71. It is noted that Table 4.7-1 summarizes the calibration residuals and statistics from the calibrated model. Please consider providing additional presentations of the calibrated model statistics. This will enable an easier evaluation of any spatial bias in the model calibration. (MK)

- a. X-Y plot of observed vs. simulated water levels.
- b. A map plotting the residuals to show the spatial distribution
- c. Provide a summary statistics table with Mean Error, Mean Absolute Error, Sum of Squared residuals for the calibrated model. It is noted that some of these values are presented in the sensitivity analysis. However, a compiled summary statistics table would be very helpful.

Response MuK 71 – Round 1

As requested the following additions have been made to the groundwater model report:

- A. An X-Y plot of observed versus simulated water levels has been added in the report as Addendum MP-3 Figure 4.7-1.
- B. The residuals have been added to figures 4.7-2, 4.7-3, and 4.7-4 of Addendum MP-3.
- C. Table 4.7-1 of Addendum MP-3 has been updated to include additional statistics.

Comment MuK 71 – Round 2

No comment received.

Response MuK 71 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MuK 72 – Round 1

Mine Plan, Addendum MP-3 Groundwater Model, 72. In addition, to the measured water levels, please clarify if there were any flow measurements used for model calibration. (MK)

Response MuK 72 – Round 1

There are no areas within the model domain where it was possible to collect any flow measurements that would support the modeling effort therefore, no flow measurement were used in the calibration.

Comment MuK 72 – Round 2

Response conditionally accepted. Please incorporate the context of the response into the permit application. (MK)

Response MuK 72 – Round 2

Discussion was added Addendum MP-3 Section 2.6 to clarify that no measurements of seepage at the outcrop were available. Also, text has been added to Section 4.7.2 clarifying that there are no measurements available for water that may leave or enter the Tongue River from the coal seams.

Comment MuK 72 – Round 3

Response accepted.

Comment MuK 73 – Round 1

Mine Plan, Addendum MP-3 Groundwater Model, 73. Please provide a water budget table (in acre-feet per year or cubic-feet per day) showing all the inflows into the model and outflows from the model.

Response MuK 73 – Round 1

The following tables summarizes the inflows and outflows from the model domain during the steady state period, 5 years into mining, the end of mining, and at the end of recovery.

Mass Balance of Steady State Calibrated Model		
Source/Sink	Inflows (ft ³ /d)	Outflows (ft ³ /d)
General Heads	16,107	22,890
River	2,569	410
Drains	-	560

Recharge	5,168	-
Total	23,846	23,860

Mass Balance 5 years into Mining		
Source/Sink	Inflows (ft ³ /d)	Outflows (ft ³ /d)
Storage	12,496	11,431
General Heads	16,130	22,904
River	2,688	385
Drains	-	1,774
Recharge	5,434	-
Total	36,749	36,494

Mass Balance End of Mining		
Source/Sink	Inflows (ft ³ /d)	Outflows (ft ³ /d)
Storage	3,670	4,146
General Heads	16,135	22,902
River	2,705	365
Drains	-	532
Recharge	5,430	-
Total	27,941	27,945

Mass Balance End of Recovery		
Source/Sink	Inflows (ft ³ /d)	Outflows (ft ³ /d)
Storage	1,698	2183
General Heads	16,138	22,901
River	2,714	363

Drains	-	535
Recharge	5,427	-
Total	25,978	25,983

Comment MuK 73 – Round 2

Response conditionally accepted. Please incorporate the tables into the permit application. (MK)

Response MuK 73 – Round 2

Addendum MP-3 Section 4.10 has been updated to include the water budget. Specifically, Table 4.10-1 includes the mass balance throughout the mining simulations. A cross reference to the mass balance discussion in Addendum MP-3 Section 4.10 was also added to Addendum MP-3 Section 4.6 for clarity.

Comment MuK 73 – Round 3

Response accepted.

Comment MuK 74 – Round 1

Mine Plan, Addendum MP-3 Groundwater Model, 74. Please provide a comparison of model simulated inflows and outflows against conceptual estimates of inflows and outflows. This comparison will act as another verification/check for the technical adequacy of the groundwater model (Example model GHB flows vs. reasonable estimated conceptual flows). (MK)

Response MuK 74 – Round 1

Response to comment MuK 73 includes tables that show the inflows and outflows from the model during the steady state period, 5 years into mining, the end of mining, and at the end of recovery. The five main categories of inflows and outflows include 1) storage, 2) general head boundaries, 3) river boundaries, 4) drains, and 5) recharge. Following is discussion regarding model predicted inflows and outflows for each category:

- 1) Storage – During the steady state model there is no inflow or outflow from storage so storage is not included in the first mass balance table in prepare for comment MuK 73. The model predicts that during active mining more water will come out of storage than will go into storage. Conceptually this is reasonable since during mining, water from the coals would be draining into the mined out areas. There is a trend of water continuing to come out of storage even after mining ceases. Even though the volume of water coming out of storage is quite low, it is contrary to the conceptualization of the system to have

water leaving storage after mining because at this point water should be going back into storage. This phenomenon is attributed to the fact that many of the cells in the model go dry during mining because CBM operations have significantly dewatered the coals and there is not much water available in storage (see comment MuK 70). When the cells go dry, MODFLOW treats them as no flow areas and there can be a ripple effect that causes additional cells going dry. Since MODFLOW is not very efficient at rewetting dry cells when they should be resaturated, this ripple effect has caused permanent changes in the model. Over a long time the model would be expected to come to a steady state condition. The tables prepared in response to comment MuK 73 indicate that even at the end of recovery, the model is not yet at the new equilibrium that would eventually be reached with the additional dry cells.

- 2) General Head Boundaries – The amount of water going into and out of the model domain via the general head boundaries remains relatively consistent throughout the modeled operations. This is reasonable because the general head boundaries are a long distance from the mining area and would not be expected to be significantly impacted by mining. In addition, the total volume of outflows from the general head boundaries generally balances the inflows from other sources. This is conceptually correct.
- 3) River Boundaries – The conceptual inflow and outflow from the coals to the Tongue River are discussed in detail in comment MuK 56. Groundwater Vistas does apply the River Boundary cells to the bottom of the layer in which they are inserted. The Tongue River Boundary cells were inserted into the model up to the point where Goose Creek joins the Tongue River. At that location the top of the Carney coal is estimated to be approximately 100 feet below the surface. Since the alluvium is generally much thinner in this area and there is actually a large amount of low permeability strata between the Tongue River alluvium and the coal (described in comment MuK 56), the model likely overestimates the contribution of the River boundary cells to the model because the river boundary cells provide a direct connection (in the model) between the river and the coals where there is not a physical connection. This conservatively over estimates how much water discharges from the River Boundary Cells to the model.
- 4) Drains – One drain was placed into layer 1 in the northeast side of the model domain to allow water to drain from the model where the Tongue River crosses the domain boundary. This represents the amount of water in layer 1 lost to the surface water system. The total discharge from this drain during steady state conditions is 560 ft³/day (2.9 gpm). While no physical measurements were (or can be) made to verify this amount, conceptually it is reasonable. The strata along the Tongue River likely does discharge a small amount of water to the River where it cuts through the numerous perched sand lenses that become saturated from natural recharge. There is no evidence of large groundwater

discharges to the Tongue River in this area so it makes sense that a small discharge to the River (rather than a large discharge) would be observed in the model. During mining, drains were added to the model to remove water from the mine pits. The tables indicate that during mining the discharges from the drains do increase as expected. After mining is complete, discharges from the drains return approximately to premining levels which is conceptually correct.

- 5) The recharge amount used in the model stays at relatively the same level throughout the simulations. Total recharge across the model area is approximately 28 gpm. As is described in comment #65 the recharge rates are reasonable based on available studies.

Comment MuK 74 – Round 2

Response conditionally accepted. Please incorporate the context of the response into the permit application. In addition, clarify the reason for increased recharge from the steady state to transient models (5,138 vs 5,434 cu.ft/day).

Response MuK 74 – Round 2

Addendum MP-3 Section 4.10 was updated to include the context of the Round 1 response. The model was also reviewed to determine why there was a slight difference in the recharge rates during the steady state simulation and the transient simulation period (5,168 vs 5434 cu ft/day). During the review of the model it was found that one of the recharge options in the MODFLOW options dialogue box was incorrect. The check box in the dialogue box entitled “Apply recharge from stress period 1 to all stress periods” had not been checked. After checking the option, the model was rerun and during the subsequent run the recharge was the same during the steady state portion and the transient portion of the model. Other minor changes in the mass balance numbers presented in Table 4.10-1 were also noted and the numbers were updated to reflect the model predicted values after changing the recharge settings.

Comment MuK 74 – Round 3

Response not accepted. Please provide the revised model files for the LQD review and records.

Response MuK 74 – Round 3

New Groundwater Vistas files configured to run in Groundwater Vistas Version 6.80 Build 1 are provided on a DVD with this submittal. Please see response to Comment 32 for details.

Comment MuK 75 – Round 1

Mine Plan, Addendum MP-3 Groundwater Model, 75. Page Addendum MP-3-40 states, “Due to a system of thin aquifers with similar sources and sinks and homogeneous hydraulic conductivities, the head values of the steady-state model were nearly

identical between the separate coal layers as noted in Table 4.7-1.” Please clarify whether this statement implies that the interburden (where present) between the coal seams is not a confining unit. (MK)

Response MuK 75 – Round 1

This statement is an observation only based on review of modeled values and does not suggest a lack of confinement exists. Pumping tests conducted in separate aquifers demonstrated that the interburden provides confinement between the Carney and Masters aquifers as described in Section D6-8.3.2.3 of Appendix D6. In addition, Table 4.7-1 of Addendum MP-3 shows that at each cluster where both coal seams contained measureable water, the difference in measured water levels between the coal seams was higher than the modeled difference. This suggests that the vertical hydraulic conductivity assigned to the interburden in the model may be higher than the actual hydraulic conductivity of the interburden in the field. The use of a higher hydraulic conductivity for the interburden in the model will overestimate the drawdown in the other coal seam therefore, the predicted drawdown will be conservative.

Comment MuK 75 – Round 2

Response conditionally accepted. Please incorporate the context of the response into the permit application. (MK)

Response MuK 75 – Round 2

The last sentence in the first paragraph of Addendum MP-3 Section 4.7.2 has been revised for clarification. The Round 1 responses have been incorporated into Addendum MP-3.

Comment MuK 75 – Round 3

Response accepted.

Comment MuK 76 – Round 1

Mine Plan, Addendum MP-3 Groundwater Model, 76. In figures 4.7-1, 4.7-2 and 4.7-3, please consider including the observed/interpreted water level contours and the measured water level elevations. This will enable to visually evaluate the observed vs. simulated water levels. (MK)

Response MuK 76 – Round 1

Figures 4.7-1, 4.7-2, and 4.7-3 of Addendum MP-3 have been updated to include both observation wells and observed elevations as well as observed potentiometric contours. Please note that in response to Comment MuK 71 an additional figure was added to this section (Figure 4.7-1) and these figures have since been renumbered to 4.7-2, 4.7-3, and 4.7-4.

Comment MuK 76 – Round 2

Response conditionally accepted. Please incorporate the context of the response into the permit application. (MK)

Response MuK 76 – Round 2

The figures previously added to the report (4.7-2, 4.7-3, and 4.7-4) during the first round of comment responses incorporate the context of the Round 1 response into Addendum MP-3.

Comment MuK 76 – Round 3

Response accepted.

Comment MuK 77 – Round 1

Mine Plan, Addendum MP-3 Groundwater Model, 77. Page Addendum MP-3-45 states, “.....and if CBM production ceases, recovery rates will likely be higher than estimated in the model.” Please clarify if this statement implies that currently, there are CBM wells that are operational in the area and are pumping out groundwater. (MK)

Response MuK 77 – Round 1

Although substantially less than past years, some CBM wells in the area are still producing groundwater. Since CBM production has been ongoing for the last 15+ years the CBM operations have significantly lowered the water levels in the coals as is noted in the report. Records of groundwater withdrawals can be found on the Wyoming Oil and Gas Conservation Commission’s (WOGCC) online database at: wogcc.state.wy.us. According to WOGCC records there has been no groundwater production associated with CBM in Townships 57 and 58N Range 84W since 2012. However production is still occurring in Townships 57 and 58N Range 83W as well as Township 56N Range 83 and 84W. The portions of the model domain where CBM production may occur are located in Townships 56 and 57N Range 84W.

Comment MuK 77 – Round 2

Response conditionally accepted. Please incorporate the context of the response into the permit application. (MK)

Response MuK 77 – Round 2

Additional text was added to Addendum MP-3 Section 2.3 to describe the timeframe over which CBM wells have been in operation. Also Addendum MP-3 Section 4.8.1 was updated to further capture the context of the Round 1 response.

Comment MuK 77 – Round 3

Response accepted.

Comment MuK 78 – Round 1

Mine Plan, Addendum MP-3 Groundwater Model, 78. Please consider removing the model sensitivity to storage coefficients and porosity. Steady state groundwater model equations do not include these parameters in any of the model calculations. (MK)

Response MuK 78 – Round 1

As noted in this comment, the final model did not include a transient calibration and a sensitivity analysis on storage coefficient and porosity is not appropriate. The section and discussion regarding model sensitivity to the storage coefficient and porosity has been updated and removed as appropriate.

Comment MuK 78 – Round 2

Response conditionally accepted. Please incorporate the context of the response into the permit application. (MK)

Response MuK 78 – Round 2

Addendum MP-3 Section 4.8.5 (last two sentences) was previously updated during the first round of comment responses to incorporate the context of the Round 1 response.

Comment MuK 78 – Round 3

Response accepted.

Comment MuK 79 – Round 1

Mine Plan, Addendum MP-3 Groundwater Model, 79. Please clarify if the faults in the model and their parameters were considered in any of the sensitivity analyses. If not, please consider performing a detailed and thorough sensitivity analysis, as the faults appear to influence the drawdowns simulated by the groundwater model. (MK)

Response MuK 79 – Round 1

The faults do influence the drawdowns and flow patterns simulated in the groundwater model. However, as noted in the response to comment MuK 51 the displacement observed in the faults roughly 5 times as thick as the modeled coal seams. Given the fact that the dominant lithology in the area is low permeability claystone/siltstone, it is very likely that where faulting has occurred the displacement has resulted in coals being immediately adjacent to the low permeability strata. Therefore the faults are assumed to be hydrologic barriers to water flow. Based on the best available mapping, these faults have been placed into the model. Because the faults are physical parameters that were developed along with development of the geological model (i.e. elevations and thicknesses of the geological layers), a sensitivity analysis was not performed on the faults.

Part of the reason that the faults influence the groundwater responses in the groundwater model to the degree that they do is because of the CBM impacts. Because the CBM operations have significantly lowered the water levels in the coal seams, the faults create a shadow effect that results in many of the cells immediately downstream of the faults going dry. If there had not been any CBM dewatering operations performed in the coals, the water levels would be significantly higher and the effects of the faults would not be as pronounced.

Comment MuK 79 – Round 2

Response conditionally accepted. Please incorporate the context of the response into the permit application. (MK)

Response MuK 79 – Round 2

The context of the Round 1 response has been added to Addendum MP-3 Section 2.4.1.

Comment MuK 79 – Round 3

Response accepted.

Comment MuK 80 – Round 1

Mine Plan, Addendum MP-3 Groundwater Model, 80. In addition to the simulated drawdown maps, please consider providing hydrographs at strategically selected locations. This will enable a better presentation of the impacts over time. (MK)

Response MuK 80 – Round 1

As suggested, Appendix A has been added to Addendum MP-3 which depicts the modeled water elevations during the model simulation period at all the water supply wells identified within the model domain (CBM wells excepted) and at selected alluvial target locations within the model domain.

Comment MuK 80 – Round 2

Response not accepted. Appendix A is missing with the electronic files provided to the Cheyenne Office. The hydrographs will be reviewed after the receipt of this Appendix A. (MK)

Response MuK 80 – Round 2

All the appendices for Addendum MP-3 for the first round of comment responses were inadvertently left out of the submittal. Both Appendix A and B are included in this round of comment responses.

Comment MuK 80 – Round 3

Response accepted.

Comment MuK 81 – Round 1

Mine Plan, Addendum MP-3 Groundwater Model, 81. Please clarify if the three wells listed in Table 4.9-1 are the only wells considered for the analysis. Also, provide a discussion on the methodology to narrow down the analysis from several wells shown in the groundwater rights maps to these three wells. (MK)

Response MuK 81 – Round 1

Additional wells beyond those originally presented in Table 4.9-1 were considered in the analysis. Table 4.9-1 has been updated to include all the wells considered in the analysis. To determine which wells were included in the analysis, completions were compared to modeled surfaces to estimate which formation in which the well was completed. Those thought to be completed in the Carney/Masters sequence were included. Please note that the wells included in Table 4.9-1 error on the side of being over inclusive. Some of the wells are believed to be completed in multiple zones but the analysis assumes that they are only completed in the coal seams of interest. In addition, the well depths were determined based on the State Engineer's database and in many cases well depth data was left blank or was questionable. If there was a question whether a well was actually completed in the coal aquifer of interest the well was assumed to be completed in the coal. Therefore, the well list may include some wells that are not completed in the coals of concern.

Comment MuK 81 – Round 2

Response conditionally accepted. Please incorporate the context of the response into the permit application. (MK)

Response MuK 81 – Round 2

The context of the Round 1 response was added to Addendum MP-3 Section 4.9 during the first round of comment responses. In addition to updating Table 4.9-1, the text was also updated with verbiage from the round 1 comment response to describe how the wells were chosen for inclusion into the model.

Comment MuK 81 – Round 3

Response accepted.

Comment MuK 82 – Round 1

Mine Plan, Addendum MP-3 Groundwater Model, 82. Please provide (or reference) a discussion about the three wells listed in Table 4.9-1, their depths, screened intervals and other pertinent information. (MK).

Response MuK 82 – Round 1

Table 4.9-1 has been updated to include total depth as well as the screen intervals for all the wells. Additional details on the wells can be found in Adjudication Appendix B.

Comment MuK 82 – Round 2

Response conditionally accepted. Please incorporate the context of the response into the permit application. (MK)

Response MuK 82 – Round 2

Addendum MP-3 Table 4.9-1 was previously updated as noted in the round 1 comment responses. Between the updated text in response to comments and this table, the context of this comment response have been captured in Addendum MP-3.

Comment MuK 82 – Round 3

Response accepted.

Comment MuK 83 – Round 1

Mine Plan, Addendum MP-3 Groundwater Model, 83. Page Addendum MP-3-60 states, “ To measure the impacts to the Tongue River and Goose Creek, a series of targets were placed along these drainages in Layer 1” Please define the term target. Also, clarify if these targets are located in the alluvial aquifer. (MK)

Response MuK 83 – Round 1

The targets as used in Groundwater Vistas are simply locations where heads are measured and compared with measured heads (if there are any available). Ground Water Vistas generates a hydrograph throughout the transient period of mining and recovery for each target. These targets were placed in Layer 1 to estimate the impacts of mining to surface water bodies. These targets are located where the alluvial aquifer is simulated in Layer 1. Targets representing existing well locations were also put in layers 4 and 6 as well as discussed in Comment MuK 81.

Comment MuK 83 – Round 2

Response conditionally accepted. Please incorporate the context of the response into the permit application. (MK)

Response MuK 83 – Round 2

Additional text was added to Addendum MP-3 Section 4.9 to define what a target is. Also, the inclusion of Appendix A has been included with this round of comment responses, which was inadvertently left out of the first round of comments. The appendix should also help incorporate the context of the Round 1 response.

Comment MuK 83 – Round 3

Response accepted.

Comment MuK 84 – Round 1

Mine Plan, Addendum MP-3 Groundwater Model, 84. Page Addendum MP-3-60 states, “These targets demonstrate that the estimated maximum impact to Tongue River Alluvium is conservatively estimated to reach 2.5 feet drawdown near the river.” Please expand the discussion on the impacts to surface water flows including translating the drawdown to an estimated decrease in the groundwater baseflows to Tongue River and Goose Creek. (MK)

Response MuK 84 – Round 1

As shown on the hydrographs included in Appendix A, the maximum water level decline of 2.5 feet to the Tongue River alluvium occurred permanently and was caused by dry cells. This 2.5 foot drawdown is not believed to be a real drawdown because it resulted from model instability rather than a real predicted result. If the model did not have dry cells that caused permanent changes in the model, the maximum drawdown due to mining is estimated to be less than 0.5 feet.

As noted in the response to comment MuK 56, the model estimates the coals will contribute a relatively insignificant amount to water to the base flow of the Tongue River. As noted in Comment MuK 73 in the steady state model the River contributed approximately 2,569 cubic feet per day to the model while the river received 410 cubic feet per from the model. The net result is that in the steady state model 2,159 cubic feet per day (11.2 gpm) was contributed from the river to the model. For comparison, at the end of mining, the River contributed 2,714 cubic feet per day to the model and received 363 cubic feet per day from the model. The net result at the end of mining was that 2,351 cubic feet per day (12.2 gpm) was contributed from the River to the model. Over the simulated mining period the model estimates that the increased contribution of flow from the River to the model will be 1 gpm which represents approximately a 9% increase in flow.

Please note that in Groundwater Vistas the river boundary cells go to the bottom of the layer which likely overestimates the impacts to the River. Within the eastern portion of the model domain the coal aquifers can be 200 or more feet below the level of the river while the Tongue River Alluvium is estimated to be between 15 and 30 feet thick based on the thickness of alluvial wells constructed by Big Horn Coal in the area. Therefore, within the eastern portion of the model domain, the coals may be significantly below the alluvium and no River boundary was included in this portion of the model. However, there is an intermediary region where the actual level of the River is some 30-70 feet higher than the coals. At these locations the River boundary cells were left on to conservatively show the impacts to the river. However, the alluvium in these areas is likely thinner than 40-70 feet. As a result, the model allows the River to

directly contribute water to the coals below and the model is expected to overestimate the impacts to the Tongue River in these locations.

Comment MuK 84 – Round 2

Response conditionally accepted. Please incorporate the context of the response into the permit application. The comment will be reviewed after the receipt of Appendix A. (MK)

Response MuK 84 – Round 2

Additional text was added to Addendum MP-3 Sections 2.6.3 and 4.9 to incorporate the context of the Round 1 response. Also, text was added to Section 4.10 in response to Comment MuK 73 which helps capture the context of the Round 1 response.

Comment MuK 84 – Round 3

Response accepted.

Comment MuK 85 – Round 1

Mine Plan, Addendum MP-3 Groundwater Model, 85. Please provide a statement on any hydrologic impacts predicted by the groundwater model to areas outside the Brook mine permit boundary. (MK)

Response MuK 85 – Round 1

The only impacts outside of the Brook Mine Permit Boundary would be observed at the existing water supply wells. Table 4.9-1 describes the estimated impacts at all the water supply wells in the Model domain that will be impacted both inside and outside of the Brook Mine Permit Boundary. Please note that most of these wells are located outside of the Brook Mine permit boundary. As shown on Table 4.9-1 the largest model predicted impact seen at any existing well outside of the Brook Mine Permit boundary is 20 feet which would be observed at P48251W. As shown in the hydrograph for this well in Addendum MP-3 Appendix A, this impact is estimated to be short lived (approximately 4 years). Model predicted drawdowns at the rest of the wells are less than 5 feet. At many of the wells predicted drawdowns are less than 1 foot over the life of the mine.

Comment MuK 85 – Round 2

Response conditionally accepted. Please incorporate the context of the response into the permit application. The comment will be reviewed after the receipt of Appendix A. (MK)

Response MuK 85 – Round 2

Additional text to capture the context of the Round 1 response has been added to Addendum MP-3 Section 4.11.

Comment MuK 85 – Round 3

Response accepted.

Comment MuK 86 – Round 1

Mine Plan, Addendum MP-3 Groundwater Model, 86. Please provide a discussion on the simulated impacts caused by mining to surface water – groundwater interaction within the model domain. (MK)

Response MuK 86 – Round 1

Please see the response to comment MuK 84.

Comment MuK 86 – Round 2

Response conditionally accepted. Please incorporate the context of the response into the permit application. The comment will be reviewed after the receipt of Appendix A. (MK)

Response MuK 86 – Round 2

Additional text has been added to Addendum MP-3 to incorporate the context of the Round 1 response (also see response to MuK 84).

Comment MuK 86 – Round 3

Response accepted.

Comment MuK 87 – Round 1

Mine Plan, Addendum MP-3 Groundwater Model, 87. Please compare the model simulated water balance between pre-mining, during mining and post mining conditions. Consider including a table that presents the water balance during select periods showing the flows from all sources and discharges to all the sinks within the model domain. Provide a detailed discussion addressing any changes in the model simulated water balance between pre-mining, during mining and post mining conditions. (MK)

Response MuK 87 – Round 1

Please see responses to comments MuK 73 and MuK 74. A detailed discussion is included in the responses to these comments.

Comment MuK 87 – Round 2

Response accepted. (MK)

Response MuK 87 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MuK 88 – Round 1

Mine Plan, Addendum MP-3 Groundwater Model, 88. In addition to the maps presented on the recovery estimates, please provide hydrographs at strategically selected locations. This will enable a better presentation of recovery over time. (MK)

Response MuK 88 – Round 1

As described in response to Comment MuK 80, an appendix (Appendix A) has been added to Addendum MP-3 which depicts the modeled water elevations at a number of well and target locations within the model domain.

Comment MuK 88 – Round 2

Response not accepted. Appendix A is missing with the electronic files provided to the Cheyenne Office. The hydrographs will be reviewed after the receipt of this Appendix A. (MK)

Response MuK 88 – Round 2

Appendix A will be included with this second round of comment responses.

Comment MuK 88 – Round 3

Response accepted.

Comment MuK 89 – Round 1

Mine Plan, Addendum MP-3 Groundwater Model, 89. The modeling documentation lacks discussion on the backfill aquifer. In the recovery model, please clarify how the model treats the backfill aquifer (spoils aquifer) and its resaturation. Please provide a discussion (or reference) to the hydraulic properties of the backfill materials used to create the backfill aquifer and the aerial extent of the backfill aquifer. (MK)

Response MuK 89 – Round 1

Mine Plan Section 4.10 discusses the backfill aquifer. Within the areas where the highwall miner is used for mining, an open cavern will be left behind. Unless the mined out areas collapse, the backfill aquifer is essentially an open cavern with 100% porosity. The modeling software used for this effort does not have the ability to transiently change aquifer properties, and during resaturation of the mined areas the assigned storage coefficients remained the same as the original aquifer properties. As a result, the model may underestimate the time that it takes for the aquifer to resaturate where the mining methods have increased the porosity and thereby resaturation volume. Inversely, in the slots mined with traditional open cut mining

techniques, coal will be removed and replaced with overburden material. In these locations the backfilled material is expected to have poor aquifer characteristics because it will primarily be a mix of fine grained clay and silt with some sand. In these areas the aquifer will essentially be removed. Again, the modeling software does not have the ability to transiently change aquifer properties and this effect was ignored during the modeling.

Figure MP-3-4.9-1 shows the areal extent of mining and Addendum MP-3 Figures 4.7-2, 4.7-3, and 4.7-4 depict the areas that were modeled as dry within the Brook Mine permit area. It is important to note that a large percentage of the area that will be mined is dry prior to the initiation of mining. In addition, figures in MP-3 Section 4 show that after mining, some of the areas go dry and do not rewet. In the areas where slots are excavated this prediction is reasonable because the backfill will act as an aquitard with poor aquifer characteristics. A layer by layer review of the mined area at the end of mining was conducted to determine conceptually how ignoring the changes in the coal porosity and changes in backfill material may have impacted the model predictions.

Upper Carney-With exception of a very small portion of mine block 9 (Figure MP-3-4.9-1). The entire Upper Carney coal is unsaturated. Therefore, there is no resaturation and no recovery. The model estimates are appropriate for the Upper Carney coal.

Lower Carney - Most of the mine blocks as well as the open slots are dry in the Lower Carney at the end of mining. Only mine blocks 1, 2, 5, 9, and 10 had substantial portions that were saturated. As a result, the potential error created by transient aquifer properties in model predicted resaturation rates to the underground mined coal blocks in the Lower Carney coal, if any, is expected to be very low. With the exception of the slots cut to mine blocks 5, 9, and 10, all of the slots cut to mine the Carney Coal will also be dry; therefore, resaturation at those locations will not substantially impact model predictions. The slots cut for blocks 9 and 10 generally run parallel to the direction of water flow. If the coal in these locations is completely removed and replaced with an aquitard, the impact to the aquifer will be minimal because water will simply flow around the portion of the backfilled aquifer. The open pit slot cut adjacent to mine block 5 does run perpendicular to the direction that water is flowing and may change the groundwater flow patterns in this area. However, the location of the slot is near the groundwater divide caused by the fault just to the south. Therefore, this slot is not expected to substantially impact groundwater flows either

Masters - Most of the Masters Coal mine blocks are saturated. Only blocks, 4, 5, 6, and 7 have substantial areas that are not saturated. In the mine blocks where underground mining techniques are employed the model may underestimate the time it takes for resaturation to occur because the storage coefficient is not updated to account for the increased porosity of the mined out block. However this resaturation time will be balanced out by the fact that there will be no aquifer replaced in the open cuts to resaturate, and thus these areas would not resaturate as the model predicts.

With the exception of the open cut for mine block 5, all of the open cuts are oriented so that they will have minimal impacts on the natural flow gradients in the wellfield or are located within or adjacent to dry areas. As previously noted, the open cut near mine block 5 is located adjacent the drainage divide so it will not significantly change the water flow within the aquifer.

Due to the fact that much of the mined area is dry, the actual area mined that is below the water table is relatively small, and that the open cuts are oriented such that they have minimal impacts to groundwater flow, the recovery analysis performed by the model is reasonable. Also, as noted, the areas where underground mining is employed and the model overestimates the rate at which the aquifer is resaturated are counterbalanced by the areas of open cuts where the aquifer will not be replaced and the model underestimates the time it takes for the strata to resaturate.

Comment MuK 89 – Round 2

Response conditionally accepted. Please incorporate the context of the response into the permit application. (MK)

Response MuK 89 – Round 2

Text from this comment response was added to Addendum MP-3 Section 4.10 to capture the context of the Round 1 response.

Comment MuK 89 – Round 3

Response accepted.

Comment MuK 90 – Round 1

Mine Plan, Addendum MP-6 Subsidence Control Plan, 90. Figure MP6.1-1 shows “Monarch Seam Surface Only Mining”. Please clarify if the Monarch seam is targeted for mining in the appropriate sections of Appendix D5, Appendix D6 and mine plan. (MK)

Response MuK 90 – Round 1

The appropriate sections of Appendix D5 and D6 have been updated.

Comment MuK 90 – Round 2

No comment received.

Response MuK 90 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MuK 98 – Round 3 verbal comment via phone call with WWC 12-2-15

Please provide additional clarification describing why the model predicted discharge from the Tongue River to the underlying layers using the River Cells is conservatively over estimated.

Response MuK 98 – Round 3 verbal comment via phone call with WWC 12-2-15

The text in Addendum MP-3 Section 4.7.2 (Page 50) has been updated to further clarify that the model predicted discharge from the Tongue River to the underlying layers is conservatively high. Please also see Addendum MP-3 Section 2.6.3 (pg 29) for additional discussion on the contribution of water from the Tongue River to the groundwater system.

Reclamation Plan

Comment BJ 57 – Round 1

Volume 12, Reclamation Plan, Section RP.8.3, Pg. RP-37, The narrative describes the sources of recharge to the coal seams. One lithology mentioned as a positive recharge contributor is the overlying burn, scoria, or clinker material, generated by coal fires. It is a common misunderstanding that the scoriaceous material recharges coal or overburden. It would appear, at first glance, that the broken, vuggy material would be capable of conveying large amounts of water from the surface to materials beneath. That is not the case, however, as the coal/scoria interface has a zone of partially metamorphosed coal ash that lies between the burned material and the remnant coal. I have seen this zone many times during my 25 year career in the coal mines when supervising coal and overburden removal. This zone is characterized by a white to light gray, clay band that ranges in thickness from 6 inches to a foot or more. It is the same high silica ash found in the bottom ash of the local power plants that burn PRB coal. This ash band acts as an aquaclude, preventing water from entering or escaping the coal. Because of this, any recharge models that were run using the scoria as a recharge source must be reevaluated using new layers that do not include the scoria. Rerun recharge models if needed.

Response BJ 57 – Round 1

It is true that the partially metamorphosed coal ash layer between the coal and the scoria has the potential to limit recharge from the scoria to the coal. However, even though the permeability of this layer is low, there will be areas where the coal has collapsed or other geologic variances such as a thinning section which will allow for water from the scoria to come into contact with the coal. Therefore, even though the scoria may not be directly in contact with the coal, there is still a recharge component to the scoria, albeit; significantly lower than if the scoria and coal were in direct contact. This low recharge rate is reflected in the groundwater model. The calibrated recharge rate used in the groundwater model for the areas covered by scoria was 0.35

inches per year. For comparison purposes, the recharge rates assigned to the Carney and Masters outcrops, where no scoria was present, varied from 0.2 to 0.88 inches per year. Considering that in the scoria areas a very large percentage of direct precipitation is expected to infiltrate into the scoria, the 0.35 inch per year recharge rate represents a significant reduction in the amount of water available (which could be upwards of 10 inches per year) to infiltrate into the coal seams. Therefore, the calibrated recharge rate included in the groundwater model does take into account the low permeability layer between the coal and the scoria.

Comment BJ 57 – Round 2

No comment received.

Response BJ 57 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment BJ 58 – Round 1

Volume 12, Reclamation Plan, Section RP.8.3, Pg. RP-39, The second sentence in the first paragraph has an odd, difficult to understand syntax. Please rewrite the sentence for clarity.

Response BJ 58 – Round 1

Revised page RP-39 text as requested. The sentence will now read “The mine will consult with WDEQ/LQD to determine the number of spoil wells that will be tested”.

Comment BJ 58 – Round 2

No comment received.

Response BJ 58 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment BJ 65 – Round 1

EXHIBITS, Reclamation Plan, Exhibit RP.6-1, The permit boundary on this map is inaccurate. Please recreate the permit boundary layer.

Response BJ 65 – Round 1

Revised Exhibit RP. 6-1 as requested.

Comment BJ 65 – Round 2

No comment received.

Response BJ 65 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment BJ 66 – Round 1

EXHIBITS, Reclamation Plan, Exhibit RP.8-3 and Exhibit RP.8-4, The post mining potentiometric surfaces for the Carney and Masters beds are suspended in mid-air over Slater Creek. Please terminate the contour lines at the outcrop or use a dotted line to indicate the calculated potentiometric surface.

Response BJ 66 – Round 1

Revised Exhibit RP.8-3 and RP.8-4 as requested.

Comment BJ 66 – Round 2

No comment received.

Response BJ 66 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment DS 24 – Round 1

Reclamation Plan, Section RP.4. This brief section discusses what is considered spoil material to be removed during mining. The section states that spoil does not include coal, but there are some very narrow coal seams with numerous stringers of clay or of such low quality that will probably not be mined and will be placed in backfill. Also, the top layers of most coal seams are quite “dirty” and would also be removed and backfilled. In order to provide the readers with a more accurate description of the mining and reclamation processes, please revise the text to show that some coal-laden materials will also be considered spoils and will be backfilled during reclamation.

Response DS 24 – Round 1

Revised text as requested.

Comment DS 24 – Round 2

No comment received.

Response DS 24 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment DS 25 – Round 1

Reclamation Plan, Section RP.5.2. Please provide a description of the methods used to control topsoil depth during replacement. Most mining operations use stakes with surveyed marks as guides for controlling soil application depths.

Response DS 25 – Round 1

See Section RP.5.4 for a description of the methods used to control topsoil depth during replacement.

Comment DS 25 – Round 2

No comment received.

Response DS 25 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment DS 26 – Round 1

Reclamation Plan, Section RP.5.4. Variability in topsoil depth cannot be avoided due to limitations imposed by the equipment used and the pre-application preparations which may include ripping of the compacted overburden surface. Typically, the depth of topsoil application may vary 25%, but the average depth should be closely monitored and should not exceed the average availability. Also, because some soils exhibit unsuitable characteristics and will not be used for reclamation, discussion of the use of substitute topsoil materials is warranted in this section.

Response DS 26 – Round 1

Revised text as requested. Added discussion about substitute topsoil being an option if not enough suitable topsoil is salvaged.

Comment DS 26 – Round 2

No comment received.

Response DS 26 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment DS 27 – Round 1

Reclamation Plan, Section RP.5.6. Sediment control measures will be required to prevent untreated runoff from exiting reclaimed lands onto adjacent native lands. Please provide a discussion of the sediment control measures to be used.

Response DS 27 – Round 1

Revised text as requested.

Comment DS 27 – Round 2

Response is not adequate. Use of ASCMs during mining and following reclamation as sediment control must follow the requirements of Guideline 15. Brook Mine must provide some detail about how the ASCMs will be sized, certified, permitted and terminated. ASCMs may not be used within ½ mile of the Tongue River. Please provide requested information in the Mine Plan.

Response DS 27 – Round 2

In response to Comment MK 116 (Round 2), ASCMs have been removed as the primary form of sediment control within half of a mile of the Tongue River and Goose Creek. In the place of ASCMs within the half-mile buffer, sediment impoundments have been designed. These designs are now provided in Addendum MP-2. Design standards for ASCMs, inspection and maintenance standards for ASCMs, and ASCM removal and site reclamation standards are provided in Addendum MP-1.

Comment DS 27 – Round 3

Response is not adequate. The text in Section 5.6 is not adequate. ASCMs or sediment reservoirs/sumps must be used to control sedimentation from disturbed/reclaimed lands onto adjacent native lands until Phase 2 Bond Release Verification has been approved. The text must be changed to clearly show the types of sediment control that will be used until Phase 2 Bond Release Verification has been approved.

Response DS 27 – Round 3

The text has been revised in Section RP.5.6 to state that sediment measures will be in place until sediment control release has been obtained.

Comment DS 28 – Round 1

Reclamation Plan, Section RP.8.2. This section states only that impoundments will require Landowner, LQD and SEO approval. Prior to construction of post mining impoundments, SEO approved plans for the impoundments must be submitted for inclusion in the permit Reclamation Plan. Please include a statement that a Reclamation Plan revision will be approved by the LQD prior to construction of impoundments.

Response DS 28 – Round 1

Revised Section RP.8.2 to include a statement regarding LQD approval before the construction of postmine impoundments.

Comment DS 28 – Round 2

No comment received.

Response DS 28 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment DS 29 – Round 1

Reclamation Plan, Section RP.11.1. The primary final land use for the permitted acreage will be grazing and wildlife. Only areas where the current use is industrial will remain industrial land uses after mining is completed. Therefore, in order for any constructed buildings or railroad access to remain following mining, and a permit revision to change the land use will be required. It is not just a matter of demonstrating usefulness to the LQD and receiving landowner consent. This will be a major revision to the permit that will require public notice. Clarification should be provided concerning the steps involved to allow building to remain.

Response DS 29 – Round 1

Revised text as requested. Eliminated discussion in Section RP.11 regarding leaving any buildings, facilities, and equipment following completion of mining.

Comment DS 29 – Round 2

No comment received.

Response DS 29 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment DS 30 – Round 1

Reclamation Plan, All Mine Plan Maps with progressions must show the actual years of the initial disturbance or mining activity, or the progression must be linked to a specific year in Reclamation Plan text. The maps must also include the contour interval.

Response DS 30 – Round 1

See Mine Plan MP.1.6 for a description of permit terms and initial year. Revised text in Reclamation Plan Section RP.13 to reference Mine Plane MP.1.6. Revised Exhibit RP.5-1 adding “Note: Year 3 corresponds to the year 2019” in Legend.

Comment DS 30 – Round 2

No comment received.

Response DS 30 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment DS 33 – Round 2 (New Comment)

New Comment: Reevaluate the average topsoil replacement depth based on salvage depth estimates shown in Appendix D7 and expected disturbance of each soil series during mining. 18 inches may not be adequate.

Response DS 33 – Round 2 (New Comment)

The topsoil depth has been revised in the first paragraph of Section RP.5.4.

Comment DS 33 – Round 3

No comment received.

Response DS 33 – Round 3

Round 2 response assumed to be adequate. No response is necessary.

Comment DE 19 – Round 1

Reclamation Plan, Section RP.5.1, page RP-6 – RAMACO states that the contoured surface will be scarified or ripped, if necessary. The mine should commit to scarifying or ripping all surfaces prior to topsoil replacement.

Response DE 19 – Round 1

Revised text as requested. Remove “if necessary” from sentence.

Comment DE 19 – Round 2

No comment received.

Response DE 19 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment DE 20 – Round 1

Reclamation Plan, Section RP.5.6, page RP-8 - The 1st sentence of the 2nd paragraph doesn't make sense. Please correct.

Response DE 20 – Round 1

Revised text as requested. The sentence now reads “Rills and gullies occurring in redistributed soil precluding the achievement of the approved postmining land use or the reestablishment of vegetative cover will be rectified”.

Comment DE 20 – Round 2

No comment received.

Response DE 20 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment DE 21 – Round 2 (New Comment)

There still has been no Reclamation Bond Estimate submitted at this time so there is nothing to review.

Response DE 20 – Round 2 (New Comment)

Reclamation Bond calculations are pending.

Comment DE 21 – Round 3

The applicant still has not submitted any reclamation bond but Western Water has scheduled a meeting to discuss the bond for November 5, 2015. I cannot recommend approval of this permit application until an adequate reclamation bond has been submitted.

Response DE 20 – Round 3

A reclamation bond estimate has been provided as part of the Round 3 response package.

Comment JJ 5 – Round 1

Reclamation Plan, 5. Exhibit RP 6-1 also displays permit boundary discrepancies in regards to the section lines on it and those located on the Adjudication Exhibit 1. Please update accordingly.

Response JJ 5 – Round 1

See response to comment BJ 65. Revised Exhibit RP.6-1 as requested.

Comment JJ 5 – Round 2

No comment received.

Response JJ 5 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment JJ 6 – Round 1

Reclamation Plan, 6. Table RP 6-1 states that there are 11.6 acres of wetlands and other aquatic resources. Please discuss where these acres are to be reclaimed and show them on the Exhibit RP. 6-1 which displays the reclaimed vegetation communities and their locations.

Response JJ 6 – Round 1

Revised Section RP.9 to include reference to Exhibit RP.6-1 for location of reclaimed wetlands and OAR. Revised Exhibit RP.6-1 to include reclaimed wetlands and OAR locations.

Comment JJ 6 – Round 2

No comment received.

Response JJ 6 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 24 – Round 1

Reclamation Plan, Section RP.10 Reestablishment of Essential Hydrologic Functions and Agricultural Utility on Alluvial Valley Floors, Assuming the Tongue River is an AVF, this section should discuss how the essential hydrologic functions will be maintained and/or reestablished, as required by LQD Coal Rules and Regulations, Chapter 5, Section 3(c)(ii). As noted in Comment No. 21, the essential hydrologic functions of the Tongue River AVF need to be identified and a monitoring system needs to be installed. (MDK)

Response MK 24 – Round 1

Revised text as requested in Section RP.10.

Comment MK 24 – Round 2

Response not accepted. Please provide a more thorough discussion for each identified essential hydrologic function to demonstrate that the functions will be maintained throughout the mining operation. In particular, since mining is predicted to cause some amount drawdown in the Tongue River alluvium (Mine Plan Addendum MP-3), this needs specific discussion to demonstrate that the essential hydrologic functions will be maintained and/or reestablished.

Please also provide more detail on the plan and frequency of analyzing the aerial imagery. In addition, please note that given that Mine Plan Addendum MP-3 predicts some amount of drawdown in the alluvium of the Tongue River, installation of alluvial monitoring wells would be required to monitor the AVF. Otherwise there will be no way to assess the validity of the predicted drawdowns. Please provide a more detailed plan for installing the alluvial monitoring well(s). (MDK)

Response MK 24 – Round 2

The text at the end of Section RP.10 has been revised to include the pertinent details on the essential hydrologic function monitoring plan. The plan includes obtaining infrared photography every 5 years and photo documentation annually, as well as installing and monitoring alluvial wells on the Tongue River and Goose Creek during mining and reclamation periods. Exhibit RP.8-5 has been revised to include the proposed locations of the alluvial wells. Also, Guideline 9 Alluvial Valley Floors has been added to the Reference Section RP.17.

Comment MK 24 – Round 3

Response not accepted. Please see review of the response to Comment MK 21 and state in the text in Section RP.10 that the three proposed wells will be installed prior to commencing any mining-related disturbance. (MDK)

Response MK 24 – Round 3

A sentence stating alluvial monitoring wells will be installed prior to commencing mining related disturbance was added to Section RP.10.

Comment MK 25 – Round 1

Reclamation Plan, Section RP.10 Reestablishment of Essential Hydrologic Functions and Agricultural Utility on Alluvial Valley Floors, 25. As noted in Comment No. 21, the adjacent Goose Creek AVF also needs a monitoring system to demonstrate essential hydrologic functions are maintained and/or reestablished as required by LQD Coal Rules and Regulations, Chapter 5, Section 3(c)(i) and (ii). (MDK)

Response MK 25 – Round 1

Revised text as requested in Section RP.10.

Comment MK 25 – Round 2

Response not accepted. Please revise the discussion on the Goose Creek AVF monitoring system as per the response to Comment MK 24. (MDK)

Response MK 25 – Round 2

See response MK 24 for discussion on the Goose Creek AVF monitoring system.

Comment MK 25 – Round 3

Response accepted.

Comment MK 26 – Round 1

Reclamation Plan, Section RP.10 Reestablishment of Essential Hydrologic Functions and Agricultural Utility on Alluvial Valley Floors, 26. This section may also need to be addressed if the LQD finds that other AVFs exist on or near the permit area. If AVFs are determined to be present, the essential hydrologic functions must be maintained and/or reestablished as required by LQD Coal Rules and Regulations, Chapter 5, Section 3(c)(i) and (ii). (MDK)

Response MK 26 – Round 1

Revised text as requested in Section RP.10.

Comment MK 26 – Round 2

No comment received.

Response MK 26 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 75 – Round 1

Reclamation Plan, Section RP.3.3 Postmine Slope Analysis, 49. Please provide a discussion that compares the pre-mine vs. post-mine slope characteristics. A table would be helpful that compared the minimum, maximum, and average slopes under pre-mine and post-mine conditions. (MDK)

Response MK 75 – Round 1

Added Table RP.3-1 comparing premining and postmining slopes. Updated Section RP.3.3 of text to include reference to the new table.

Comment MK 75 – Round 2

No comment received.

Response MK 75 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 76 – Round 1

Reclamation Plan, Section RP.3.5 Drainage Reestablishment, 50. It is stated that mining will disturb portions of the Slater Creek channel and the reclamation will entail reconstruction. However, the Mine Plan PHC (Section MP.6.1) stated that Slater Creek

“will still flow naturally around the trench”, and “Because Slater Creek’s flow will not come into contact with mining activities, no impact will be made to water quality”. Please provide a clear and explicit description of the extent of direct disturbance to the Slater Creek channel. This description should be consistent between the Mine Plan and Reclamation Plan. (MDK)

Response MK 76 – Round 1

As stated in the revised Section MP.6.1 of the Mine Plan, the only anticipated surface disturbance to Slater Creek during mining will be the redirection of the channel through a culvert under a proposed haul road. No text was edited in response to this comment.

Comment MK 76 – Round 2

No comment received.

Response MK 76 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 77 – Round 1

Reclamation Plan, Section RP.4.2 Mitigation of Unsuitable Material , 51. Minor channels are defined as ephemeral streams but there is no definition provided for “major channels”. Please provide a definition and also illustrate an example of a major channel within the proposed permit boundary that would fit into this category. (MDK)

Response MK 77 – Round 1

Revised text in Section RP.4.2 to provide the definition of major channels.

Comment MK 77 – Round 2

No comment received.

Response MK 77 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 78 – Round 1

Reclamation Plan, Section RP.5.6 Erosion Control and Conservation Practices, 52. The first sentence of the second paragraph...”Rills and gullies...” needs revised, as it appears to be missing one or more words. (MDK)

Response MK 78 – Round 1

See response to Comment DE 20. Text revised as requested.

Comment MK 78 – Round 2

No comment received.

Response MK 78 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 79 – Round 1

Reclamation Plan, Section RP.7.4 Aquatic Habitat, 53. The second sentence discusses stockponds possibly being disturbed by mining activities. The Mine Plan PHC did not mention that any existing stockponds would be disturbed by mining activities. If stockponds are to be disturbed by the mining operation, this should be discussed in the Mine Plan PHC. (MDK)

Response MK 79 – Round 1

The text in the Mine Plan PHC has been revised to clarify the disturbance to stockponds within the permit area. Section RP.7.4 has been revised to clarify the anticipated aquatic habitat locations.

Comment MK 79 – Round 2

No comment received.

Response MK 79 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 80 – Round 1

Reclamation Plan, Section RP.7.4 Aquatic Habitat, 54. The text states that two additional postmine impoundments will be constructed and their location is shown in Exhibit RP.3-1. This Exhibit shows ten permanent impoundments, both on and adjacent to the proposed permit area. Please revise this discrepancy in the text or change the symbology in the Exhibit to clearly show the two permanent post-mine impoundments. (MDK)

Response MK 80 – Round 1

Revised text in Section RP.7.4. to clarify the postmine impoundment locations.

Comment MK 80 – Round 2

No comment received.

Response MK 80 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 81 – Round 1

Reclamation Plan, Section RP.8.1 Drainage Basin Reconstruction, 55. Please add the major stream name labels (Tongue River, Goose Creek, East Fork Earley Creek, Slater Creek, Hidden Water Creek) to Exhibit RP.8-1. (MDK)

Response MK 81 – Round 1

Revised Exhibit RP.8-1 as requested.

Comment MK 81 – Round 2

No comment received.

Comment MK 81 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 82 – Round 1

Reclamation Plan, Section RP.8.1 Drainage Basin Reconstruction, 56. Please explain in the text how the postmine drainage basin parameters in Table RP.8-1 were determined. (MDK)

Response MK 82 – Round 1

Revised text in Section RP.8.1 as requested.

Comment MK 82 – Round 2

No comment received.

Response MK 82 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 83 – Round 1

Reclamation Plan, Section RP.8.1 Drainage Basin Reconstruction, 57. The text states that a comparison of drainage basin parameters in Table RP.8-1 and Exhibit RP.8-1 show that the overall hydrologic balance will remain largely unchanged. This conclusion is not obvious from the Table and Exhibit. How similar are the postmine drainage basin parameters to the pre-mine parameters? Which sub-drainages show the largest change from pre-mine conditions? The text needs to include a more thorough discussion to demonstrate to the reader why exactly the postmine hydrologic balance will be unchanged. (MDK)

Response MK 83 – Round 1

Revised text to include reference to Appendix D6 tables and exhibits regarding drainage basin parameters. Minor disturbance and mining methods contribute to the largely unchanged postmine drainage basin parameters.

Comment MK 83 – Round 2

No comment received.

Response MK 83 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 84 – Round 1

Reclamation Plan, Section RP.8.1.1 Discharge Estimates, 58. The text provides no discussion of the comparison between the pre-mine and postmine modelled discharge values. Please provide this discussion so the reader can determine if the differences are minor or major. (MDK)

Response MK 84 – Round 1

Revised text in Section RP.8.1.1 as requested.

Comment MK 84 – Round 2

No comment received.

Response MK 84 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 85 – Round 1

Reclamation Plan, Section RP.8.1.1 Discharge Estimates, 59. Please add the year to the Miller reference within the text (2003) and add this citation to the references list in Section RP.17. (MDK)

Response MK 85 – Round 1

Revised text as requested.

Comment MK 85 – Round 2

No comment received.

Response MK 85 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 86 – Round 1

Reclamation Plan, Section RP.8.1.1 Discharge Estimates, 60. Similar to Comment No. 8 made for Appendix D6, the HEC-HMS runoff estimates in Table RP.8.4 are much higher than the Miller (2003) equations. Please provide a discussion in the text as to the reasonableness of the HEC-HMS estimates and why the HEC-HMS estimates are so much higher than the Miller (2003) regression equations.

Response MK 86 – Round 1

See response to Comment MK 34. No revisions to the text were made.

Comment MK 86 – Round 2

No comment received.

Response MK 86 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 87 – Round 1

Reclamation Plan, Section RP.8.1.2 Channel/Floodplain Design, The last sentence in the first paragraph states that stream reaches for which designed cross sections are provided are identified in plan on Exhibit RP.8-1. There is nothing on this Exhibit that shows which stream reaches have designed cross sections, nor which stream channels are being reconstructed. Please clearly identify this information on this Exhibit. (MDK)

Response MK 87 – Round 1

Exhibit RP.8-1 has been revised as requested.

Comment MK 87 – Round 2

No comment received.

Response MK 87 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 88 – Round 1

Reclamation Plan, Section RP.8.1.2 Channel/Floodplain Design, 62. Exhibit RP.8-2 shows that the main Slater Creek channel will not be disturbed. Please consider this in light of Comment No. 50 that requested clarification on the extent of disturbance to the Slater Creek channel. (MDK)

Response MK 88 – Round 1

See response to Comment MK 76(referred to as Comment No. 50). Revised Exhibits RP.8-1 RP.8-2 as requested. A reconstructed Slater Creek (Figure RP.8-9) cross section has been added to reflect the correct disturbance boundary.

Comment MK 88 – Round 2

No comment received.

Response MK 88 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 89 – Round 1

Reclamation Plan, Section RP.8.1.2 Channel/Floodplain Design, 63. On Page RP-35, second paragraph, it references “reclaimed Slater Creek channel” and channel hydraulics are presented in Table RP.8-5. It is not clear why channel hydraulics are presented for Slater Creek when it will not be disturbed. Is this because reclaimed tributaries to Slater Creek are changing such that the main channel of Slater Creek is expected to be change? Please clarify this in the text. (MDK)

Response MK 89 – Round 1

Slater Creek is included Table RP.8-5 to show that the postmine Slater Creek Channel will be hydraulically similar to premine conditions after mining and reclamation operations have been completed as reclamation of a portion of Slater Creek is expected.

Comment MK 89 – Round 2

No comment received.

Response MK 89 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 90 – Round 1

Reclamation Plan, Section RP.8.2 Permanent Impoundments, 64. It is unclear exactly how many new postmine impoundments will be constructed. Table RP.8-6 identifies two impoundments (Enhancement Stock Pond 1 and Replacement Stock Pond 1), and these are shown in Exhibit RP.3-1. Exhibit RP.3-1 shows eight other permanent impoundments. Please identify if these are new features to be constructed or if they are existing stockponds that may be affected by the mining operation. (MDK)

Response MK 90 – Round 1

The text in Section RP.8.2 has been revised to clarify that only the new features to be constructed are displayed in Table RP.8-6. Affected existing stockponds will be constructed approximately to premine conditions.

Comment MK 90 – Round 2

No comment received.

Response MK 90 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 91 – Round 1

Reclamation Plan, Section RP.8.2 Permanent Impoundments, 65. Please identify in this section if there will be a net increase or decrease in post-mine water storage capacity relative to pre-mine capacity. (MDK)

Response MK 91 – Round 1

Revised text in Section RP.8.2 to clarify a net increase in water storage capacity is expected due to the addition of two postmine impoundments.

Comment MK 91 – Round 2

No comment received.

Response MK 91 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 92 – Round 1

Reclamation Plan, Section RP.8.2 Permanent Impoundments, 66. As mentioned Comment No. 47, it is advised that the applicant discuss with the SEO-Interstate Streams Division any implications for the Yellowstone Compact if new water storage features are proposed that potentially decrease water quantity to the Tongue River. (MDK)

Response MK 92 – Round 1

See response to Comment DS 28(Comment No. 47 mentioned above). Revised text as requested.

Comment MK 92 – Round 2

Response not accepted. The response referenced Comment DS 28, which did not mention consulting with the SEO about the Yellowstone Compact. As indicated in the

response to Comment MK 73, RAMACO is aware of the Yellowstone Compact and will act in accordance with the guidelines outlined. Please add a similar statement to Section RP.8.2. (MDK)

Response MK 92 – Round 2

The text in Section RP.8.2 Permanent Impoundments has been revised in the second paragraph to acknowledge that RAMACO will obtain a permit from the SEO, therefore any implications to the Yellowstone Compact will be analyzed by the SEO.

Comment MK 92 – Round 3

Response accepted.

Comment MK 93 – Round 1

Reclamation Plan, Section RP.8.4.2 Surface Water Monitoring, 67. The text on Page RP-40 states that the surface water monitoring stations are shown on Exhibit RP.8-4. However, the stations are not shown on this Exhibit. It may be make the most sense to add these to Exhibit RP.8-5 and rename the Exhibit “Postmine Hydrologic Monitoring Locations” so the surface water stations and monitoring wells are on one Exhibit. (MDK)

Response MK 93 – Round 1

Revised the reference in text to state “locations of these sites are shown on Exhibit RP.8-5”. Exhibit RP.8-5 was revised to include surface water monitoring stations and renamed as requested. Table RP.8-9 was edited to include all planned surface water stations including postmine impoundment monitoring sites.

Comment MK 93 – Round 2

No comment received.

Response MK 93 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 94 – Round 1

Reclamation Plan, Section RP.8.4.3 Postmine Impoundments, 68. The text on Page RP-41 states that water quality samples will be collected at each of the postmine impoundments listed in Table RP.8-6 and presented on Exhibit RP.3-1. Please clarify in the text that this sampling list includes all ten impoundments shown. (MDK)

Response MK 94 – Round 1

Revised text in Section RP.8.4.3 to reference Table RP.8-9 and Exhibit RP.8-5 for postmine surface water monitoring sites including postmine impoundments.

Comment MK 94 – Round 2

No comment received.

Response MK 94 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 95 – Round 1

Reclamation Plan, Section RP.8.4.3 Postmine Impoundments, 69. Please add the list of impoundments to be sampled to Table RP.8-9 “Surface Water Monitoring Sites”.
(MDK)

Response MK 95 – Round 1

Revised Table RP.8-9 as requested.

Comment MK 95 – Round 2

No comment received.

Response MK 95 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 96 – Round 1

Reclamation Plan, Section RP.8.4.3 Postmine Impoundments, 70. The postmine impoundments to be sampled appears to be slightly different from the impoundments listed in Mine Plan Table MP.7-1 “Operational Surface Water Monitoring Locations”. Table MP.7-1 lists three impoundments (Hall Reservoir, Black Mountain No. 1 Stock Reservoir, and Legerski Bros #1 Stock Reservoir) that are not listed as postmine impoundments to be sampled. Please explain why there is a difference in the operational monitoring and postmine monitoring of some impoundments. (MDK)

Response MK 96 – Round 1

Black Mountain No.1 Stock Reservoir has been added as a postmine impoundment that will be monitored. Legerski No. 1 Stock Reservoir and Hall Reservoir are outside of the areas planned for mining disturbance, however in an effort to further monitor the surface water of the Brook Mine permit area, the reservoirs were added to be sampled quarterly during mining. Table RP.8-9 and Exhibit RP.8-5 have been updated to include Black Mountain Reservoir No. 1 Stock Reservoir.

Comment MK 96 – Round 2

No comment received.

Response MK 96 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 97 – Round 1

Reclamation Plan, Section RP.8.4.3 Postmine Impoundments, 71. In the second full paragraph on Page RP-41, “The water quality samples..” please also state that the water quality samples will be compared against WDEQ/WQD Class III groundwater standards, as suggested by LQD Guideline No. 17 for replacement and enhancement stockponds. (MDK)

Response MK 97 – Round 1

Revised text as requested in Section RP.8.4.3.

Comment MK 97 – Round 2

No comment received.

Response MK 97 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 98 – Round 1

Reclamation Plan, Section RP.8.5.2 Surface Water, 72. At the end of the first paragraph on Page RP-44, it predicts a “slight change” in event peaks and volumes. Please further discuss what is meant by a “slight change”, i.e., what is the magnitude of the increase or decrease? (MDK)

Response MK 98 – Round 1

Section RP.8.5.2 has been updated to reflect the change in event peaks and volumes will be less than one percent when compared to premining conditions.

Comment MK 98 – Round 2

No comment received.

Response MK 98 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 99 – Round 1

Reclamation Plan, Section RP.8.5.2 Surface Water, 73. In the second paragraph on Page RP-44, please clarify the extent of direct mining disturbance to Slater Creek versus tributaries of Slater Creek. This comment relates to previous Comments No. 50 and 62. (MDK)

Response MK 99 – Round 1

See response to Comments MK 76 (comment No. 50) and Mk 88 (Comment No. 62).

Comment MK 99 – Round 2

No comment received.

Response MK 99 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 100 – Round 1

Reclamation Plan, Section RP.8.5.2 Surface Water, 74. Please provide a discussion as to whether the planned postmine impoundments will affect surface water quantity on or downstream of the proposed permit area. (MDK)

Response MK 100 – Round 1

Section RP.8.5.2 has been revised to include discussion of the effect of postmine impoundments to the surface water quantity on and downstream of the proposed permit area.

Comment MK 100 – Round 2

No comment received.

Response MK 100 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 101 – Round 1

Reclamation Plan, Section RP.9.1 Introduction, 75. The second paragraph references Appendix D8. Should this be Appendix D10 (Wetlands)? Please revise this if necessary. (MDK)

Response MK 101 – Round 1

The reference has been revised to D10 as requested.

Comment MK 101 – Round 2

No comment received.

Response MK 101 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 102 – Round 1

Reclamation Plan, Section RP.9.1 Introduction, 76. Please add a statement up front in the Wetland Mitigation section that the USACE has not yet issued a jurisdictional determination for the proposed Brook Mine. Please also provide a statement in the text that the information in Section RP.9 may be subject to change pending the USACE determination. The USACE jurisdictional determination should also be incorporated somewhere into the Mine Permit once that is received by the Brook Mine. (MDK)

Response MK 102 – Round 1

Sections RP.9.1 has been revised as requested.

Comment MK 102 – Round 2

No comment received.

Response MK 102 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MK 103 – Round 1

Reclamation Plan, Section RP.14 Bond Release, 77. The LQD no longer requires a bond release verification for “sediment control release”. This is now termed “surficial stability verification”. More information is available in LQD Guideline No. 23. Please revise the text for this change. (MDK)

Response MK 103 – Round 1

The text in Section RP.14 has been revised by removing the reference to sediment control release.

Comment MK 103 – Round 2

Response accepted. However please note that RAMACO may wish to also cite LQD Guidelines No. 20, 21, 22, 23, and 25, as these are key documents for assisting operators with bond release procedures. (MDK)

Response MK 103 – Round 2

The text in Section RP.14 Bond Release has been revised to include discussion of WDEQ/LQD Guidelines No. 20, 21, 22, 23 and 25 for bond release. In addition, the Guidelines mentioned above have been added to Section RP.17 References.

Comment MK 103 – Round 3

No comment received.

Response MK 103 – Round 3

Round 2 response assumed to be adequate. No response is necessary.

Comment MK 118 – Round 2 (New Comment)

In Section RP.3.4 Erosion and Sedimentation Control Practices, the first sentence on Page RP-4 references sedimentation impoundments. As noted in the response to Comment MK 49, sedimentation impoundments are not currently planned as part of the mining operation. The text in this section should also clarify that sedimentation impoundments are not planned. (MDK)

Response MK 118 – Round 2 (New Comment)

The Mine Plan has been revised to state that sedimentation impoundments will be required. Designs for sedimentation impoundments required in the first five years of operations are now provided in Addendum MP-2. Therefore, the reference to sedimentation impoundments in the Reclamation Plan has been left in place.

Comment MK 118 – Round 3

Response accepted.

Comment MK 119 – Round 2 (New Comment)

In Section RP.8.5.2 Surface Water, the third sentence of the last paragraph on Page RP-46 references sedimentation reservoirs. As noted in the response to Comment MK 49, sedimentation reservoirs are not currently planned as part of the mining operation. The text in this section should also clarify that sedimentation reservoirs are not planned. (MDK)

Response MK 119 – Round 2 (New Comment)

The Mine Plan has been revised to state that sedimentation impoundments will be required. Designs for sedimentation impoundments required in the first five years of operations are now provided in Addendum MP-2. Therefore, the reference to sedimentation impoundments in the Reclamation Plan has been left in place.

Comment MK 119 – Round 3

Response accepted.

Comment MK 127– Round 3 (New Comment)

RP.10 Reestablishment of Essential Hydrologic Functions and Agricultural Utility on Alluvial Valley Floors. Although no mining is planned on the AVFs on the Tongue River and Goose Creek, the disturbance boundary is within a small part of the Big Horn Mine AVF extent (Exhibit D11.6-1). It appears that this area includes the SP-1, OB-1, and OB-2 features in Section 21 on Exhibit MP.5-1, which was updated for this

round. Please include a statement in the text of Section RP.10 that there is some minor disturbance proposed within the AVF extent. Please also discuss in the text of Section RP.10 whether this disturbance would affect the essential hydrological functions of the AVF. (MDK)

Response MK 127 – Round 3 (New Comment)

Minor disturbance is planned within the Big Horn Mine AVF extent in Section 21 of Township 57 North, Range 84 West. The disturbance should not affect the essential hydrologic functions of the AVF on the Tongue River as the disturbed area is minimal in size and should not preclude the conveyance of flow. AVF areas disturbed will be replaced to mimic premine conditions. Discussion of the reclamation of the disturbed AVF areas has been added to the second paragraph of Section RP.10.

Comment MuK 91 – Round 1

Reclamation Plan, RP 8.5.3 Groundwater, 91. Section 8.3, page RP-38 states, “The estimated Postmine Potentiometric surfaces for the reclaimed aquifer for the Masters and Carney Seams are presented respectively in Exhibit RP.8.3 and Exhibit RP.8-4. Please provide a summary comparing and contrasting the premine potentiometric surfaces vs. post mine potentiometric surfaces. This comparison should also consider any changes in the hydraulic properties (hydraulic conductivity, storativity, recharge capacity) of the premine aquifers vs. post mine aquifers. (MK)

Response MuK 91 – Round 1

Section RP.8.5.3 has been revised to include discussion regarding the comparison of premine and postmine potentiometric surfaces.

Comment MuK 91 – Round 2

No comment received.

Response MuK 91 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MuK 92 – Round 1

Reclamation Plan, RP 8.5.3 Groundwater, 92. Please discuss any changes in the interaction between the surface water and groundwater systems from the premining through the postmining phases of the operation. (MK)

Response MuK 92 – Round 1

The response to Comment MuK 84 describes interaction between the surface water and groundwater systems from the premining through the postmining phases of operation. In general the changes between the surface water systems and the groundwater systems are expected to be minimal. For a short time during mining it is

anticipated that there will be a small (less than 6%) increase in the amount of water that recharges the coal seams from the Tongue River. Once the water levels in the coals recover, no further impacts are expected.

Comment MuK 92 – Round 2

No comment received.

Response MuK 92 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MuK 93 – Round 1

Reclamation Plan, RP 8.5.3 Groundwater, 93. Please discuss the intersection of the postmining topographic and potentiometric surfaces and their effects on the location and size of groundwater-fed water bodies. (MK)

Response MuK 93 – Round 1

Revised Section RP.8.5.3 as requested.

Comment MuK 93 – Round 2

No comment received.

Response MuK 93 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MuK 94 – Round 1

Reclamation Plan, RP 8.5.3 Groundwater, 94. Section 8.5.3, page RP-46 states, “These water quality changes can be qualitatively predicted from the overburden mineralogy and projected post mine hydrology.” Please expand this discussion on projected groundwater quality. Provide a discussion on the estimated/ projected post mining groundwater quality. A detailed description of potential changes in water quality from flow through backfill/mined out areas should be included. Any potential changes to water quality in adjacent aquifers should be discussed with respect to the potential for offsite material damage. (MK)

Response MuK 94 – Round 1

Revised Section RP.8.5.3 text as requested.

Comment MuK 94 – Round 2

No comment received.

Response MuK 94 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MuK 95 – Round 1

Reclamation Plan, RP 8.5.3 Groundwater, 95. Please provide a discussion on any anticipated water use during the reclamation period. (MK)

Response MuK 95 – Round 1

As discussed in Addendum MP-3, the only anticipated groundwater uses during the reclamation period are at existing water supply wells. Section RP.8.5.3 has been revised to include additional discussion.

Comment MuK 95 – Round 2

No comment received.

Response MuK 95 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment MuK 96 – Round 1

Reclamation Plan, RP 8.5.3 Groundwater, 96. Please address (or reference) any expected post-reclamation subsidence effects on the hydrologic system (both quantity and quality) and the plan to minimize these effects. (MK)

Response MuK 96 – Round 1

Section RP.8.5.3 has been revised to include discussion of expected postmine subsidence effects on the hydrologic system.

Comment MuK 96 – Round 2

No comment received.

Response MuK 96 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment SP 7 – Round 1

Reclamation Plan, Page RP-13. Section RP.6.2.6. In the last sentence please add that substitutions to the seed mix will be made only with WDEQ approval.

Response SP 7 – Round 1

Revised text in Section RP.6.2.6 as requested, the statement will now read “In the event that seed for primary species is not available, alternatives will be considered

which match the life form and morphology of the primary choice only with WDEQ approval.”

Comment SP 7 – Round 2

No comment received.

Response SP 7 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment SP 7 – Round 3

The response is satisfactory. A commitment to notify the DWEQ for seed mix substitutions has been added.

Comment SP 8 – Round 1

Reclamation Plan, Page RP-16. Section RP.6.4.1. To demonstrate that all of the unaffected acres of each vegetation community are sufficient for an extended reference area please create a table with total acres and affected acres and reference this table in this section.

Response SP 8 – Round 1

Table RP.6-6 has been created to display the number of extended reference acres for the respective vegetation communities. The text in Section RP.6.4.1 has been revised to include a reference to the newly created table.

Comment SP 8 – Round 2

No comment received.

Response SP 8 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment SP 8 – Round 3

Table RP6-6. This table should use the acreage within the permit boundary since the mine has control over management of the land in the permit. Please revise the first column of this table from Brook Mine Study Area to Brook Mine Permit Area and use the acreages from Table D8.2-1. For the second column please title it Disturbed Acreage. When the subtraction for the final column occurs there will be very little acreage for the Agricultural Land but historic or county production numbers can be used.

Response SP 8 – Round 3

Table RP.6-6 has been revised with the permit area acreages from Table D8.2-1 in the first column and the second column has been renamed from Postmining Disturbed Areas to Disturbed Acreage.

Comment SP 9 – Round 1

Reclamation Plan, Page RP-17. Section RP.6.4.1. Please add to the Ch. 4 reference in the first sentence on this page that the Handbook of Approved Sampling and Statistical Methods for Evaluation of Revegetation Success on Wyoming Coal Mines.

Response SP 9 – Round 1

Revised Section RP.6.4.1 as requested.

Comment SP 9 – Round 2

No comment received.

Response SP 9 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment SP 9 – Round 3

The response is satisfactory. A reference to the Handbook of Approved Sampling and Statistical Methods for Evaluation of Revegetation Success on Wyoming Coal Mines has been added.

Comment SP 10 – Round 1

Reclamation Plan, Page RP-17. Section RP.6.4.1. Please remove the first sentence in the third paragraph. It appears in conflict with the next sentence which cites Ch. 4.Sec. 2(d)(ii)(B).

Response SP 10 – Round 1

Removed sentence as requested in Section RP.6.4.1.

Comment SP 10 – Round 2

No comment received.

Response SP 10 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment SP 10 – Round 3

The response is satisfactory. The conflicting citation has been removed.

Comment SP 11 – Round 1

Reclamation Plan, Page RP-19. Section RP.6.4.5.1. Please add a third sentence to the first paragraph to Pastureland land use with a full shrub density greater than 1 shrub/m² is also eligible.

Response SP 11 – Round 1

Sentence including pastureland land use as eligible added to Section RP.6.4.5.1 as requested.

Comment SP 11 – Round 2

No comment received.

Response SP 11 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment SP 11 – Round 3

The response is satisfactory. Pastureland with greater than 1 shrub/m² has been corrected to be eligible.

Comment SP 12 – Round 1

Reclamation Plan, Page RP-24. Please revise the sentence after the • Shrub density bullet to “Additionally, a species list will be prepared” and delete the remainder of the sentence.

Response SP 12 – Round 1

Revised text as requested.

Comment SP 12 – Round 2

No comment received.

Response SP 12 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment SP 12 – Round 3

The response is satisfactory. The sentence has been revised.

Comment SP 13 – Round 1

Reclamation Plan, Page RP-25. Section RP.6.7.3. Under Sampling Frequency in Guideline 14 the third sample may be included as part of your revegetation success (bond release) sampling which can begin in year seven. You may add more flexibility

to your sampling interval such as beginning year 3 or 4, with the second sampling in year 5, 6 or 7 and then the third may be year 7 – 13 and may be used for revegetation success.

Response SP 13 – Round 1

Revised text per recommendations.

Comment SP 13 – Round 2

No comment received.

Response SP 13 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment SP 13 – Round 3

This is confusing. Please use the following language for the section. Sampling will begin in year 3 or 4 after seeding. The second sampling will occur in year 6 or 7 after seeding and the third sampling which may be used for final revegetation success will occur by year 13 or 14 after seeding. In the event the bond period for specific monitoring areas exceeds ten years, additional sampling will occur every five years after the third sample until final bond release.

Response SP 13 – Round 3

RAMACO acknowledges that the text may be confusing. Reclamation Plan text will remain as is.

Comment SP 14 – Round 1

Reclamation Plan, Page RP-29. Section RP.7.2. There is a reference to RP.8 in this section. Please correct the reference if it is not correct.

Response SP 14 – Round 1

Revised text to reference Section RP.6 for seed mixtures and revegetation operations.

Comment SP 14 – Round 2

No comment received.

Response SP 14 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment SP 14 – Round 3

The response is satisfactory. The reference has been corrected.

Comment SP 15 – Round 1

Reclamation Plan, Table RP6.1. Could you please add a footnote listing the disturbances that are included in the 87.3 acres of Disturbance and what the disturbances will be postmining in the 56.1 acres.

Response SP 15 – Round 1

Added footnote describing disturbance for premining and postmining to Table RP.6-1 as requested.

Comment SP 15 – Round 2

No comment received.

Response SP 15 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment SP 15 – Round 3

The response is satisfactory. The types of disturbance have been listed.

Comment SP 16 – Round 1

Reclamation Plan, Exhibit RP.2-1. Postmining the landuse will be Grazingland and Fish and Wildlife Habitat (937.7 acres) and Cropland (3.7 acres) with 56.1 acres of disturbance, 4.9 acres of water and 11.6 acres of wetland. These landuses will match the landuses on Exhibit D1.1-1. With just minor acreage changes shown in Table RP.6-1. Since the railroad and major roads are identified and Taylor Quarry is going to be reclaimed to Grazingland and Fish and Wildlife Habitat, the Industrial commercial stippling is not needed on these areas.

Response SP 16 – Round 1

Revised exhibit as requested.

Comment SP 16 – Round 2

No comment received.

Response SP 16 – Round 2

Round 1 response assumed to be adequate. No response is necessary.

Comment SP 16 – Round 3

The response is satisfactory. Exhibit RP.2-1 has been revised to Grazingland for the reclamation of the Taylor Quarry.

Comment SP 17– Round 3 (New Comment)

Please correct tables or text that list the new affected area. This acreage should match the acreage listed on your Form 1.

Response SP 17 – Round 3 (New Comment)

Tables RP.6-3 has been revised to include a note stating the affected area acreage outside the disturbance boundary has been excluded from shrub density calculations because this acreage will be undisturbed during mining operations except for potential subsidence. No other tables have been revised in response to this comment. Form 1 has been updated with the revised affected area acreage in Adjudication.

Comment SP 18– Round 3 (New Comment)

The shrub density standard is based on the affected acreage which is listed on your Form 1. Please make any needed changes to your shrub density tables and maps.

Response SP 18 – Round 3 (New Comment)

Tables RP.6-3 has been revised to include a note stating the affected area acreage outside the disturbance boundary has been excluded from the shrub density calculations because this acreage will be undisturbed during mining operations except for potential subsidence. Form 1 has been updated with the revised affected area acreage in Adjudication.

Other Comments

Comment MK 27 – Round 1

Items Requested in Electronic Format for Preparation of CHIA, 1. Please provide a CAD or ArcGIS shapefile that contains the proposed permit boundary for the Brook Mine. This file will be used to prepare maps in the CHIA. This file can be emailed to: matthew.kunze@wyo.gov. (MDK)

Response MK 27 – Round 1

See response to comment MK 28.

Comment MK 27 – Round 2

Response to the comment is pending. Review of the response to this comment will be completed when the information is received. (MDK)

Response MK 27 – Round 2

The permit boundary in CAD format was provided as an attachment in an e-mail dated September 1, 2015.

Comment MK 27 – Round 3

Response accepted.

Comment MK 28 – Round 1

Items Requested in Electronic Format for Preparation of CHIA, 2. Please provide the baseline surface and groundwater data collected to support baseline characterization for the permit application. All data can be submitted on Excel templates (Attachments) found on the LQD website for the Coal Annual Report Format (CARF): <http://deq.wyoming.gov/lqd/coal/resources/annual-report-3/>.

- Please provide all surface water flow and water quality data for the following surface water stations: SM578415-SW-1, SM578409-SW-1, SM578418-SW-1, and SM578512-SW-1.
- Please provide all groundwater level and water quality data for all Brook Mine monitoring wells shown in Table D6.2-1.

Response MK 28 – Round 1

The electronic data requested is being compiled in the requested format and will be provided when it is completed.

Comment MK 28 – Round 2

Response to the comment is pending. Review of the response to this comment will be completed when the information is received. (MDK)

Response MK 28 – Round 2

The electronic data in CARF format was provided as an attachment in an e-mail dated September 1, 2015.

Comment MK 28 – Round 3

Response accepted.

Comment MuK 97 – Round 2 (New Comment)

In the next submittal, please consider providing a text tracking mechanism that will highlight the changes that are made in response to the comments. Typically, it can be a bolded font for all the text that is revised. This will help the reviewer to review the appropriate revised text. Without this bold font or some distinct highlight for the revised text, the reviewer has to compare against the initial submittal to get a handle on the changes that were made in response to the LQD comments.

Response MuK 97 – Round 2 (New Comment)

RAMACO will coordinate with WDEQ to facilitate review in anyway once WDEQ has determined the method that is most suitable (as per the meeting on September 1, 2015). In the meantime, RAMACO has attempted to make it as clear as possible in comment responses what the location of textual changes has been. Additionally, please refer to the Change Index for locations of replaced or added text, tables, and figures. Also, any page with new changes will be updated with the submittal month and year in the footer. Pages in the permit without changes will maintain previous dates.

Comment MuK 97 – Round 3

Response accepted.

From: Mary Brezik Fisher
To: ["Shannon Anderson"](#); [Clayton Gregersen](#); [Andrew Kuhlmann](#); james.larock@wyo.gov; [Thomas Sansonetti](#); [Isaac Sutphin](#); [Jeffrey S. Pope](#); [Lynne Boomgaarden](#)
Cc: jim.ruby@wyo.gov; [Jay Gilbertz](#)
Subject: Brook Mine-EQC Dkt. 17-4802 - Fishers" Revised Exhibit List
Date: Friday, May 19, 2017 11:18:31 AM
Attachments: [1.FISHER EXHIBIT LIST.RV.pdf](#)

All: Attached please find Fishers' revised exhibit list. The only change was on the first page in which the numbering of exhibits 2 and 3 was changed to comport with our bates stamp nos. on bottom left-hand corner of the exhibits. Thank you.

Mary Brezik-Fisher
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FISHERS' CONTESTED CASE HEARING EXHIBITS

EXHIBIT A

- FISHER 1: Aerial Photo of portion of Tongue River Valley
- FISHER 2: Photos of Fishers' house and property
- 2.0002: Old Photo of House
 - 2.0003: Old Rock Barn Structure
 - 2.0004: Initials carved on rock barn: L.S. July 26, '13
 - 2.0005: Old Rock Building/Dwelling on Property
 - 2.0006: Fisher house at time of purchase in 1996
 - 2.0007: Phase 1 depiction of house remodel
 - 2.0008: Current depiction of Fisher house
 - 2.0009: Mature fruit trees and pine trees with new fence
 - 2.0010: Landscape photo of Fisher property from frontage road
 - 2.0011: Landscape photo of Fisher property from I-90
- FISHER 3: Photos of Boceks' property adjacent to Fishers
- 3.0012: Bocek property view along frontage road
 - 3.0013: Bocek property view along frontage road
- FISHER 4: Photo of Mine Subsidence in Sheridan County
- FISHER 5: Letter from Todd Parfitt dated 01/30/17 denying informal conference
- FISHER 6: Letter from Fishers to BKS Environmental Associates, Inc. dated 07/03/13
- FISHER 7: Email chain between BKS and Niles Veal (July, 2013) regarding trespass on Fisher property (*Brook 041660-041662*)
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- FISHER 9: Internet Blog posted on 02/04/14 entitled: "Photos: Hazardous Gas Clouds From Coal Mine Blasting In Southeastern Montana"
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- FISHER 11: Sheridan Media Web Content Article dated 02/09/17 (*produced by Fishers in discovery*)
- FISHER 12: Gerlach-Map (C-1 Objection Exhibit C) from Expert Report
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From: Jay Gilbertz
To: [Shannon Anderson](#); [Clayton Gregersen](#); [Andrew Kuhlmann](#); james.larock@wyo.gov; [Thomas Sansonetti](#); [Isaac Sutphin](#); [Jeffrey S. Pope](#); [Lynne Boomgaarden](#)
Cc: [Jim Ruby](#); [Mary Brezik Fisher](#)
Subject: RE: EQC Dkt. 17-4802 Fisher Exhibits
Date: Wednesday, May 17, 2017 5:16:48 PM

Here is a DropBox link to the Fisher Exhibits which were filed this morning.

<https://www.dropbox.com/sh/io16szcpxo741ca/AAAC7-WPkUV4MiMf5l7K7BcPa?dl=0>

Jay A. Gilbertz
Yonkee & Toner, LLP
P.O. Box 6288
Sheridan, WY 82801
(307) 674-7451 (Phone)

From: Jay Gilbertz
To: [Shannon Anderson](#); [Clayton Gregersen](#); [Andrew Kuhlmann](#); james.larock@wyo.gov; [Thomas Sansonetti](#); [Isaac Sutphin](#); [Jeffrey S. Pope](#); [Lynne Boomgaarden](#)
Cc: [Jim Ruby](#)
Subject: RE: EQC Dkt. 17-4802 Fisher pre-hearing filings
Date: Wednesday, May 17, 2017 4:27:13 PM
Attachments: [Fishers" Pre-Hearing Memorandum.pdf](#)
[Fishers" Witnesses and Exhibits.pdf](#)

Attached are the Fishers' Pre-Hearing filings.

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Attorney for Objectors,
Mary Brezik-Fisher and David Fisher

**BEFORE THE ENVIRONMENTAL QUALITY COUNCIL
STATE OF WYOMING**

IN RE BROOK MINE APPLICATION)	
)	
TFN 6 2-025	)	DOCKET 17-4802
)	

OBJECTOR FISHERS' PRE-HEARING MEMORANDUM

Jay A. Gilbertz, of the firm Yonkee & Toner, LLP, by and on behalf of Objectors Mary Brezik-Fisher and David Fisher ("Fishers"), and pursuant to the Order Of Consolidation And Schedule dated March 13, 2017, submits Objector Fishers' Pre-Hearing Memorandum as follows:

ISSUES TO BE DECIDED:

1. Can Brook Mine prove that its mining application and plan are substantively complete and in substantive compliance with the Wyoming Environmental Quality Act and all applicable laws, rules, regulations and standards, including without limitation, Wyo. Stat. §35-11-406?
2. Can Brook Mine prove that its mining application and plan are substantively in compliance with the policy and purpose of the Wyoming Environmental Quality Act and any applicable laws, rules, regulations or standards?

3. Can Brook Mine prove that all conditions precedent to the issuance of a coal mining permit have been met?
4. Are special conditions or contingency requirements appropriate under the unique circumstances of this permit application?

Brief Factual Background:

Brook Mine, LLC has applied for a surface coal mining permit. The permit seeks the right to mine for coal in a high-wall mining fashion which includes auguring coal from underneath overburden similar to underground mining. The proposed mine is in close proximity to the important alluvial valley floors of the Tongue River, Goose Creek and Slater Creek drainages. This area and surrounding lands are important farming and agricultural areas and risks to the quality and quantity of both surface and subsurface waters are at issue. The area has also experienced underground mining activities (such mines well predating environmental protection laws) and has a long and well-documented history of subsidence problems associated with those mines. Environmental subsidence damage from underground mining is a matter of historical fact in the area.

During the permit application process, neither Brook Mine, LLC nor the Wyoming DEQ sought the involvement of nor did they allow members of the public or affected landowners an opportunity to be involved or heard. Rather, the permit was declared technically complete without even cursory public involvement and prior to the Administrator making required statutory findings. Only then were the public and affected landowners invited to file formal "objections" and it was suggested any concerns would be addressed in an informal proceeding.

Rather than providing an informal conference, the DEQ shirked the informal process in favor of referring the matter to this Council. This decision forced any interested member of the public into expensive and burdensome contested case litigation just to have their concerns heard. Faced with this impediment, many Objectors simply chose to give up. Even then, Brook Mine engaged in legal efforts to have the Objector's cases dismissed and preclude any public input at all.

The Objectors who remained were then subjected to what appears to be punitive depositions and intrusive discovery at the hands of Brook Mine. The Fishers contend that a hallmark of environmental protection laws is to encourage public participation with the goal of a better permitting process based on the collective wisdom of the regulators and the public. Unfortunately, the Brook Mine permit has proceeded in a fashion of roadblocks, practical punishments and exclusion, rather than on one of simple inclusion.

Fishers contend that the Brook Mine application and plan do not adequately or substantively assess the potential environmental, hydrologic and reclamation hazards presented by this coal mine. For this reason, the scientific basis for the potential environmental impacts is deficient and thus cannot predict the likely ramifications of allowing the mine to proceed. As such, the application must be denied at this time and more scientific and thorough investigations, conclusions and planning are warranted and necessary before further consideration can be accomplished. The Fishers further contend that Brook Mine's current application is technically deficient and substantively lacking in a number of other ways. Fisher also contend that in any event, any permit should have special conditions

or contingencies which address the unique conditions and necessary landowner protections for this particular and unique mine site.

WITNESSES AND EXHIBITS:

The Fishers are separately and concurrently filing a designation of witnesses and exhibits.

DATED this 17th day of May, 2017.

YONKEE & TONER, LLP



Jay A. Gilbertz, WSB# 6-3087

Attorney for Objectors

Mary Brezik-Fisher and David Fisher

319 West Dow Street

P.O. Box 6288

Sheridan, WY 82801

Telephone: (307) 674-7451

Telefax: (307) 672-6250

CERTIFICATE OF SERVICE

I, Jay A. Gilbertz, hereby certify that on the 17th day of May, 2017, I served a true and correct copy of the above and foregoing *by electronic transmission*, duly addressed as follows:

Andrew Kuhlmann
Asst. Attorney General
andrew.kuhlmann@wyo.gov
james.larock@wyo.gov

Alan Edwards
Deputy Director, DEQ
Alan.edwards@wyo.gov

Thomas L. Sansonetti
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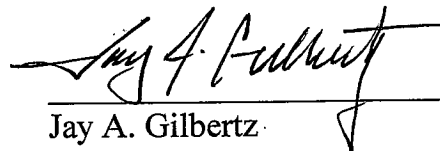
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Shannon Anderson
Powder River Basin Resource Council
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Brooke Collins
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bpcharlie@wbaccess.net

Jim Ruby
Executive Officer, EQC
jim.ruby@wyo.gov


Jay A. Gilbertz

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jgilbertz@yonkeetoner.com
Attorney for Objectors,
Mary Brezik-Fisher and David Fisher

**BEFORE THE ENVIRONMENTAL QUALITY COUNCIL
STATE OF WYOMING**

IN RE BROOK MINE APPLICATION)	
)	
TFN 6 2-025	)	DOCKET 17-4802
)	

OBJECTOR FISHERS' LIST OF WITNESSES AND EXHIBITS

Jay A. Gilbertz, of the firm Yonkee & Toner, LLP, by and on behalf of Objectors Mary Brezik-Fisher and David Fisher ("Fishers"), and pursuant to the Order Of Consolidation And Schedule dated March 13, 2017, submits Objector Fishers' List Of Witnesses and Exhibits as follows:

I. WITNESSES

A. "Will Call" Witnesses

Fishers will call the following witnesses to testify at the contested case hearing in this matter:

- 1. Mary Brezik-Fisher c/o Jay A. Gilbertz.**

Mrs. Fisher will testify about the Fishers' backgrounds, education and experience, as well as factual information concerning the Fisher property and adjacent lands including its history and how it is subject to the impacts of the proposed mining activities. In addition, she will testify as to their knowledge of all matters relating to the Brook Mine Permit, including their efforts at requesting and obtaining an informal meeting with DEQ, their discovery responses, and all matters concerning potential impacts to their property and adjoining landowners' property, livelihood, property values, and health and safety. Mrs. Fisher will also explain the concerns she has about the proposed mining activities and basis for those concerns. It is further expected that Mrs. Fisher will testify consistent with the deposition testimony she provided.

B. "May Call" Witnesses

Fishers may call the following individuals to testify at the contested case hearing in this matter:

2. **David Fisher** c/o Jay A. Gilbertz. Mr. Fisher is a party to this action and would testify to all the subject matters identified in the potential testimony of Mrs. Fisher set forth above.

3. **John Buyok, P.E.**
86 Monarch Rd.
Ranchester, WY 82839
(307) 673-0068

Mr. Buyok is a retired licensed engineer and he lives within ½ mile of the proposed mining operations. He has experience in reviewing mine and reclamation plans and currently provides services as a private engineering consultant. Mr. Buyok testified previously

regarding the Brook Mine Plan Application in Civil Action No. 16-1601 before the Environmental Quality Council and is expected to testify consistent with his previous testimony. He has reviewed the brook mine plan, reclamation plan, and other materials associated with the pending permit which is the subject of this litigation, and it is expected that he will testify concerning his knowledge and experience in reviewing mine plans, his opinions concerning deficiencies and incompleteness in the mine plan as it is currently proposed, inadequate bonding, and various other concerns as a potentially affected landowner. Mr. Buyok is further expected to testify consistent with his recent deposition which was demanded and taken by Brook Mine in the current pending action. The Fishers reserve the right to call/present Mr. Buyok through his transcribed deposition testimony.

4. Representatives of Wyoming Department Of Environmental Quality

Fishers may call one or more representatives/employees of WDEQ offices in the Sheridan, Cheyenne, and Lander offices concerning their evaluation of the mine plan at issue, including but not limited to, B.J. Kristiansen, Doug Emme, Matt Kunze, and Muthu Kuchanur, Ph.D.

5. Randall Atkins and other representatives, agents, consultants, landmen, engineers, or liasons of Brook Mining Co., LLC and/or Ramaco.

Fishers may call Mr. Atkins, Niles Veal and/or other representatives, agents, consultants, landmen, engineers or liasons of Brook Mining Co., LLC and/or Ramaco to testify concerning all aspects of the proposed Brook Mine, mine plan and reclamation plan, and including but not limited to, deficiencies and incompleteness, communications with landowners, media reports and articles, communications with government officials,

communications with WDEQ, conduct and action toward landowners and all other matters at issue to which they may have knowledge.

6. Brooke Collins: Ms. Collins is the owner/occupant and the restorer of a historic church constructed or faced with native stone and located near the proposed mine site. Ms. Collins is believed to be well-versed in the local history of activities and man-made structures in the vicinity of the proposed mine and may be called to provide her historical knowledge of the area, mine subsidence problems and knowledge of certain structures near the mine site, including the church which she restored and lives in.

7. Joan Tellez: Ms. Tellez is believed to be well-versed in the local history of activities and man-made structures in the vicinity of the proposed mine and may be called to provide her historical knowledge of the area, mine subsidence problems and knowledge of certain structures near the proposed mine site.

Fishers reserve the right to call any and all “will call” and “may call” witnesses listed by any other party, as well as any witness necessary for impeachment and/or rebuttal purposes and any witness necessary to lay foundation for exhibits. Fishers further reserve the right to supplement this list of witnesses prior to the contested case hearing in this matter.

II. EXHIBITS

Fishers may offer the documents and materials listed on *Exhibit A* attached hereto. In addition to the exhibits identified in *Exhibit A*, Fishers reserve the right to use, rely upon

and offer into evidence or the record any and all exhibits listed by any other party, and they reserve the right to make sub-exhibits (i.e. A-1, A-2) of particular or individual documents contained in multi-page exhibits. The Fishers also reserve the right to list all documents associated with any exhibit if such listing is necessary to establish the admissibility of any of the offered exhibits. In addition, the Fishers reserve the right to enlarge all or portions of certain exhibits for demonstrative purposes, or to present them by use of an electronic media system for ease of viewing by the Council. Fishers reserve the right to list or use rebuttal and impeachment exhibits and additional or supplemental exhibits as may be appropriate.

Fishers also reserve the right to list, use and offer any portion of the Brook Mine Plan which has already been made a part of the record in this matter. By "listing" or identifying any exhibit as a potential exhibit in the case, Fishers in no way waive any objections to these exhibits and reserve all potential objections.

DATED this 17th day of May, 2017.

YONKEE & TONER, LLP



Jay A. Gilbertz, WSB # 6-3087

Attorney for Objectors

Mary Brezik-Fisher and David Fisher

319 West Dow Street

P.O. Box 6288

Sheridan, WY 82801

Telephone: (307) 674-7451

Telefax: (307) 672-6250

CERTIFICATE OF SERVICE

I, Jay A. Gilbertz, hereby certify that on the 17th day of May, 2017, I served a true and correct copy of the above and foregoing by *electronic transmission*, duly addressed as follows:

Andrew Kuhlmann
Asst. Attorney General
andrew.kuhlmann@wyo.gov
james.larock@wyo.gov

Todd Parfitt
Director, DEQ
Todd.Parfitt@wyo.gov

Alan Edwards
Deputy Director, DEQ
Alan.edwards@wyo.gov

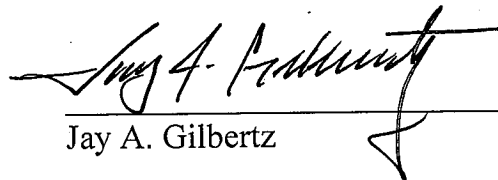
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Clayton H. Gregersen
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Jim Ruby
Executive Officer, EQC
jim.ruby@wyo.gov



Jay A. Gilbertz

FISHERS' CONTESTED CASE HEARING EXHIBITS

EXHIBIT A

- FISHER 1: Aerial Photo of portion of Tongue River Valley
- FISHER 2: Photos of Fishers' house and property
- 2-A: Old Photo of House
 - 2-B: Old Rock Barn Structure
 - 2-C: Initials carved on rock barn: L.S. July 26, '13
 - 2-D: Old Rock Building/Dwelling on Property
 - 2-E: Fisher house at time of purchase in 1996
 - 2-F: Phase 1 depiction of house remodel
 - 2-G: Current depiction of Fisher house
 - 2-H: Mature fruit trees and pine trees with new fence
 - 2-I: Landscape photo of Fisher property from frontage road
 - 2-J: Landscape photo of Fisher property from I-90
- FISHER 3: Photos of Boceks' property adjacent to Fishers
- 3-A: Bocek property view along frontage road
 - 3-B: Bocek property view along frontage road
- FISHER 4: Photo of Mine Subsidence in Sheridan County
- FISHER 5: Letter from Todd Parfitt dated 01/30/17 denying informal conference
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- FISHER 26: Fishers' Objection Lt. dated 01/22/17 (already filed and part of record)

From: Jim Ruby
To: [Shannon Anderson](#)
Subject: Re: Exhibit 90
Date: Wednesday, May 17, 2017 2:02:45 PM

Thanks. Have a great day and I will see you on Monday.

On Wed, May 17, 2017 at 1:56 PM, Shannon Anderson <sanderson@powderriverbasin.org> wrote:

Hi Jim – thanks for checking. It came that way through the Tongue River Water Users and I didn't have time to correct it. They just had duplicate blank pages in there for the printing. It is just two pages of text. Thanks, Shannon

Shannon Anderson

Powder River Basin Resource Council

934 N. Main St., Sheridan, WY 82801

[307-672-5809](tel:307-672-5809) cell: [307-763-0995](tel:307-763-0995)

sanderson@powderriverbasin.org

Join us at www.powderriverbasin.org

Follow us at <https://twitter.com/PRBResCouncil>

From: Jim Ruby [mailto:jim.ruby@wyo.gov]
Sent: Wednesday, May 17, 2017 1:53 PM
To: Shannon Anderson
Subject: Exhibit 90

Hi Shannon:

As I was going through and checking to make sure exhibits were getting loaded I found on your Exhibit 90 that the second page is unreadable. Is it supposed to be that way. If it isn't than call Joe and we can help get it fixed.

Jim

E-Mail to and from me, in connection with the transaction of public business, is subject to the Wyoming Public Records Act and may be disclosed to third parties.

From: Shannon Anderson
To: [Jim Ruby](#)
Subject: RE: Exhibit 90
Date: Wednesday, May 17, 2017 1:56:50 PM

Hi Jim – thanks for checking. It came that way through the Tongue River Water Users and I didn't have time to correct it. They just had duplicate blank pages in there for the printing. It is just two pages of text. Thanks, Shannon

Shannon Anderson
Powder River Basin Resource Council
934 N. Main St., Sheridan, WY 82801
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sanderson@powderriverbasin.org
Join us at www.powderriverbasin.org
Follow us at <https://twitter.com/PRBResCouncil>

From: Jim Ruby [mailto:jim.ruby@wyo.gov]
Sent: Wednesday, May 17, 2017 1:53 PM
To: Shannon Anderson
Subject: Exhibit 90

Hi Shannon:

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Jim

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From: Jim Ruby
To: [Shannon Anderson](#)
Subject: Exhibit 90
Date: Wednesday, May 17, 2017 1:52:55 PM

Hi Shannon:

As I was going through and checking to make sure exhibits were getting loaded I found on your Exhibit 90 that the second page is unreadable. Is it supposed to be that way. If it isn't than call Joe and we can help get it fixed.

Jim

From: Shannon Anderson
To: [Clayton Gregersen](#); [Andrew Kuhlmann](#); james.larock@wyo.gov; [Thomas Sansonetti](#); [Isaac Sutphin](#); [Jeffrey S. Pope](#); [Jay Gilbertz](#); [Lynne Boomgaarden](#)
Cc: [Jim Ruby](#)
Subject: EQC Dkt. 17-4802 Powder River Basin Resource Council pre-hearing filings
Date: Wednesday, May 17, 2017 11:57:10 AM
Attachments: [2017 5-17 pre-hearing memorandum ExA.pdf](#)
[2017 5-17 pre-hearing memorandum.pdf](#)
[2017 5-17 pre-hearing memorandum ExB.pdf](#)

Counsel, attached is our pre-hearing memo and associated attachments with listed witnesses and exhibits. I'll be adding you to the dropbox with exhibits shortly.

Happy reading,
Shannon

Shannon Anderson
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Join us at www.powderriverbasin.org
Follow us at <https://twitter.com/PRBResCouncil>

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**BEFORE THE ENVIRONMENTAL QUALITY COUNCIL
STATE OF WYOMING**

IN RE BROOK MINE APPLICATION)
)
 TFN 6 2-025) **DOCKET 17-4802**

POWDER RIVER BASIN RESOURCE COUNCIL'S PRE-HEARING MEMORANDUM
EXHIBIT A: WITNESS DESIGNATION LIST

The Powder River Basin Resource Council (“Resource Council”) hereby designates the following witnesses for the hearing to be held May 22-26, 2017 in the above-captioned proceedings.

WILL CALL WITNESSES

The following witnesses will be called by the Resource Council at the hearing:

- 1) **Anton Bocek**: Mr. Bocek is a nearby landowner. He will provide testimony about his interests and concerns related to the mine permit application and the proposed coal mining operations. Mr. Bocek is a member of the Resource Council.
- 2) **John Buyok**: Mr. Buyok is a nearby landowner. He will provide testimony about his interests and concerns related to the mine permit application and the proposed coal mining operations. Mr. Buyok is a member of the Resource Council.
- 3) **Gillian Malone**: Ms. Malone is a member of the public that engages in recreational activities in the areas nearby to the proposed mining operations. She will provide testimony about her interests and concerns related to the mine permit application and the proposed coal mining

operations. Ms. Malone may also provide brief testimony on the Resource Council's organizational interests and concerns related to the permit application and proposed mining operations. Ms. Malone is a founding member of the Resource Council and currently serves on its Board of Directors.

4) **Gennaro Marino Ph.D., P.E., D.GE**: Dr. Marino will present expert testimony on the subsidence risk presented by the mine and reclamation plan and will identify deficiencies in the permit application related to subsidence evaluation and prevention. Dr. Marino will present the opinions discussed in his expert report and other opinions related to subsidence he has drawn from reviewing the permit application and associated materials.

5) **Mickel Wireman M.S., P.G.**: Mr. Wireman will provide expert opinions related to the hydrology aspects of the permit application, including the sufficiency of the water monitoring plan, impacts to the hydrologic balance within and outside the permit area, and impacts to alluvium and alluvial valley floors. A copy of the report he has prepared is provided in the Resource Council's exhibits and it was also previously filed in this docket as a part of the Resource Council's expert witness disclosures. Mr. Wireman has let his Wyoming geologist registration lapse, but he has associated with Wyoming professional geologist Sue Ann Spencer for the purposes of his testimony and report. Ms. Spencer has provided a certification that she has reviewed Mr. Wireman's findings in his report and that she finds them compliant with the standards of a professional geologist in Wyoming. Ms. Spencer will also be present at the hearing and will be called jointly with Mr. Wireman to provide limited testimony to this effect as well.

MAY CALL WITNESSES

The Resource Council may call the following witnesses at the hearing:

1) **Brooke Collins**: Ms. Collins lives nearby to the proposed mining operations. She has not yet decided whether she wants to provide testimony at the hearing, but she is likely to be called as a witness. If she does testify, she will provide testimony about her interests and concerns related to the mine permit application and the proposed coal mining operations.

2) **Carol Bilbrough**: Ms. Bilbrough is the LQD Program Manager for DEQ. If not called by DEQ, the Resource Council may call her as a witness to testify as to the oversight and management of the permitting process and regarding DEQ practices and procedures.

3) **Niles Veal**: Mr. Veal is a contractor to Brook. If not called by Brook, the Resource Council may call him as a witness to testify to his personal knowledge about permit preparation work, work to address DEQ identified deficiencies, and regarding his interactions with nearby landowners and residents.

The Resource Council reserves the right to call additional witnesses necessary for impeachment or foundation purposes.

Shannon Anderson (Wyo. Bar # 6-4402)
Powder River Basin Resource Council
934 N. Main St., Sheridan, WY 82801
(307) 672-5809
sanderson@powderriverbasin.org

**BEFORE THE ENVIRONMENTAL QUALITY COUNCIL
STATE OF WYOMING**

IN RE BROOK MINE APPLICATION)
)
 TFN 6 2-025) **DOCKET 17-4802**

POWDER RIVER BASIN RESOURCE COUNCIL'S PRE-HEARING MEMORANDUM

The Powder River Basin Resource Council (“Resource Council”) hereby files its Pre-hearing Memorandum in the above captioned proceedings. This memorandum summarizes the legal and technical issues before the Environmental Quality Council (“EQC” or “Council”) and presents the Resource Council’s issues of law and fact to be considered at the hearing.

BACKGROUND

In response to the required public notice, the Resource Council timely filed objections to Brook Mining Company, LLC’s (“Brook” or “applicant” or “company”) coal mine permit application. The objections included a variety of issues ranging from incomplete and inaccurate information in the permit application to more technical issues such as hydrology and subsidence concerns, blasting mitigation, and reclamation bond requirements.

Members of the Resource Council also timely filed objections to Brook's coal mine permit application. John and Vanessa Buyok, Gillian Malone, Sadie Clarendon, Jane Buyok, Anton Bocek, Joan Tellez, Wendy Condrat, and William Bensel filed objections. Resource Council member Phil Klebba and his family will also be impacted by mining operations as

discussed below.¹ Their objections and concerns demonstrate that the Resource Council, through representation of its members, is an “interested person” within the meaning of the Wyoming Environmental Quality Act’s Section 406(k) and a “person with an interest which is or may be adversely affected” within the meaning of Ch.1 § 17(b) of DEQ’s Rules of Practice and Procedure. Members Anton Bocek, John Buyok, and Gillian Malone will also provide testimony at the hearing to reinforce the Resource Council’s “interest.”

ISSUES OF FACT AND LAW

In this case, the evidence presented at the hearing will demonstrate:

1. According to the Wyoming Environmental Quality Act (“WEQA” or “Act”), “No mining operation may be commenced or conducted on land for which there is not in effect a valid mining permit to which the operator possesses the rights.” W.S. § 35-11-405(a).
2. Requirements for coal mine permit applications as well as grounds for approval and denial are governed by Section 406 of the Wyoming Environmental Quality Act, along with the Land Quality Division’s Rule and Regulations implementing the Environmental Quality Act.
3. Specifically, “The applicant for a surface coal mining permit has the burden of establishing that his application is in compliance with this act and all applicable state laws.” *Id.* at § 406(n).
4. DEQ regulations require information in a permit application to be “current” . . . “accurate and complete.” DEQ Land Quality Division Rules and Regulations, Ch. 2 § 1. The mine plan must include “[a] complete operations plan proposed to be conducted during the life of the mine” with an accurate estimate of “the number of acres that will be affected annually” and

¹ The Klebbas did not file objections as they were not aware of the opportunity to do so at the time given they live outside of ½ mile from the permit boundary and were thus not provided notice. They subsequently became aware of the proposed project from reading an article in the Casper Star Tribune.

the “anticipated annual and total production by tonnage.” *Id.* at § 5(a)(i). As discussed in Sections 1 and 2 of the Resource Council’s objections, the mine plan and permit application at issue here does not contain current, accurate, or complete information and does not meet the requirements of DEQ’s regulations.

5. For instance, the permit application fails to:

(a) Identify and include all incidental facilities: For the purposes of delineating a permit boundary, the WEQA defines “Surface coal mining operation” to mean surface lands where surface coal mining activities take place and/or surface lands “incident” to underground coal mining activities. The operation shall also “include any adjacent land the use of which is incidental to any of these activities, all lands affected by the construction of new roads or the improvement or use of existing roads to gain access to the site of these activities and for haulage . . . processing areas, shipping areas and other areas upon which are sited structures, facilities or other property or materials on the surface, resulting from or incident to these activities.” W.S. § 35-11-103(e)(xx). The permit application fails to include associated facilities necessary to get coal to a point of sale, including necessary roads and facilities, and does not include the coal “processing areas” associated with the proposed industrial park and manufacturing facilities, which are incidental to the mine.²

(b) Include accurate and complete information about coal storage and hauling: Similarly, the mine plan lacks the necessary specificity about the locations of coal storage in the

² The Resource Council became aware of the industrial park processing facilities only after our petition was filed with the EQC. However, exhibits filed by the Resource Council, produced by DEQ and the company during discovery, demonstrate DEQ was fully aware of these facilities *before* the permit went to public notice and therefore they should have been considered by the agency in its review.

pit, in the permit area, or off- site and does not identify any associated facilities (e.g. silos, stockpiles, etc.) that will be necessary for storage.

(c) Accurately estimate the amount of coal that will be mined: Accurately estimating the amount of coal to be mined is a critical component of any mine plan as it establishes the time period of the permit and the level of anticipated impacts, provides transparency to the public, and allows for enforcement by DEQ once a permit is issued. In the case of this mine, the company is asking DEQ to let them figure it out as they go along. At times, company representatives have stated publicly that they anticipate mining 6-8 million tons per year, and at other times they anticipate mining a small amount of coal. The project keeps shifting, but meanwhile the estimated annual production in the mine plan has not been updated since 2013. The only thing that is clear is the mine plan is not really a plan at all and is too vague or unrealistic to be considered a basis to anticipate impacts or to allow DEQ to adequately enforce the facility should a permit be granted.

Moreover, for years four and five, estimated annual production exceeds the two million ton per year limit established in the company's air quality permit.³ Additionally, should production ramp up to 6-8 million tons per year as has been stated publicly by company representatives, this would surely exceed the two million ton per year limit.

(d) Include accurate and complete information about traffic and road impacts: The mine plan does not estimate truck traffic, disclose any impacts to public or private roads used by the public, and does not include a traffic plan, even though according to the mine plan those "plans" have been "previously formulated." Additionally, the mine will directly impact

³ The air quality permit is mentioned in the mine plan but says the permit will be submitted. It does not disclose that there is a final air quality permit that was received *prior* the coal mining permit going to public notice nor does it explain any limits of on coal production that result from the air quality permit.

Slater Creek Road, a county road that is the only access point for the property of Resource Council member Phil Klebba and his family at the Klebba Ranch. The mine plan does not provide the required buffer around Slater Creek Road or alternatively it does not provide a plan, approved by the Sheridan County Board of County Commissioners, to move the road.

(e) Include accurate and complete information about impacts to conservation easements and recreation access: The mine plan does not discuss or disclose any impacts to conservation easements and recreation access or recreation facilities within or adjacent to the permit area. The Wyoming Game & Fish Department has agreements with landowners for “walk-in” areas for hunting and recreation, areas which are likely to be impacted by mining operations. Additionally, the associated “industrial park” is located within eyesight of the Kleenburn Recreation Area, an area frequently used for recreation activities, including fishing, picnicking, and hiking.

(f) Include accurate and complete information about blasting activities and projected impacts: The mine plan does not describe how frequently blasting will occur and in what amounts, and it does not provide sufficient restrictions to ensure that the requirements of Chapter 6 of the Land Quality Regulations will be met during mining and that offsite impacts resulting from pollution and seismicity will be prevented. Blasting is of particular concern to members of the public who recreate in the area given pollution and other impacts and to nearby homeowners and landowners whose structures could be impacted from blasting activities.

(g) Include information on MSHA requirements and permits: The subsidence control plan references a “ground control plan” that is approved by MSHA and is commonly included for DEQ review in a subsidence control plan. However, no such plan exists. DEQ regulations require “[a] list identifying the Mine Safety and Health Administration identification

number for all mine facilities that require MSHA approval and licenses, permits or approvals needed by the application to conduct the proposed operation, whether and when they have been issued, the issuing authority, and the steps to be taken to comply with the requirements” as part of the permit application. Ch. 2 § 2(a)(v). This information is not included in the permit application and responses to discovery questions raised by the Resource Council confirm that the company has yet to apply for any MSHA permits.

(h) Include accurate and complete information about measures to prevent and remediate coal fires: The mine plan does not include an appropriate plan to prevent and/or put out coal fires or properly treat or dispose of other “materials constituting a fire, health, or safety hazard.” W.S. § 35-11-406(b)(ix). Coal fires are of particular concern to nearby landowners given the history of coal fires in the area and the presence of active coal fires *within* the permit boundary, a fact confirmed by the company’s answers to Resource Council discovery questions.

6. As our hydrogeology expert will explain at the hearing, the mining and reclamation plan does not include “a plan to minimize the disturbances to the prevailing hydrologic balance at the minesite and in associated offsite areas and to the quality and quantity of water in surface and ground water systems both during and after mining operations and during reclamation” as required by the WEQA and corresponding DEQ regulations. W.S. § 35-11-406(b)(xvii). DEQ must deny the permit application *unless* it is sufficiently demonstrated that the proposed operations will not materially damage the hydrologic balance outside the permit area and will minimize disturbances to the prevailing hydrologic balance at the minesite. Again, the applicant has the burden of proof to demonstrate these requirements have been met.

7. Our hydrology expert will also explain that the mine plan does not sufficiently include “[t]he methods of diverting surface water around the affected lands where necessary to

effectively control pollution or unnecessary erosion” as required by the Environmental Quality Act and associated DEQ regulations. W.S. 35-11-406(b)(xv).

8. As discussed in the expert report submitted with the Resource Council’s objections, and as will be explained by our expert at the hearing, the subsidence control plan does not achieve its required objective: to control and prevent subsidence at the mine site. The expert report concludes that “There is a serious risk of surface subsidence from roof collapse in the proposed mining area.”

9. Nearby landowners are particularly concerned about subsidence because it can “constitute[] a public nuisance or endanger[] the public and safety” of local landowners. W.S. § 35-11-406(m)(vii). As discussed above, the company is proposing to mine under at least one county road and will be mining in close proximity to numerous home and business structures, agricultural lands and associated structures, water wells, and public rights of way. Subsidence also has implications for whether the “reclamation plan can accomplish reclamation as required.” *Id.* at § 406(n)(ii). And it has implications for creating damage to the hydrologic balance both within the permit area and in outside areas. *Id.* at §§ 406(b)(xvii), 406(n)(iii).

10. The company has an obligation to prevent subsidence. DEQ Land Quality Regulations require a coal mining permit application with underground components, such as this permit application, to include “[e]xcept for areas where planned subsidence is projected to be used, measures to be taken in the mine to prevent or minimize subsidence, including backfilling of voids and leaving areas in which no coal is removed.” Ch. 7 § 1(a)(v)(C). Additionally, “[u]nderground mining activities shall be planned and conducted so as to prevent subsidence from causing material damage to structure, the land surface, and groundwater resources.” Ch. 2 § 2(b)(iii).

11. Further, “Auger mining may be limited or prohibited to minimize disturbance of the prevailing hydrologic balance, unwarranted subsidence, or if the prohibition is necessary to maximize the utilization, recoverability or conservation of the solid fuel resources.” Ch. 5 § 6(b). This regulation is critical because at various times in the mine plan, the company refers to highwall mining as auger mining or “a similar method to auger mining.” The law treats auger mining distinctly given the particular impacts that can result from this type of mining.

12. The permit application includes a commitment to replace only adjudicated water wells that will be impacted by mining activities. This is not sufficient to meet the requirements of the law and the application must be amended to include all permitted wells. In answers to discovery questions, DEQ has admitted that this amendment needs to be made, however there is no process for that to happen until *after* the hearing.

13. Additionally, before a coal mining permit can be approved, DEQ must make certain findings related to the application’s compliance with the WEQA and DEQ regulations. *Id.* at §§ 406(n)(i)-(vii).

14. These findings have not yet been made, and DEQ has stated, in answers to the Resource Council and other parties through discovery questions, that these findings will only be made *after* the hearing.

15. Specifically, as our hydrogeologist expert will explain at the hearing, the proposed mine has not “been designed to prevent material damage to the hydrologic balance outside the permit area” as required by the WEQA and corresponding DEQ regulations. *Id.* at § 406(n)(iii). Regardless, DEQ is unable to make this finding until its Cumulative Hydrologic

Impacts Assessment (“CHIA”) is completed, and DEQ has stated in answers to discovery questions that its CHIA will only be completed *after* the hearing.⁴

16. Likewise, DEQ is unable to make a finding that “the proposed operation would . . . [n]ot interrupt, discontinue, or preclude farming on alluvial valley floors” as required by Section 406(n)(v). Land Quality Rules and Regulations, Ch. 12 § 1(a)(i). This finding cannot be made because, as the Resource Council’s hearing exhibits will show, DEQ has not finished mapping potentially affected alluvial valley floors, and because, as our hydrogeologist expert will explain, the alluvial valley floors that have been mapped will in fact be impacted by proposed mining activities.

17. Requirements for mine reclamation bonds are governed by Section 417 of the WEQA and corresponding DEQ regulations. The proposed reclamation bond does not cover the *entire* cost of surface and water reclamation, as required to be posted *prior* to any mining on the site. *See* W.S. § 35-11-417(c)(i) (the bond should equal the “cost of reclaiming the affected land disturbed” . . . “plus the administrator’s estimate of the additional cost to the state of bringing in personnel and equipment should the operator fail or the site be abandoned.”). In particular, the proposed bond amount does not include the costs of certain contingency factors, costs that are necessary *regardless* of the scope or extent of mining activities.

18. Like the necessary findings of Section 406(n), DEQ has stated that it has yet to calculate the bond amount and will only do *after* the hearing. This prevents adequate public review and comment on the proposed bond amount, which is a critical requirement of the law.

⁴ The CHIA is not separately subject to public notice and comment provisions under the WEQA or SMCRA. However, it is normal practice for the CHIA to be finalized at the time of public notice to afford the public an opportunity to review and comment as part of any public process on the permit application, such as this hearing.

19. DEQ cannot lawfully issue a permit for the Brook Mine unless the application demonstrates that it meets the requirements of applicable laws and regulations *and* unless DEQ makes the required findings of Section 406(n) and ensures receipt of a sufficient reclamation bond posted in the amount calculated *by DEQ* pursuant to Section 417.

REQUEST FOR RELIEF

20. Given the deficiencies in the permit application described above, and the absence of specific regulatory findings necessary to issue a permit, the permit applicant has not met its burden to demonstrate that the application “is in compliance with this act and all applicable state laws” pursuant to Section 406(n).

21. As a result, the EQC must find that the permit application should be denied. The EQC should issue findings of fact and law and “a decision on the application” to correspond with a recommendation to the DEQ to deny the permit application within fifteen days of receipt of the EQC’s decision pursuant to Section 406(p).

22. At the very least, the EQC should (1) make a finding that DEQ cannot issue the permit until all required findings under Section 406(n) are made, until the reclamation bond amount is calculated pursuant to Section 417, and until deficiencies in the permit application raised by the parties are addressed; (2) stay proceedings until DEQ makes its required findings; and (3) allow the parties’ time to respond and present additional evidence and testimony, as needed. Staying proceedings will afford DEQ time beyond the statutorily provided 15 days to finalize the CHIA and other needed documents and reviews and to respond to public comments and make any needed changes to the permit.

WITNESSES

The Resource Council has named witnesses in the attached Witness Designation List (Exhibit A). The Resource Council reserves the right to call any of the witnesses identified by any other parties, or other witnesses necessary for foundation and impeachment purposes.

EXHIBITS

The Resource Council has identified exhibits in the attached Exhibit List (Exhibit B). The Resource Council reserves the right to use any of these exhibits, or exhibits designated by another party, as demonstrative exhibits at the hearing. The Resource Council also reserves the right to designate additional exhibits necessary for foundation or impeachment purposes.

Dated this 17th day of May, 2017.

/s/ Shannon Anderson
Shannon Anderson
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CERTIFICATE OF SERVICE

I hereby certify that on May 17, 2017, I served a copy of the foregoing **PRE-HEARING MEMORANDUM** on the following parties by electronic mail, and through the EQC's electronic filing system, which will send a notice of electronic filing to all counsel and parties of record.

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**BEFORE THE ENVIRONMENTAL QUALITY COUNCIL
STATE OF WYOMING**

IN RE BROOK MINE APPLICATION)
)
 TFN 6 2-025) DOCKET 17-4802

POWDER RIVER BASIN RESOURCE COUNCIL'S PRE-HEARING MEMORANDUM
EXHIBIT B: EXHIBIT DESIGNATION LIST

The Powder River Basin Resource Council (“Resource Council”) hereby designates the following exhibits for the hearing to be held May 22-26, 2017 in the above-captioned proceedings.

EXHIBITS

- | | |
|-------------|--|
| Exhibit 1: | Objections to the coal mining permit application filed by the Resource Council |
| Exhibit 2: | Objections to the coal mining permit application filed by Anton Bocek |
| Exhibit 3: | Objections to the coal mining permit application filed by Jane Buyok |
| Exhibit 4: | Objections to the coal mining permit application filed by Joan Tellez |
| Exhibit 5: | Objections to the coal mining permit application filed by John & Vanessa Buyok |
| Exhibit 6: | Objections to the coal mining permit application filed by Bill Bense |
| Exhibit 7: | Objections to the coal mining permit application filed by Wendy Condrat |
| Exhibit 8: | Objections to the coal mining permit application filed by Sadie Clarendon |
| Exhibit 9: | Objections to the coal mining permit application filed by Gillian Malone |
| Exhibit 10: | Objections to the coal mining permit application filed by Brooke Collins |

Exhibit 11: Power Point presentation prepared by Dr. Marino to use as a demonstrative exhibit at the hearing. This exhibit was finalized May 16, 2017 and may be slightly adjusted prior to the hearing.

Exhibits 12-14: Dr. Marino's expert report separated into three files given size. This report was attached to the Resource Council's objections to the coal mining permit application filed with DEQ on January 27, 2017 and was also provided as a part of the expert disclosures filed in the docket to these proceedings.

Exhibit 15: A copy of the Academy of Geo-Professionals website providing information on board certified experts. The website copied is <http://www.geopprofessionals.org/board-certified-experts/diplomate-categories>

Exhibit 16: A copy of the website listing board certified experts certified by the Academy of Geo-Professionals, including Dr. Marino. The website copied is <http://www.geopprofessionals.org/board-certified-experts/diplomate-directory>

Exhibit 17: Mr. Wireman's expert report provided as a part of the expert disclosures filed in the docket to these proceedings.

Exhibit 18: CVs of experts Mr. Wireman and Dr. Marino

Exhibit 19: Biography of Sue Ann Spencer from her company's website

Exhibit 20: Attachments included with the Resource Council's objections to the coal mining permit application filed with DEQ on January 27, 2017.

Exhibit 21: Brook's answers to the Fishers to discovery questions

Exhibit 22: Brook's answers to the Resource Council to discovery questions

Exhibit 23: DEQ's answers to the Fishers to discovery questions

Exhibit 24: DEQ's answers to the Resource Council to discovery questions

Exhibit 25: Brook Mine Overview from Ramaco, downloaded from their website, dated May 2014

Exhibit 26: February 27, 2017 Sheridan Press article entitled "Ramaco Carbon plans research, manufacturing facility for coal products"

Exhibit 27: April 4, 2017 NPR radio story from the program *Here and Now* entitled "Coal CEO Looks For New Ways To Revive the Industry"

Exhibit 28: October 16, 2015 electronic mail correspondence¹ between Thomas Sansonetti and Jeffrey Pope (Brook attorneys) and Andrew Kuhlmann (DEQ attorney) regarding the proposed “Sheridan Industrial Park” associated with the proposed coal mine permit

Exhibit 29: Air Quality Permit No. P0019732 issued to Wyoming Ramaco Coal Company, LLC on January 25, 2016

Exhibit 30: June 04, 2015 electronic mail correspondence between BJ Kristiansen and Deanna Hill

Exhibit 31: January 31, 2017 electronic mail correspondence between Mark Rogaczewski and Jim Ruby discussing “proposed mining operations within 100 feet of a public road”

Exhibit 32: May 19, 2014 electronic mail correspondence between Justin Douthat and Jeff Barron regarding “surface mining beneath the county road”

Exhibit 33: May 15, 2014 electronic mail correspondence between Jeff Barron and Justin Douthat regarding an “affected county road”

Exhibit 34: July 25, 2014 Google Earth picture identifying a county road to relocate

Exhibit 35: February 24, 2016 DEQ alluvial valley floor determinations for the Brook Mine

Exhibit 36: February 08, 2016 electronic mail correspondence between BJ Kristiansen and Jeff Barron regarding alluvial valley floor determinations

Exhibit 37: December 14, 2016 electronic mail correspondence between BJ Kristiansen and Shannon Anderson regarding alluvial valley floor determinations

Exhibit 38-40: April 3, 2009 Contract Documents and Specifications for AML Project 17J, Carney Mine Subsidence Mitigation, submitted by PHC Reclamation, Inc. (This exhibit was split into thirds given its size)²

Exhibit 41: May 12, 2010 AML Contract Processing Slip, submitted by Earth Work Solutions, for the AML Project 17J, Carney Mine project

Exhibit 42: May 12, 2009 information associated with AML Project 17J, Carney Mine Rd. Subsidence Abatement

¹ The electronic mail correspondence included on this list was produced by DEQ or Brook through discovery in these proceedings.

² All of the AML files included on this list were either produced by DEQ through discovery in these proceedings or found on the DEQ AML database.

- Exhibit 43: April 22, 2008 information associated with AML Project 17J, Acme No. 1 fire subsidence
- Exhibit 44: June 29, 2015 information associated with AML Project 17J, Old Monarch Mine subsidence
- Exhibit 45: December 12, 2016 electronic mail correspondence between Melissa Bautz and BJ Kristiansen regarding AML's study of subsidence risk in the permit area
- Exhibit 46: Figure 5 from the Sheridan County Land Use Plan documenting "hazardous areas" including "Known Subsidence Area[s]"
- Exhibit 47: USGS Paper 1164, "Effects of Coal Mine Subsidence in the Sheridan, Wyoming Area," 1980
- Exhibit 48: October 07, 2015 electronic mail correspondence between BJ Kristiansen and Jeff Barron regarding removal of a rail loadout facility from the permit application
- Exhibit 49: July 9, 2014 electronic mail correspondence between Ron Destefano and Jeff Barron regarding coal handling facilities and an associated spur track for review by WYDOT
- Exhibit 50: Handwritten notes from Mark Rogaczewski produced by DEQ during discovery discussing a conversation with Jeff Barron regarding rail facilities inside the permit boundary
- Exhibit 51: June 07, 2015³ electronic mail correspondence between Brian Wood and Doug Emme regarding subsidence control plans/highwall mining requirements (and snow)
- Exhibit 52: October 21, 2015 electronic mail correspondence between Mark Rogaczewski and David Schellinger regarding overburden sampling analyses
- Exhibit 53: July 05, 2016 electronic mail correspondence between Matthew Kunze and BJ Kristiansen regarding CHIA requirements
- Exhibit 54: June 03, 2014 electronic mail correspondence between Matthew Kunze and BJ Kristiansen the permit and the CHIA
- Exhibit 55: December 10, 2015 electronic mail correspondence between BJ Kristiansen and LQD staff regarding the permit application review
- Exhibit 56: February 23, 2015 electronic mail correspondence between BJ Kristiansen and Andrew Kuhlmann regarding permit application review

³ Although this is the final date for the email, as produced by DEQ, given the conversation about the snow in response to the previous email dated Nov. 10, 2014, it is possible that the correct date would be in the Nov. 2014 date range.

- Exhibit 57: March 16, 2015 electronic mail correspondence between BJ Kristiansen and Andrew Kuhlmann regarding permit application review
- Exhibit 58: January 12, 2016 electronic mail correspondence between BJ Kristiansen and Andrew Kuhlmann regarding permit application review
- Exhibit 59: January 14, 2016 electronic mail correspondence between BJ Kristiansen and Andrew Kuhlmann regarding permit application review
- Exhibit 60: November 17, 2015 electronic mail correspondence between BJ Kristiansen and Kyle Wendtland regarding permit application review
- Exhibit 61: March 24, 2016 electronic mail correspondence between BJ Kristiansen, Kyle Wendtland, and Alan Edwards regarding permit application review
- Exhibit 62: April 12, 2016 electronic mail correspondence between Alan Edwards and Mark Rogaczewski (copying Kyle Wendtland) regarding permit application review
- Exhibit 63: March 15, 2017 letter from Tony Wendtland to Joan Tellez
- Exhibit 64: April 5, 2000 OSMRE Directive 882, Handbook for Calculation of Reclamation Bond Amounts
- Exhibit 65: Brook draft reclamation bond calculation, provided through discovery
- Exhibit 66: Another draft of a reclamation bond calculation
- Exhibit 67: Brook Mine 2015 Bond
- Exhibit 68: OSMRE 2013 Annual Evaluation Report for the Wyoming Regulatory Program, October 2013, excerpts related to evaluation of blasting
- Exhibit 69: Supplemental OSMRE Special Study Topic Oversight Report on Blasting in Wyoming for the 2013 Annual Evaluation Report for the Wyoming Regulatory Program
- Exhibit 70: April 12, 2016 electronic mail correspondence between Mark Rogaczewski and Kyle Wendtland regarding a meeting request from the Resource Council
- Exhibit 71: April 27, 2016 electronic mail correspondence between Kyle Wendtland and Alan Edwards regarding a meeting request from the Resource Council
- Exhibit 72: April 7, 2017 presentation from Atlas Carbon on Advanced Carbon Products given in Gillette, Wyoming
- Exhibit 73: Photo of Resource Council member home in the area, provided by John Buyok

Exhibit 74: Photo of recreation use on the Tongue River near the mine site provided by the Sheridan Community Land Trust

Exhibit 75-78: Photos of the Bocek property, provided by Joan Tellez and Anton Bocek

Exhibit 79: Aerial photo of the area of Resource Council member properties, provided by the Sheridan Community Land Trust

Exhibit 80-82: Photos of subsidence on the Buyok property, provided by John Buyok

Exhibit 83: Game & Fish Department Map of Sheridan County Walk-in Areas 1, 6, and 7

Exhibit 84: OSMRE subsidence course training materials provided by OSMRE to DEQ

Exhibit 85: March 6, 2017 electronic mail correspondence between Jeff Barron and BJ Kristiansen regarding a Sheridan County Board of County Commissioners meeting

Exhibit 86: July 22, 2014 information on AML project 17.32 relating to the Buyok-Monarch mine fire

Exhibit 87: July 31, 2014 information on AML project 17.32 for mine subsidence abatement at the Carney Mine

Exhibit 88: September 2, 2016 information on AML project 17.32 for portal closures at the Acme, Kooi, and Old Monarch Mines

Exhibit 89: Jan 30, 2017 electronic mail correspondence between LQD staff, Todd Parfitt, and Alan Edwards

Exhibit 90: Letter from the Tongue River Water Users regarding concerns with the proposed mine

From: Carri Svec
To: andrew.kuhlmann@wyo.gov; james.larock@wyo.gov; "Alan Edwards"; "Todd Parfitt"; Shannon Anderson; jgilbertz@yonkeetoner.com; jim.ruby@wyo.gov; Lynne Boomgaarden; Clayton Gregersen
Cc: [Isaac Sutphin](#); [Jeffrey S. Pope](#); [Thomas Sansonetti](#); [Carri Svec](#)
Subject: EQC Docket 17-4802 - Brook Mine's Prehearing Memo
Date: Wednesday, May 17, 2017 11:40:54 AM
Attachments: [2017-05-17 Brook's Prehearing Memorandum.pdf](#)

Attached is Brook's prehearing memo. The Brook's exhibits will be sent shortly via link from BDS.

Thanks,

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CONFIDENTIALITY NOTICE: This message is confidential and may be privileged. If you believe that this email has been sent to you in error, please reply to the sender that you received the message in error; then please delete this e-mail. Thank you.

This case will require the Council to exercise the latter authority. The Council will decide whether Brook's permit application submitted to DEQ meets the statutes and regulations governing surface coal mining permit applications in Wyoming. The Council, however, will not, and cannot, decide every facet of how Brook will operate its mine. The permitting process is merely the first step for a company that wants to operate in Wyoming because the applicable

statutes and regulations are performance based standards. *See* Wyo. Stat. Ann. § 35-11-402(a)(xii) (citing performance based standards); Wyoming Administrative Rules Department of Environmental Quality Land Quality – Coal, Ch. 4, § 1 (setting forth “performance standards applicable to all coal mining operations.”) Even after DEQ grants a permit, many steps remain before Brook can extract coal from the ground. As a result, the Act limits what a company must do to receive a permit to mine coal.

The Act requires that a permit applicant prove it has complied with the Act and all applicable state laws. Wyo. Stat. Ann. § 35-11-406(n). The applicant must show that the application is “accurate and complete, “the reclamation plan can accomplish reclamation as required by this act,” “the proposed operation has been designed to prevent material damage to the hydrologic balance outside the permit area,” and that the area proposed to be mined is not designated as unsuitable for surface coal mining. *Id.* at (n)(i)-(iv). The permit applicant must also show that its operations would:

(A) Not interrupt, discontinue, or preclude farming on alluvial valley floors that are irrigated or naturally subirrigated, but, excluding undeveloped range lands which are not significant to farming on said alluvial valley floors and those lands as to which the administrator finds that if the farming that will be interrupted, discontinued or precluded is of such small acreage as to be of negligible impact on the farm's agricultural production; or

(B) Not materially damage the quantity or quality of water in surface or underground water systems that supply these alluvial valley floors. Paragraph (n)(v) of this section shall not affect those surface coal mining operations which in the year preceding August 3, 1977, produced coal in commercial quantities, and were located within or adjacent to alluvial valley floors or had obtained specific permit approval by the administrator to conduct surface coal mining operations within said alluvial valley floors. If coal deposits are precluded from being mined by this paragraph, the administrator shall certify to the secretary of the interior that the coal owner or lessee may be eligible for participation in a coal

exchange program pursuant to section 510(b)(5) of P.L. 95-87 [30 U.S.C. § 1260(b)(5)].

Id. at (n)(v). If the applicant intends to mine in an area around “prime farmland,” it must show that it can restore that area “to equivalent or higher levels of yield as nonmined prime farmland in the surrounding area under equivalent levels of management and can meet the soil reconstruction standards of this act and the regulations promulgated pursuant thereto.” *Id.* at (n)(vi). Finally, the applicant must show that it has not violated any laws for any other surface coal mines it operates. *Id.* at (n)(vii).

Here, Brook has proven to DEQ that its permit application meets all of these requirements as demonstrated by DEQ deeming the application technically adequate and suitable for publication. As a result, the Council should evaluate only whether any objector has shown that Brook has failed to carry its burden of proof on specific issues in their objections. It is neither appropriate nor within the Council’s authority to re-evaluate every item in Brook’s permit application. The Council should also weigh against any objections that DEQ spent three years evaluating the technical adequacy of Brook’s permit application.

II. The Relevant Analysis

The case requires the Council to compare two sets of documents: 1) Brook’s Application for Permit to Mine Coal; and 2) Wyoming statutes and regulations. DEQ has already conducted this comparison for over three years and concluded that Brook met all requirements set forth in the applicable statutes and regulations. To assist the Council in its findings, the table below summarizes the applicable statutes and regulations and how Brook’s permit application met them.

Statute/Regulation	Permit
<p>Wyo. Stat. § 35-11-406(a)(i), (ii), (iii), (vi)(B), (vi)(C), (vi)(D), (x)(xi): permit is in writing and submitted to the administrator stating name and address for all responsible for operations; applicant has the right and power to mine from the land; sworn statement that reclamation bond has not been forfeited and statements made in the application are true and correct; name of the lands; approximate acreage; nearest town/city; minerals to be mined; and estimated dates of commencement/termination of proposed permit</p>	<p>Adjudication File – Brook submitted its permit application pursuant to Wyoming statutes. The rights of Ramaco to access the surface and extract its minerals are guaranteed by the deeds provided in the Adjudication File. See pages Adjudication S.W.C.-1 thru 7, Adjudication Ram-1 thru 8 and Adjudication B.H.C.-1 thru 3. The deeds give Ramaco the right to access surface for the purpose of its coal operations. Specific list of lands covered under these surface rights can be found at Adjudication B.H.C.-1 thru 2. Adjudication Exhibit 1 shows surface ownership and rights, the Permit Area, the half-mile buffer to the Permit Area and structures within the half-mile buffer</p>
<p>Wyoming Administrative Rules Department of Environmental Quality Land Quality – Coal, Ch. 2, § 4(a)(xv); Ch. 3 § 2(b); and Ch. 12 § 1(a)(i): presence/absence of an alluvial valley floor within permit area; demonstrate presence of alluvial valley floors within permit area and affected areas affected by proposed mining operation; and Administrator shall make a determination in writing as to the existence and extent of an alluvial valley floor within permit area. Said determination shall be included in the permit application and available for public notice</p>	<p>Appendix D11 – Alluvial Valley Floors. Alluvial monitor wells have been placed and determinations of prior AVF’s were used by Brook. Adjudication Exhibit 1 shows surface ownership and rights in the Permit Area, the half-mile buffer to the Permit Area and structures within the half-mile buffer. Section D11.1 describes the streams that were evaluated and their subsequent AVF declarations by WDEQ. Memo dated January 7, 2016 for the AVF determination of any AVF along Slater Creek within the permit and half-mile buffer. WDEQ, LQD made previous determinations of AVF’s along the Tongue River, Goose Creek and Hidden water creek in association with the Big Horn Coal permit to mine application, these determinations were included in the Brook Mine permit to mine application</p>
<p>Wyo. Stat. § 35-11-406(b)(xvii) and 35-11-415(b)(xi): blasting plan shall outline procedures and standards that surface coal mine operator will meet; explosives are used only in accordance with state and federal law</p> <p>Wyoming Administrative Rules Department of Environmental Quality Land Quality – Coal,</p>	<p>MP.14 – Blasting Plan and Schedule –Specific blasting schedule will be republished and redistributed at least every 12 months. This schedule will be published in the local newspaper between 30 and 60 days prior to any blasting operation in which more than 5 pounds of explosives is to be detonated. A copy will also be sent to each residence within one-half mile of the</p>

Statute/Regulation	Permit
Ch. 6, § 3(a): at least 30 days but not more than 60 days before beginning blasting program, blasting schedule shall be published in a newspaper of general circulation and by mail to each residence or owner within one-half mile of the blasting sites. Residents/owners within one-half mile shall be notified of the manner for requesting a preblasting survey	blasting area. Additionally, on the request of a resident or owner of a man-made dwelling or structure that is located within one-half mile of any part of the area covered under the term of the permit, the applicant or permittee shall conduct a preblasting survey. See also Addendum MP-7 for blasting plan and supplemental materials
Wyoming Administrative Rules Department of Environmental Quality Land Quality – Coal, Ch. 15, § 5 and Ch. 4, § 2(d)(x): The Administrator may recommend release 60% of the bond when the operator completes backfilling, regrading, topsoil replacement, recontouring and drainage control; after vegetation whose species composition is commensurate with that of the seed mix; and revegetation performance standards	Bond Release – Exhibit RP.5-2 depicts the schedule of topsoil replacement and RP.14 contains an excerpt from the Reclamation Plan
Wyoming Administrative Rules Department of Environmental Quality Land Quality – Coal, Ch. 2, § 6 (b)(ii)(C): where permanent water impoundments are proposed, contour maps and cross-sections showing slope conditions around the impoundment and anticipated high/low postmining water level	Final Hydrologic Restoration – Brook will construct post-mine impoundments with landowner's consent as well as compliance with WDEQ/LQD bond release criteria and Wyoming State Engineer's approval
Wyoming Administrative Rules Department of Environmental Quality Land Quality – Coal, Ch. 2, § 4 (a)(x): operator shall submit a description of the presence of substances or any other factor that will influence mining/reclamation activities; topsoil/subsoil information, including soil survey of affected lands	Table D5.3-2 – Geology and Overburden Assessment describes the moisture content of the coal and is an intrinsic property of the coal. This should not be confused with the saturation of the coal aquifer which would depict water occupying the fractures with the coal as depicted. See Addendum D5-5 for description of overburden, roof and floor samples
Wyo. Stat. § 35-11-406(a)(vii): description of land shall include vegetative cover, annual rainfall, winds, wildlife, surface waters, adjudicated water rights Wyoming Administrative Rules Department of Environmental Quality Land Quality – Coal,	Appendix D2 and D3 – History. Addendum D3-1 of the mine permit application contains the Cultural Resources Memorandum for Cultural Resources Policy dated October 2, 2012, stating that WDEQ, LQD will no longer require cultural or paleontological surveys to be conducted or included in mine

Statute/Regulation	Permit
<p>Ch. 2, § 4(a)(i), (ii): description of affected lands within permit area, major past and present uses of permit area and adjacent lands; capability of land prior to mining to support uses, giving consideration to soil and foundation characteristics, topography, vegetative history and land's history of previous mining</p>	<p>permit applications for lands where the surface and mineral ownership are held privately</p>
<p>Wyo. Stat. § 35-11-406(a)(vii): description of land shall include vegetative cover, annual rainfall, winds, wildlife, surface waters, adjudicated water rights</p> <p>Wyoming Administrative Rules Department of Environmental Quality Land Quality – Coal, Ch. 2, § 4(a)(i), (ii): description of affected lands within permit area, major past and present uses of permit area and adjacent lands; capability of land prior to mining to support uses, giving consideration to soil and foundation characteristics, topography, vegetative history and land's history of previous mining</p>	<p>Appendix D1 – Land Use. To prevent adverse impacts to water, air, fish and wildlife. MP.6 discusses surface water and groundwater. MP.6.3 provides the plan to mitigate impacts to surface water and groundwater. Surface water will be monitored according to MP.7.1. Brook will mitigate impacts to groundwater according to MP.6.3.2. Brook will monitor groundwater according to MP.7.2. Brook has committed to the air quality protection plan at MP.16.3 and the air quality permit previously submitted. MP.18 outlines Brook's plan to minimize adverse impacts on fish and wildlife, see Wildlife Monitoring Plan at Addendum MP-8. A raptor and migratory birds of high federal interest mitigation plan is in place at Addendum MP-9</p>
<p>Wyo. Stat. § 35-11-406(b)(xvi), (xvii): source, quantity, quality of water to be used in mining operations; plan to minimize disturbances to prevailing hydrologic balance and quality and quantity of water in surface and ground water systems, both during and after mining operations and during reclamation activities</p> <p>Wyoming Administrative Rules Department of Environmental Quality Land Quality – Coal, Ch. 2, § 5(a)(ix), (x), (xi): plan and timetable for control and treatment of surface water and groundwater; probable hydrologic consequences (PHC); and an evaluation of impact of proposed mining activities that may result in contamination, diminution or interruption of quality/quantity of groundwater or surface water</p>	<p>MP.5.8 – Mine pit dewatering. Any water rights affected by Brook Mine's dewatering process, will be replaced with a water source of similar quantity and quality. MP.5 discusses multiple ways that surface water and groundwater will be controlled to prevent pollution and negative impacts to surface waters. Exhibit MP.5-1 shows the hydrologic control plan, MP.7-1 discusses the operational surface water monitoring program</p>

Statute/Regulation	Permit
<p>Wyo. Stat. § 35-11-406(b)(v), (xvii): 1 or more maps of reclamation and mining on appropriate scale showing location/extent of proposed affected lands, public highways, dwelling, surface draining area and all utility and other easements; a blasting plan outlining procedures and standards</p> <p>Wyoming Administrative Rules Department of Environmental Quality Land Quality – Coal, Ch. 2, § 5(a)(i), § 6(a): complete operations plan proposed to be conducted during life of mine; reclamation plan shall include schedule for each major step which coordinates with operator’s reclamation plan with the mining plan</p>	<p>MP.4.6 – Mining Methods Schedules and Assessments. Sampling procedures will be performed at the Brook Mine to ensure plant growth media does not come in contact with overburden materials that exhibit toxic-forming or acid potential characteristics. Sampling data will include at least one drill hole every 40 acres and the data will be included in Brook Mine’s annual reports. Before Brook stockpiles topsoil, it will ensure at least a 4-foot separation from unsuitable materials.</p> <p>Table 4.9-2 of Mine Plan Addendum MP-3 reports pit inflows by year. The year of pit inflow can be attributed to specific pits. As stated in MP.8, water use at the Brook Mine is anticipated to be less than a typical mine in the Powder River Basin.</p> <p>Table MP.8-1 provides the estimated quantity of water to be used by specific use. Table MP.8-1 also provides a summary of the quantity of water to be obtained from each water source</p>
<p>Wyoming Administrative Rules Department of Environmental Quality Land Quality – Coal, Ch. 2, § 5(a)(i): complete operations plan proposed to be conducted during life of mine</p>	<p>MP.1.2.1 – Mining Operations. The Permit to Mine provides typical and safe operation procedures of a highwall mine. The coal will be temporarily stored in the pit or directly hauled off site. The coal will be loaded into trucks. Mine Plan Section MP.22 discusses dual permitted areas. Table MP.1-2 shows annual coal production. Tables MP.1-3 and MP.1-4 list equipment utilized on the mine site</p>
<p>Wyo. Stat. § 35-11-406(b)(xvi): source, quantity, quality of water to be used in mining operations</p> <p>Wyoming Administrative Rules Department of Environmental Quality Land Quality – Coal, Ch. 2, § 2(a)(v)(A)(I)(1), § 5(a)(ix), § 6(b)(v): a list identifying MSHA identification number for all mine facilities that require MSHA approval and licenses, permits obtained from State Engineer, water quality information, detailed plan with maps and cross-sections, for</p>	<p>MP.7.1 – Operational Monitoring Program. Brook commits to monitor surface water. Should Big Horn No. 2 Reservoir and Big Horn No. 14 Reservoir be disturbed at the same time, the commitments of Section MP.7.1 ensure that the Brook will monitor surface water downstream of operations regardless. MP-48 states, “Existing gage sites operated by the USGS will be used to monitor surface water upstream of the planned mine facilities in Section 15 T 57N, R84W, as well as downstream of the</p>

Statute/Regulation	Permit
<p>construction/operation of mine capable of causing or contributing to pollution of surface or groundwater; plan to ensure protection of quantity/quality/rights to surface water and groundwater within and adjacent to permit area; descriptions/maps/cross-sections of surface water diversion systems</p>	<p>mine facilities on the Tongue River.” The locations of existing alluvial monitor wells and the locations of proposed alluvial monitor wells are shown on Exhibit MP.7-1. The locations of monitor wells have been strategically placed at locations up gradient and down gradient of portions of the operation. The purpose of up gradient and down gradient wells is to monitor alluvial conditions upstream as baseline conditions and to monitor alluvial conditions downstream of operations to observe and compare any differences</p>
<p>Wyo. Stat. § 35-11-406(b)(i), (ii), (vii): application shall include mine/reclamation plan, disturbance/change of lands to be affected, proposed future use, present/proposed use of land, surface gradient plans suitable for proposed use after reclamation is complete and method of accomplishment; contour map on same scale as reclamation map showing proposed approximate contours of affected area after completion of reclamation</p>	<p>RP.2 – Post Mining Land Use. Brook’s post-mining land uses include grazing land, industrial purposes and recreational land and developed water resources. Supporting pillars from highwall mining will be left in the ground to prevent subsidence, Addendum MP-6</p>
<p>Wyo. Stat. § 35-11-406(b)(xviii): plan to minimize disturbances to prevailing hydrologic balance at minesite and associated offsite areas to quality/quantity of water in surface and groundwater systems, during and after mining operation and during reclamation activities</p> <p>Wyoming Administrative Rules Department of Environmental Quality Land Quality – Coal, Ch. 2, § 5(a)(ix), (x): plan to ensure protection of quantity and quality of, and rights to, surface water and groundwater within and adjacent to permit area; probable hydrologic consequences determination. PHC shall be based on baseline hydrologic, geologic and other information collected from permit application and may include data statistically representative of site</p>	<p>MP.6 – Probable Hydrologic Impacts. Mitigation measures will include sediment control structures and ditches to collect surface runoff and alternative sediment control measures. Surface water monitoring program (MP.7.1) will provide the effect mining operations have on surface waters.</p> <p>Appropriate discharge permits will be obtained prior to water discharge. Groundwater wells will be replaced pursuant to Wyo. Stat. § 35-11-406(b)(xii)</p> <p>Addendum MP-6 – Subsidence Control Plan. Subsidence calculations were made based on information currently known. If subsidence is discovered in relation to Brook Mine activities, RAMACO commits to remediation of the subsidence</p>
<p>Wyoming Administrative Rules Department of</p>	<p>MP.19 – Protection of Historical and</p>

Statute/Regulation	Permit
Environmental Quality Land Quality – Coal, Ch. 12, § 1(a)(ix)(c): Division shall update information upon verification of additional information submitted or discovered during permit review	Archaeological Resources. Brook is committed to protecting historic and archaeological resources within the permit boundary. LQD no longer requires cultural or paleontological surveys to be conducted or included in mine permit applications for lands where the surface and mineral ownership are held privately
Wyoming Administrative Rules Department of Environmental Quality Land Quality – Coal, Ch. 2, § 5(a)(ii): narrative and map of permit area identifying location of existing structures, use and maintenance and plan for removal, if required	MP.6 – Protection of Other Resources, Structures and Surfaces. Surface water will be monitored according to MP.7.1 to determine the effects the mine has on surface water. Brook will utilize sediment impoundments and alternative sediment control measures. Brook will monitor groundwater. Dust will be controlled with watering and/or dust suppressants. Baghouses will be employed in the facility area where coal is transferred or crushed. Brook’s air quality permit application demonstrates the use of best available control technology on all emission sources and National Ambient Air Quality Standards will be maintained during operation. Public access to Brook Mine will be limited to the main access route to ensure public safety
Wyo. Stat. §§ 35-11-410(c), 35-11-417(c)(ii): upon receipt of annual report, administrator shall conduct an inspection of the site operation, inspection shall be part of permittee’s annual report WDEQ/LQD Guideline Number 12	RP.16 – Reclamation Costs. Reclamation cost estimates will be included in the Annual Report and will be adjusted manually. The current bond is made for only the first year of disturbance. The reclamation bond will be revised annually as disturbance changes. As mining disturbance increases, so will the bond amount.
Wyo. Stat. § 35-11-406(b)(v): 1 or more maps of reclamation and mining on appropriate scale showing location/extent of proposed affected lands, public highways, dwelling, surface draining area and all utility and other easements Wyoming Administrative Rules Department of Environmental Quality Land Quality – Coal, Ch. 2, § 4(a)(xvi), Ch. 4, § 2(i), (iii), (iv): description of lands affected within permit area, how lands will be affected during the	MP.3.1.1 – Road, Railroads and Other Transport Systems. Public roads are maintained with public funds and substantially used by the public. Interstate 90 will be protected from blasting pursuant to the Blasting Plan. Interstate 90 will be protected from fugitive dust pursuant to the Air Quality Protection Plan. There are currently no planned railways associated with Brook Mine

Statute/Regulation	Permit
course of mining operation with location of manmade features including roads, railroads, public/private rights-of-way/easements	
<p>Wyo. Stat. § 35-11-406(a)(vii): description of land shall include vegetative cover, annual rainfall, winds, wildlife, surface waters, adjudicated water rights</p> <p>Wyoming Administrative Rules Department of Environmental Quality Land Quality – Coal, Ch. 2, § 4(a)(xi)(A): list and describe name/location for present surface water in and adjacent to proposed permit area</p>	<p>Appendix D6 – Surface Water Hydrology. Monitoring stations were set on Slater Creek and Hidden Water Creek when said creeks enter and leave the proposed permit boundary, for upstream and downstream locations. No water quality data for Hidden Water Creek because the stream was dry during baseline monitoring activities. Baseline water quality data for Tongue River and Goose Creek were obtained from USGS gaging stations</p>
Wyoming Administrative Rules Department of Environmental Quality Land Quality – Coal, Ch. 2, § 6(b): reclamation plan shall include time schedule for each major step, coordinate reclamation plan with mining plan to facilitate reclamation at earliest possible time	RP.5-1 – Topsoil Replacement. The final year of topsoil replacement will be year 16 of the Brook Mine life-of-mine
Wyoming Administrative Rules Department of Environmental Quality Land Quality – Coal, Ch. 2, § 5(a)(ix), (x), (xi): plan to ensure protection of quantity/quality of and rights to surface water and ground water within and adjacent to permit area; probable hydrologic consequences determination (PHC), PHC determination based on baseline hydrologic, geologic information; and evaluation of impact of proposed mining activities that may result in contamination, diminution or interruption of quality/quantity of groundwater or surface water within and adjacent to permit area	Table MP.8-1 – Water Use. This table estimates the quantity of water to be used by specific use and also provides a summary of the quantity of water to be obtained from each water source
Wyoming Administrative Rules Department of Environmental Quality Land Quality – Coal, Ch. 2, § 5(a)(viii), Ch. 4, § 2(r)(i): plan to minimize impacts to fish, wildlife and related environmental values within and adjacent to permit area; use best technology to minimize disturbance and adverse impacts on fish, wildlife and related environmental values	Exhibit MP.16-1 – Wildlife Monitoring. No sage grouse leks were located within the Permit Area or within one mile of the Permit Area. If leks become established within one mile of the Permit Area, they will be checked three times from April through early May. In subsequent years, they will be monitored annually on three mornings

III. The Council should not consider irrelevant issues.

The Council has the duty to review the permit application, DEQ's review of the permit application, and the relevant law to decide if Brook met the legal requirements for a permit to mine coal. The Council need do nothing more, despite the objecting parties request to do so.

The Objectors plan to attack Brook's permit application on grounds irrelevant under the Act. For example, Objectors have designated experts to attack Brook's permit application as it pertains to potential issues relating to hydrology, geology, subsidence and safety that could occur years into mining. But the permit application process does not ask Brook to predict every possibility that may occur during mining. Instead, the application process requires Brook to meet minimum standards to begin mining, which includes planning for certain issues that may arise during mining. If Brook met those standards, the Council must find that the DEQ Director should grant Brook a permit subject to DEQ oversight. That oversight means that should Brook cause environmental problems at any time in the future, Brook, DEQ, and the public can confront the problem then. The Council, however, does not need to tackle these issues or worry about a process for dealing with these issues at this time.

The Council should also beware of attempts to alter the burden of proof standard in this case. The Objectors have stated that Brook bears the burden of proof under the Act and must meet all of the requirements of the Act. The Council should hold the Objectors to the same standard, meaning that the Objectors must demonstrate an issue with Brook's permit application that the Act requires. The Council should not entertain objections unrelated to the requirements of the Act.

IV. Witness List

A. Will Call

Jeff Barron, P.E., WWC Engineering, 1849 Terra Avenue, Sheridan, Wyoming. Mr. Barron will testify regarding the entire permit application, including Brook's Mine and Reclamation plans, the development of Brook's Mine and Reclamation plans, and the communications with landowners about Brook's plan to mitigate any damage. Mr. Barron will testify about the history of mining in the Sheridan Coal Fields, the history of Brook's coal ownership. Mr. Barron will also testify about the authenticity of key documents in this case. Mr. Barron will also testify about the opinions contained in his expert report and Brook's expert disclosures. Finally, Mr. Barron may rebut claims made by any of the Objectors.

B. May Call

Kenneth Woodring, Ramaco Senior Operations Advisor of Ramaco Wyoming Coal Company, LLC, Georgia. Mr. Woodring may testify regarding the Mine Plan as well as the coal quantity and quality. Mr. Woodring may testify about Ramaco's commitment to working with landowners in the area to minimize the overall impact of the Brook Mine. Mr. Woodring may also testify regarding Brook's operations following permit approval. Mr. Woodring may rebut claims about the details of the Brook Mine and Reclamation Plans.

Niles Veal may testify regarding the Adjudication File; work performed on behalf of Brook and interactions he's had with the Objectors to this proceeding. Mr. Veal may also provide rebuttal testimony.

V. Exhibit List

The exhibits Brook intends to introduce at the hearing in the above-referenced matter are identified as follows:

Exhibit No.	Exhibit Description
Brook 1	2014/01/06 BJ Kristiansen email re. underground mine subsidence control plan
Brook 2	2017/04/11 BJ Kristiansen email re. TIPS class from 2015 (w/attachments)
Brook 3	Environmental Quality Act
Brook 4	DEQ/LQD Guideline 12 – Standardized Reclamation Performance Bond Format and Cost Calculation Methods
Brook 5 (a-i)	DEQ/LQD Current Rules and Regulations relating to Coal
Brook 6 (a-b)	DEQ Correspondence File (produced by DEQ, 1st and 2nd Supplement)
Brook 7	Round 1 Comment/Response
Brook 8	Round 2 Comment/Response
Brook 9	Round 3 Comment/Response
Brook 10 (a-d)	MSHA checklists for highwall miner ground control plan
Brook 11	Excerpt from Jill Morrison Deposition
Brook 12	2016-11-22 BJ Kristensen email to Shannon Anderson and Jill Morrison re. info still missing from Brook Mine permit (Morrison Dep. Ex. 9)
Brook 13	DEQ 12/14 and 12/2/16 AVS checks
	Rebuttal Exhibits
	Demonstrative Exhibits
	Impeachment Exhibits

Brook reserves the right to designate additional exhibits, necessary for impeachment or rebuttal. Brook also reserves the right to use any exhibits offered by any other party.

DATED: May 17, 2017.


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ATTORNEYS FOR PERMIT APPLICANT
 BROOK MINING COMPANY, LLC

CERTIFICATE OF SERVICE

I hereby certify that on May 17, 2017, I served a true and correct copy of the foregoing by email to the following:

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From: Clayton Gregersen
To: [Andrew Kuhlmann](#); james.larock@wyo.gov; [Alan Edwards](#); [Thomas Sansonetti](#); [Isaac Sutphin](#); [Jeffrey S. Pope](#); bpcharlie@wbaccess.net; todd.parfitt@wyo.gov; [Shannon Anderson](#); [Jay Gilbertz](#); [Jim Ruby](#)
Cc: [Lynne Boomgaarden](#); [Jenny Wacker](#); [Wendy Drake](#); [Carri Svec](#); [Jan Kelley](#)
Subject: EQC Dkt 17-4802 Big Horn's Hearing Exhibits (email 2 of 2)
Date: Wednesday, May 17, 2017 11:23:16 AM
Attachments: [Attachments.html](#)

All,

Please find attached Big Horn's exhibits, BHC 1 through BHC 19, from its Exhibit List disclosed in my prior email and filed with the EQC today. I tried to send these via normal attachment but the delivery failed based on the size.

This production will also constitute any necessary supplemental production of Big Horn's discovery responses as to documents and information that Big Horn believes support its objections in this matter as well as documents that Big Horn may use to support its position.

Again, please let me know if you have any issues accessing the documents or questions/concerns.

ShareFile Attachments		Expires June 16, 2017
BHC 1.pdf		430.8 KB
BHC 10.pdf		2.5 MB
BHC 11.pdf		1.3 MB
BHC 12.pdf		1.2 MB
BHC 13.pdf		595.7 KB
BHC 14.pdf		913.1 KB
BHC 15.pdf		8.5 MB
BHC 16.pdf		821.5 KB
BHC 17.pdf		261.9 KB
BHC 18.pdf		1.4 MB

BHC 19.pdf	451.4 KB
BHC 2.pdf	781.5 KB
BHC 3.pdf	3.2 MB
BHC 4.pdf	693.5 KB
BHC 5.pdf	288.3 KB
BHC 6.pdf	1020.6 KB
BHC 7.pdf	243.7 KB
BHC 8.pdf	160.9 KB
BHC 9.pdf	1.9 MB

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From: Jim Ruby
To: [Jay Gilbertz](#); [Jeffrey S. Pope \(JSPOpe@hollandhart.com\)](#); [Isaac Sutphin](#); [andrew kuhlmann](#); [Lynne Boomgaarden](#); [Shannon Anderson](#); [James LaRock](#)
Bcc: [Dave Bagley](#)
Subject: Letter from Dr. Bagley
Date: Wednesday, May 17, 2017 11:20:13 AM
Attachments: [Letter to Parties 5-17-17.pdf](#)

Dear Counsel:

Attached is a letter to all of you from Dr. Bagley. If you have any questions feel free to send me an email that includes all parties.

Thanks.

Jim



THE STATE OF WYOMING
ENVIRONMENTAL QUALITY COUNCIL

Matt Mead,
Governor

Dr. David Bagley
Chairman

Meghan Lally
Vice-Chairman

Rich Fairservis
Secretary

Deb Baumer
Nick Agopian
Tim Flitner
Megan Degenfelder

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May 17, 2017

In Re Brook LLC. 17-4802

Dear Counsel:

Following the motion hearing held on March 22, 2017, it was discovered that Council member Deb Baumer mistakenly participated in the hearing. Under Wyo. Stat. Ann. § 35-11-111(a), no State employee, other than employees of institutions of higher education, shall be a member of the Council. Although Ms. Baumer was no longer the director of the Office of Administrative Hearings, she did not officially retire until May 1, 2017. As a result, she was still a State employee.

Notwithstanding Ms. Baumer's participation at the March 22, 2017 hearing, the Council, after consultation with the Attorney General's office, has concluded that the decisions made on March 22 are valid. Those decisions will be approved in writing either at the upcoming contested case hearing or as part of the final order in this matter.

Because Ms. Baumer is no longer a State employee, she is a current member of the Council and will participate in this matter.

I look forward to seeing you May 22, 2017 in Sheridan for the final hearing in this case.

Sincerely,

David M. Bagley, Ph.D., P.E.
Chair, Environmental Quality Council

From: Clayton Gregersen
To: [Andrew Kuhlmann](#); james.larock@wyo.gov; [Alan Edwards](#); [Thomas Sansonetti](#); [Isaac Sutphin](#); [Jeffrey S. Pope](#); bpcharlie@wbaccess.net; todd.parfitt@wyo.gov; [Shannon Anderson](#); [Jay Gilbertz](#); [Jim Ruby](#)
Cc: [Lynne Boomgaarden](#); [Jenny Wacker](#); [Wendy Drake](#); [Carri Svec](#); [Jan Kelley](#)
Subject: EQC Dkt. 17-4802 Big Horn"s Prehearing Memorandum (email 1 of 2)
Date: Wednesday, May 17, 2017 11:16:40 AM
Attachments: [BHC Prehearing Memo 5-17.pdf](#)
[BHC Exhibit B Prehearing Memo.PDF](#)
[BHC Exhibit A Prehearing Memo.PDF](#)
[BHC EXHIBIT C Prehearing Memo.PDF](#)

All,

Please find the attached Big Horn Coal Company's Prehearing Memorandum along with Exhibits A,B and C thereto filed with the EQC today. Because all of the exhibits do not fit in a single email, I will be sending a follow-up email with copies of the exhibits shortly. Let me know if you have any questions or concerns.

Thank you.

Clayton Gregersen
Crowley Fleck PLLP
490 N 31st Street, Suite 500 TW2
Billings, MT 59101
406-255-7335
cgregersen@crowleyfleck.com

Notice: This electronic mail transmission may constitute an attorney-client communication that is privileged at law. It is not intended for transmission to, or receipt by, any unauthorized persons. If you have received this electronic mail transmission in error, please delete it from your system without copying it, and notify the sender by reply e-mail or by calling Crowley Fleck PLLP, so that our address record can be corrected.

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lboomgaarden@crowleyfleck.com
cgregersen@crowleyfleck.com

ATTORNEY FOR OBJECTORS
BIG HORN COAL COMPANY

**BEFORE THE ENVIRONMENTAL QUALITY COUNCIL
STATE OF WYOMING**

IN RE BROOK MINE APPLICATION)
	) Docket Nos. 17-4802, 17-
	) 4803, and 17-4804
TFN 6 2-025	) (Consolidated)

BIG HORN COAL COMPANY'S PREHEARING MEMORANDUM

Big Horn Coal Company ("Big Horn"), by and through its undersigned counsel of record, hereby submits this Prehearing Memorandum. This contested case hearing, set for May 22, 2017, arises from the surface coal mining permit application of Brook Mining Company, LLC ("Brook") and the numerous objections thereto.

Brook has prepared and submitted a mine permit application pursuant to Wyo. Stat. Ann. § 35-11-406. After published notice of the application, numerous parties filed objections raising concerns with the proposed mine and the significant

deficiencies in the permit's mine and reclamation plans. Many of these objections pertain to the lack of critical detail and analysis in the permit application, which in turn raises various questions and concerns regarding possible irreparable harm to surface and ground water, land and human health and safety. This hearing followed.

This Prehearing Memorandum provides a summary of the single issue before the Environmental Quality Council ("Council") and Big Horn's position on that issue.

ISSUE BEFORE THE COUNCIL

Pursuant to Wyo. Stat. Ann. § 35-11-406, the sole issue before the Council is **whether Brook can affirmatively establish**: that its permit application (1) is in compliance with the Wyoming Environmental Quality Act, Wyo. Stat. Ann. §§ 35-11-101, *et seq.* (the "Act") and all applicable state laws; and (2) satisfies, among others, the following requirements:

- (i) The application is accurate and complete;
- (ii) The reclamation plan can accomplish reclamation as required by this act;
- (iii) The proposed operation has been designed to prevent material damage to the hydrologic balance outside the permit area.

Wyo. Stat. Ann. § 35-11-406(n)(i)-(iii).

A copy of Wyo. Stat. Ann. § 35-11-406 and several relevant provisions of the Wyoming Department of Environmental Quality ("DEQ"), Land Quality

Division (“LQD”) rules and regulations are attached hereto as **Exhibit A** and **Exhibit B**, respectively. Big Horn respectfully requests that the Council take official (judicial) notice of the statutes and rules attached hereto as **Exhibit A** and **Exhibit B** in order to avoid the need to offer proof of each statutory or regulatory provision and thereby expedite the hearing proceedings.

FACTS

Brook proposes to highwall mine through a previously mined area consisting of unconsolidated, saturated and reclaimed backfill material immediately next to the Tongue River, the largest perennial stream in northeast Wyoming, and in the vicinity of the confluence of the Tongue River and Goose Creek (the TR-1 area). The maps provided in Brook’s permit application indicate that mining and surface disturbance will occur less than 100 feet from the bank of the Tongue River; however, the maps are inconsistent as to just how close to the river mining will occur. Typically, the area in a mine plan shown to be affected by operations extends well beyond the actual mining panel and surface disturbance boundaries. Brook’s permit application, however, inexplicably indicates that the affected area near the Tongue River corresponds exactly to the boundary of the mine panel and the surface disturbance boundary.

The strata overlying the coal Brook intends to mine in the TR-1 area is known to include a thick layer of unconsolidated, saturated backfill that exhibits shallow groundwater elevations of 20 feet or less, and is hydrologically connected to and

directly recharged by, both the Tongue River and Goose Creek. The permit application further proposes to highwall mine through areas containing known and documented underground coal seam fires that have been burning for over 100 years. Contrary to Brook's assumptions in its mine and reclamation plan, the proposed mine area does not exhibit the characteristics of native overburden strata. Absent an analysis of the proposed highwall mining operations using sufficient site-specific data, these factors alone present significant risk of irreparable harm to surface and ground water, land, and human health and safety.

SUMMARY

Big Horn's concerns with Brook's permit application involve the clear lack of sampling, data analysis, and even acknowledgement of critical site specific conditions at the proposed mine site. Brook's mine and reclamation plans fail to adequately study highwall mining through previously mined materials and the associated, foreseeable hydrologic risks, particularly given the historical coal seam fires and subsidence events in this area, all of which will undoubtedly impact mining operations, land and water conditions, reclamation efforts, and Big Horn's current and future operations. Big Horn is primarily concerned with Brook's proposal to conduct its mining operations through previously mined and saturated backfill material on lands within Big Horn's own mine permit boundary, absent adequate site specific data or meaningful study or analysis.

Big Horn does not seek to deny Brook the opportunity to mine coal in Sheridan County. As a mining entity itself, Big Horn supports this industry and the ability to mine within the bounds of Wyoming law. However, the lack of site-specific data and analysis in Brook's permit application is unprecedented and falls far short of satisfying industry standards, DEQ's typical expectations, and the requirements under the Act and DEQ/LQD Rules and Regulations. As a landowner and a party owning infrastructure, coal rights and reclamation responsibilities within and directly adjacent to the Brook permit boundary, and as a party who may mine coal adjacent to Brook's proposed operations; Big Horn is entitled to expect that Brook's permit application will comply with the applicable laws and that it will not be approved unless Brook demonstrates required studies have been completed and appropriate, site-specific precautions have been taken to protect Big Horn's property and the environment from irreparable environmental harm.

In response to the numerous objections, Brook has stubbornly advocated a "Shoot First, Ask Questions Later" approach. According to Brook, obtaining a permit application and the right to begin mining requires very little detail, and Brook can rely on subsequent, more detailed operation plans, permit amendments and DEQ oversight to address any problems or issues when they are encountered. This is not the Wild West. The Wyoming legislature enacted the original version of the Wyoming Environmental Quality Act over forty years ago, in 1973. The land quality provisions in the Act established new permit and licensing requirements, and

mining and reclamation standards. Wyoming's efforts in this area even proceeded Congress' enactment of SMCRA. *See Belle Fourche Pipeline Co. v. State*, 766 P.2d 537, 544-48 (Wyo. 1988). Brook's approach undermines the very intent of these long-standing laws and the purpose of the permitting process. While DEQ oversight and future permit amendments provide flexibility to address *unforeseen* issues and risks during operations, this operational flexibility does not exonerate the requirements in state law to gather sufficient site-specific data to assess the probable environmental risks of the proposed operations *prior to DEQ approving a permit*.

The law is clear. Brook must submit a mine and reclamation plan, with supporting site-specific data and studies addressing the probable cumulative hydrologic impacts to both surface and groundwater, within and outside of the permit area, as well as the ability to reclaim the affected lands after mining operations are concluded. Without sufficient site-specific data and analysis, neither Brook, DEQ, nor any interested party can assess the potential impacts from the mining operations or the ability to reclaim or otherwise mitigate these impacts.

As a result, Brook has failed to gather and analyze sufficient data to assess pre-mine site conditions and foreseeable risks of environmental harm, and cannot meet its burden under Wyo. Stat. Ann. § 35-11-406(n).

LEGAL DISCUSSION

For the reasons stated herein, and reserving the right to raise additional arguments supported by relevant evidence at hearing, the evidence at hearing will establish that:

1. Brook cannot affirmatively establish that its permit application is in *compliance with all applicable state laws*, and *is accurate and complete* pursuant to Wyo. Stat. Ann. § 35-11-406(n)(i) because the mine and reclamation plans do not contain:

- a. A plan “consistent with the objectives and purposes of this act and of the rules and regulations promulgated” that addresses “the extent to which the mining operation will disturb or change the lands to be affected, the proposed future use or uses and the plan whereby the operator will reclaim the affected lands to the proposed future use or uses,” Wyo. Stat. Ann. § 35-11-406(b);¹
- b. A plan “to minimize the disturbances to the prevailing hydrologic balance at the minesite and in associated offsite areas and to the quality and quantity of water in surface and ground water systems both during and after mining operations and during reclamation,” Wyo. Stat. Ann. § 35-11-406(b)(xviii);²
- c. Adequate “procedures proposed to avoid constituting a public nuisance, endangering the public safety, human or animal life, property, wildlife and plant life in or adjacent to the permit area,” Wyo. Stat. Ann. § 35-11-406(b)(xiii);³

¹ See Exhibit A.

² See Exhibit A.

³ See Exhibit A.

- d. Adequate “methods of reclamation for effective control of erosion, siltation, and pollution of affected stream channels and stream banks by the mining operations,” Wyo. Stat. Ann. § 35-11-406(b)(xv);⁴
- e. Studies determining the projected result of the proposed mining and reclamation operations, both on and off of the mine site, as to the expected change to “the quantity or quality of the surface and groundwater; the surface and groundwater flow, timing and availability, the surface and groundwater quality under seasonal flow conditions, including dissolved and suspended solids; the effect of acid-forming and toxic material on surface and groundwaters; the stream channel conditions; and the aquatic habitat in the permit area and other affected areas” all in “*sufficient detail to enable the Administrator to determine the probable cumulative hydrologic impacts on surface and groundwater systems* including the impacts resulting from the proposed operation and their interaction with the impacts of all anticipated mining upon all affected hydrologic systems,” WY Rules and Regulations ENV LQC Ch. 19 § 2;⁵
- f. A showing that “[b]ackfilled materials [will] be replaced in a manner which minimizes water pollution on and off the site,” WY Rules and Regulations ENV LQC Ch. 4 § 2(b)(ii);⁶
- g. A showing that “the operator [will] conduct all operations in such a manner as to minimize disturbance of the hydrologic balance outside the permit area,” WY Rules and Regulations ENV LQC Ch. 4 § 2(w);⁷
- h. “Complete information on groundwater which may be affected in the permit area and adjacent areas,” which must include “an estimate of the depth and quantity of any groundwater existing in the proposed permit area down to an including the strata immediately below the lowest

⁴ See Exhibit A.

⁵ See Exhibit B.

⁶ See Exhibit B.

⁷ See Exhibit B.

mineral seem to be mined,” WY Rules and Regulations ENV LQC Ch. 2 § 4(a)(xii)(A);⁸

- i. A description of the geologic strata, the lower of the stratum or any aquifer below the lowest coal seam to be mined and which may be adversely impacted by mining, which must include “***a statement of the results of test borings or core samples***” that show the location of any groundwater, ENV LQC Ch. 2 § 4(a)(viii)(A);⁹ or
- j. Plans and studies to “ensure the protection of the quality and quantity, and rights to, surface and groundwater,” including adequate surface and groundwater monitoring plans to address the potential adverse hydrologic consequences, and “[a]n evaluation of the impact of the proposed mining activities that may result in contamination, diminution, or interruption of the quality and quantity of groundwater or surface water” all within the proposed mine permit area and adjacent areas, WY Rules and Regulations ENV LQC Ch. 2 § 5(a)(ix)-(xi).¹⁰

2. Brook’s permit application does not affirmatively establish that Brook can ***accomplish reclamation as required by the Act*** pursuant to Wyo. Stat. Ann. § 35-11-406(n)(ii),¹¹ which based on WY Rules and Regulations ENV LQC Ch. 4 § 2(a),¹² requires the permittee to “restore the land to a condition equal to or greater than the “highest previous use.””

⁸ See **Exhibit B.**

⁹ See **Exhibit B.**

¹⁰ See **Exhibit B.**

¹¹ See **Exhibit A.**

¹² See **Exhibit B.**

3. Brook cannot affirmatively establish that its proposed operations have been *“designed to prevent material damage to the hydrologic balance outside the permit area”* pursuant to Wyo. Stat. Ann. § 35-11-406(n)(iii).¹³

Accordingly, at the conclusion of the hearing Big Horn will request that the EQC require Brook to gather, analyze and submit to DEQ for review all required site-specific data and studies prior to DEQ preparing the written findings required by Wyo. Stat. Ann. § 35-11-406(n) and issuing a state decision document approving Brook’s mine permit application. Big Horn will further request that DEQ approve Brook’s mine permit application only with inclusion of certain permit conditions designed to mitigate foreseeable risks of irreparable harm.

WITNESSES

Big Horn intends to call the following witnesses, each of whom were previously disclosed and deposed by Brook:

1. Jordan Sweeney
2. Paul (Joe) Gerlach

Big Horn reserves the right to call any witness listed by any other party to this matter, as well as additional witnesses as necessary for impeachment, rebuttal, or foundation for exhibits.

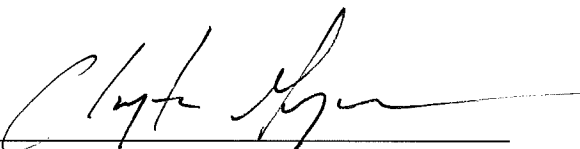
¹³ See **Exhibit A.**

EXHIBITS

Big Horn's list of exhibits are identified in **Exhibit C** attached to this Prehearing Memorandum. Copies of the exhibits listed on **Exhibit C** will be provided to counsel for each party simultaneously with the provision of this Prehearing Memorandum and have been filed online with the Council. Big Horn will bring a paper copy of these exhibits to the final hearing to be included in the record by the court reporter.

Big Horn reserves the right to use any exhibit designated by any other party to this matter, as well as the right to designate additional exhibits as necessary for impeachment or rebuttal. Big Horn reserves the right to enlarge any exhibit or portion thereof at the final hearing and further reserves the right to use or present any exhibit in electronic format.

DATED: May 17, 2017.

By 
Lynnette Boomgaarden (WSB # 5-2837)
Clayton H. Gregersen (WSB # 7-5677)
Crowley Fleck PLLP
237 Storey Boulevard, Suite 110
Cheyenne, WY 82009
(307) 426-4100

*Attorney for Objectors
Big Horn Coal Company*

CERTIFICATE OF SERVICE

I hereby certify that on May 17, 2017, a true and correct copy of the foregoing was served by email to the following:

Andrew Kuhlmann
James LaRock
Wyoming Attorney General's Office
Andrew.kuhlmann@wyo.gov
James.larock@wyo.gov
Attorneys for DEQ

Alan Edwards
Deputy Director, DEQ
Alan.edwards@wyo.gov

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Isaac N. Sutphin
Jeffrey Pope
TLSansonetti@hollandhart.com
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Attorneys for Brook Mining Co., LLC

Brook Collins
38 Monarch Rd.
Ranchester, WY 82839
bpcharlie@wbaccess.net

Todd Parfitt
Director, DEQ
Todd.Parfitt@wyo.gov

Shannon Anderson
Powder River Basin Resource Council
sanderson@powderriverbasin.org

Jay Gilbertz
jGilbertz@yonkeetoner.com
*Attorney for Mary Brezik-Fisher and
David Fisher*

Jim Ruby
Environmental Quality Council
Jim.ruby@wyo.gov



From: Jim Ruby
To: [Isaac Sutphin](#); [Lynne Boomgaarden](#); [andrew kuhlmann](#); [Shannon Anderson](#); [Jay Gilbertz](#); [Jeffrey S. Pope \(JSPope@hollandhart.com\)](#); [James LaRock](#)
Cc: [Dave Bagley](#)
Subject: Brook Mine LLC 17-4802
Date: Wednesday, May 17, 2017 8:11:32 AM

Dear Counsel:

If possible, just prior to the hearing on Monday, could you have a joint list, for the hearing officer to use, of exhibits that you are willing to allow into the record without objection and those exhibits where there is an objection. That will allow for a much easier and quicker process for the council to have access to exhibits without waiting for the computers to refresh after the introduction of an exhibit.

Thank you.

Sincerely,

Jim Ruby

From: Jim Ruby
To: [Shannon Anderson](#)
Cc: [Isaac Sutphin](#); [Lynne Boomgaarden](#); [andrew kuhlmann](#); [Jay Gilbertz](#); [Jeffrey S. Pope \(JSPope@hollandhart.com\)](#)
Subject: Re: Councilmember attendance
Date: Monday, May 08, 2017 8:10:26 AM

Dear Shannon:

The other business that the Council has is very short in duration there isn't any necessity for a time limit. If time runs short than those other issues will probably be held over to the next meeting. The Council is very aware of the time necessary that week for the hearings on the rule making and the final hearing in Brook it is their desire to handle both of those hearings efficiently and effectively. None of the members want to delay either matter unless absolutely necessary.

The reason you might have heard from Jeff Pope is because when he called and asked me the question about who might be in attendance he indicated that all of you but Lynn were involved in depositions in Denver. So I asked him to pass the information I provided him along to those of you at the depositions, if he had the opportunity. As you are aware I also sent you an email concerning that conversation. It is the first email in this string of communications. You always get your communications from either I or the hearing officer I can't think of one instance where that hasn't been the case. It happened in this case as well.

The opening statements will be limited to 10 minutes per side. As to your request for absent council members to send in questions, that has always been available to council members either by them asking directly or by the hearing officer asking on their behalf. The council members will be able to participate either in person, by video or by telephone.

To the degree that there are substantive issues that arise in this case you will always have those issues addressed by either the Council as a whole or the hearing officer. This is the standard operating procedure of the Council. To the degree there are questions of how the hearing process will occur, such as those you have posed or that were posed last week than those questions will more often than not be answered by me. The hearing office does not generally have the information nor the time to handle those types of questions directly. I always visit with the hearing officer to get a decision if it falls within his responsibilities and then pass that information along to the parties. If it is your request that all communications in this matter be directly with the hearing officer I will pass that along to the hearing officer and he can decide whether he wants to follow that procedure for this case. Please let me know if that is what you want to happen and I will forward your request to Dr. Bagley.

Sincerely,

Jim

On Sun, May 7, 2017 at 4:24 PM, Shannon Anderson <sanderson@powderriverbasin.org> wrote:

Jim,

In thinking more about this, we would like to raise some concerns about the other Council business on Wednesday morning. We know the rulemaking hearing has already been scheduled, but as an organization that is involved in both proceedings, we want to make sure neither gets shortchanged with time. We are hoping the Council will be amendable to putting a time limit on the other business - perhaps until 11 a.m. that morning - and then if necessary, to continue the rulemaking hearing on a later date to ensure that the Brook Mine

hearing gets as much time as possible to complete the hearing.

In addition to the video conference question I raised last week, I am also wondering if absent Council members could send in questions for the witnesses to be read through Dr. Bagley and answered by the witnesses at the hearing? It is not ideal, but may at least help to make sure Council members who are making the ultimate decisions in the hearing are able to participate as much as possible.

Also, while I have you, could you confirm the time limit for opening statements?

And finally, I have not received an email/phone call from Jeff Pope about this, and honestly, Jim, I'm not sure why I would. We respectfully request that all communications regarding the hearing come through you (or preferably Dr. Bagley as the Hearing Examiner) and that they are shared with all parties equally.

Thank you,
Shannon

On Thu, May 4, 2017 at 10:48 AM, Jim Ruby <jim.ruby@wyo.gov> wrote:

Dear Counsel:

A question was posed regarding what the attendance may be of the councilmembers. The best answer is this.

Rich Fairservis has recused himself from the proceedings.

Dr. Bagley and Meghan Lally will be present in person for the entire hearing (absent an emergency occurring).

I do not know whether Nick Agopian and Deb Baumer will be present in person for the entire proceeding and if not whether they will be able to attend via phone/internet.

Megan Degenfelder will be present in person until Thursday afternoon.

Tim Flitner will be present in person for some of the hearing and will attend by phone as much as possible for the rest of the hearing.

We are going to audio record the entire hearing and each day we will try and make that recording available to any absent members. We are also going to try and video record the witness testimony and have that available at the end of each day as well for any absent members to watch.

The Council will be taking a break on Wednesday morning from the hearing to handle a few matters. They will hold a rule making hearing at 9:00 a.m. on Wednesday and will handle a few administrative matters. That should not take more than a couple of hours and they will then resume the hearing in Brook.

Hopefully this information will assist you in preparing for this hearing.

You will be receiving an email/phone call from Jeff Pope with much of this same information.

Sincerely,

Jim Ruby

E-Mail to and from me, in connection with the transaction

of public business, is subject to the Wyoming Public Records Act and may be disclosed to third parties.

--

Shannon Anderson
Powder River Basin Resource Council
934 N. Main St., Sheridan, WY 82801
[307-672-5809](tel:307-672-5809) (o) [307-763-0995](tel:307-763-0995) (c)
sanderson@powderriverbasin.org

From: Shannon Anderson
To: [Jim Ruby](#)
Cc: [Isaac Sutphin](#); [Lynne Boomgaarden](#); [andrew kuhlmann](#); [Jay Gilbertz](#); [Jeffrey S. Pope \(JSPOpe@hollandhart.com\)](#)
Subject: Re: Councilmember attendance
Date: Sunday, May 07, 2017 4:24:11 PM

Jim,

In thinking more about this, we would like to raise some concerns about the other Council business on Wednesday morning. We know the rulemaking hearing has already been scheduled, but as an organization that is involved in both proceedings, we want to make sure neither gets shortchanged with time. We are hoping the Council will be amenable to putting a time limit on the other business - perhaps until 11 a.m. that morning - and then if necessary, to continue the rulemaking hearing on a later date to ensure that the Brook Mine hearing gets as much time as possible to complete the hearing.

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Jim Ruby

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--

Shannon Anderson
Powder River Basin Resource Council
934 N. Main St., Sheridan, WY 82801
307-672-5809 (o) 307-763-0995 (c)
sanderson@powderriverbasin.org

From: Shannon Anderson
To: [Jim Ruby](#)
Cc: [Isaac Sutphin](#); [Lynne Boomgaarden](#); [andrew kuhlmann](#); [Jay Gilbertz](#); [Jeffrey S. Pope \(JSPope@hollandhart.com\)](#)
Subject: Re: Councilmember attendance
Date: Thursday, May 04, 2017 6:48:36 PM

Thanks, Jim -- Interesting. Will there also be video conferencing available? Or just phone?
Shannon

On Thu, May 4, 2017 at 10:48 AM, Jim Ruby <jim.ruby@wyo.gov> wrote:

Dear Counsel:

A question was posed regarding what the attendance may be of the councilmembers. The best answer is this.

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Sincerely,

Jim Ruby

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--

Shannon Anderson
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sanderson@powderriverbasin.org

From: Jim Ruby
To: [Isaac Sutphin](#); [Shannon Anderson](#); [Lynne Boomgaarden](#); [andrew kuhlmann](#); [Jay Gilbertz](#); [Jeffrey S. Pope \(JSPOpe@hollandhart.com\)](#)
Subject: Councilmember attendance
Date: Thursday, May 04, 2017 10:48:24 AM

Dear Counsel:

A question was posed regarding what the attendance may be of the councilmembers. The best answer is this.

Rich Fairservis has recused himself from the proceedings.

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I do not know whether Nick Agopian and Deb Baumer will be present in person for the entire proceeding and if not whether they will be able to attend via phone/internet.

Megan Degenfelder will be present in person until Thursday afternoon.

Tim Flitner will be present in person for some of the hearing and will attend by phone as much as possible for the rest of the hearing.

We are going to audio record the entire hearing and each day we will try and make that recording available to any absent members. We are also going to try and video record the witness testimony and have that available at the end of each day as well for any absent members to watch.

The Council will be taking a break on Wednesday morning from the hearing to handle a few matters. They will hold a rule making hearing at 9:00 a.m. on Wednesday and will handle a few administrative matters. That should not take more than a couple of hours and they will then resume the hearing in Brook.

Hopefully this information will assist you in preparing for this hearing.

You will be receiving an email/phone call from Jeff Pope with much of this same information.

Sincerely,

Jim Ruby



Jim Ruby <jim.ruby@wyo.gov>

RE: Brook Mine Discovery Responses

1 message

Shannon Anderson <sanderson@powderriverbasin.org>

Mon, Apr 24, 2017 at 3:28 PM

To: Clayton Gregersen <cgregersen@crowleyfleck.com>, Isaac Sutphin <INSutphin@hollandhart.com>

Cc: Jay Gilbertz <JGilbertz@yonkeetoner.com>, Todd Parfitt <todd.parfitt@wyo.gov>, Alan Edwards

<alan.edwards@wyo.gov>, Lynne Boomgaarden <lboomgaarden@crowleyfleck.com>, Thomas Sansonetti

<TLSansonetti@hollandhart.com>, "Jeffrey S. Pope" <JSPope@hollandhart.com>, Carri Svec <CSvec@hollandhart.com>,

Michelle McCallum <mmccallum@hollandhart.com>, Jan Kelley <JMKelley@hollandhart.com>, bpcharlie@wbaccess.net,

andrew.kuhlmann@wyo.gov, james.larock@wyo.gov, Jim Ruby <jim.ruby@wyo.gov>

Hi Isaac, just checking in on this and also to ask if there is a way to make any of the folders smaller as I have been trying to download two of them for most of the day now. If you could break up files a bit more in the folders that are quite large (data size not necessarily documents) that would be helpful. Thanks, Shannon

From: Clayton Gregersen [mailto:cgregersen@crowleyfleck.com]**Sent:** Monday, April 24, 2017 10:00 AM**To:** Isaac Sutphin**Cc:** Jay Gilbertz; Todd Parfitt; Alan Edwards; Lynne Boomgaarden; Thomas Sansonetti; Jeffrey S. Pope; Carri Svec;Michelle McCallum; Jan Kelley; bpcharlie@wbaccess.net; Shannon Anderson; andrew.kuhlmann@wyo.gov;james.larock@wyo.gov; Jim Ruby**Subject:** RE: Brook Mine Discovery Responses

Isaac,

In attempting to access the link and documents provided by you, we running into a few problems. We are unable to open many of the documents produced, particularly any document that is not in either a .pdf or excel file. We have also noticed that several of the folders provided contain numerous sub-folders but no actual documents. I have reached out to both Shannon Anderson and Jay Gilbertz and they are experiencing the same problems. In order to access the files provided and any omitted files, could you provide the parties with your production documents in all .pdf files? Provision of a droxbox or jump drive containing the files in .pdf form should resolve the issue.

Due to the production deadline of last Friday, the vast number of documents and the imminence of the hearing date, we would appreciate your immediate attention to this matter and provision of these files no later than end of business tomorrow.

Thank you and please contact Lynne or myself if you have any questions.

Clayton Gregersen

[406-255-7335](tel:406-255-7335)

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From: Isaac Sutphin [<mailto:INSutphin@hollandhart.com>]

Sent: Friday, April 21, 2017 5:06 PM

To: Jay Gilbertz <JGilbertz@yonkeetoner.com>; Todd Parfitt <todd.parfitt@wyo.gov>; Alan Edwards <alan.edwards@wyo.gov>; Lynne Boomgaarden <lboomgaarden@crowleyfleck.com>; Thomas Sansonetti <TLSansonetti@hollandhart.com>; Jeffrey S. Pope <JSPope@hollandhart.com>; Carri Svec <CSvec@hollandhart.com>; Michelle McCallum <mmccallum@hollandhart.com>; Jan Kelley <JMKelley@hollandhart.com>; bpcharlie@wbaccess.net; Shannon Anderson <sanderson@powderriverbasin.org>; andrew.kuhlmann@wyo.gov; james.larock@wyo.gov; Clayton Gregersen <cgregersen@crowleyfleck.com>

Subject: Brook Mine Discovery Responses

All,

We will be circulating electronic copies of our written discovery responses momentarily. Due to the time crunch I have not obtained a verification page from Mr. Woodring, but I will circulate the respective verifications early next week.

My staff will also be sending links to download the documents Brook is producing in response to each request for production. Due to the volume of materials, the uploading process is taking longer than anticipated. As soon as the upload is complete, you will receive the link and can begin downloading the information at your convenience. If you have any issues accessing the documents, please do not hesitate to contact me. Likewise, please let me know if you have any questions or concerns.

Thanks,

IS

Isaac N. Sutphin, P.C.

Partner

Holland & Hart LLP

2515 Warren Avenue, Suite 450

Cheyenne, WY 82001

Phone [\(307\) 778-4200](tel:(307) 778-4200)

Fax [\(307\) 778-8175](tel:(307) 778-8175)

E-mail: insutphin@hollandhart.com



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Jim Ruby <jim.ruby@wyo.gov>

RE: Brook Mine Discovery Responses

1 message

Clayton Gregersen <cgregersen@crowleyfleck.com>

Mon, Apr 24, 2017 at 9:59 AM

To: Isaac Sutphin <INSutphin@hollandhart.com>

Cc: Jay Gilbertz <JGilbertz@yonkeetoner.com>, Todd Parfitt <todd.parfitt@wyo.gov>, Alan Edwards <alan.edwards@wyo.gov>, Lynne Boomgaarden <lboomgaarden@crowleyfleck.com>, Thomas Sansonetti <TLSansonetti@hollandhart.com>, "Jeffrey S. Pope" <JSPope@hollandhart.com>, Carri Svec <CSvec@hollandhart.com>, Michelle McCallum <mmccallum@hollandhart.com>, Jan Kelley <JMKelley@hollandhart.com>, "bpcharlie@wbaccess.net" <bpcharlie@wbaccess.net>, Shannon Anderson <sanderson@powderriverbasin.org>, "andrew.kuhlmann@wyo.gov" <andrew.kuhlmann@wyo.gov>, "james.larock@wyo.gov" <james.larock@wyo.gov>, Jim Ruby <jim.ruby@wyo.gov>

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Clayton Gregersen

406-255-7335

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From: Isaac Sutphin [mailto:INSutphin@hollandhart.com]**Sent:** Friday, April 21, 2017 5:06 PM

To: Jay Gilbertz <JGilbertz@yonkeetoner.com>; Todd Parfitt <todd.parfitt@wyo.gov>; Alan Edwards <alan.edwards@wyo.gov>; Lynne Boomgaarden <lboomgaarden@crowleyfleck.com>; Thomas Sansonetti <TLSansonetti@hollandhart.com>; Jeffrey S. Pope <JSPope@hollandhart.com>; Carri Svec <CSvec@hollandhart.com>; Michelle McCallum <mmccallum@hollandhart.com>; Jan Kelley <JMKelley@hollandhart.com>; bpcharlie@wbaccess.net;

Shannon Anderson <sanderson@powderriverbasin.org>; andrew.kuhlmann@wyo.gov; james.larock@wyo.gov; Clayton Gregersen <cgregersen@crowleyfleck.com>

Subject: Brook Mine Discovery Responses

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My staff will also be sending links to download the documents Brook is producing in response to each request for production. Due to the volume of materials, the uploading process is taking longer than anticipated. As soon as the upload is complete, you will receive the link and can begin downloading the information at your convenience. If you have any issues accessing the documents, please do not hesitate to contact me. Likewise, please let me know if you have any questions or concerns.

Thanks,

IS

Isaac N. Sutphin, P.C.

Partner

Holland & Hart LLP

2515 Warren Avenue, Suite 450

Cheyenne, WY 82001

Phone (307) 778-4200

Fax (307) 778-8175

E-mail: insutphin@hollandhart.com



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From: Shannon Anderson
To: andrew.kuhlmann@wyo.gov; [Jim Ruby](#); EQC-All@wyo.gov; todd.parfitt@wyo.gov
Subject: EQC Docket No. 15-4801
Date: Thursday, April 20, 2017 3:49:10 PM
Attachments: [2017 4-20 Notice of Voluntary Dismissal.pdf](#)

Please see the attached filed earlier today. Just let me know if you have any questions or need clarification.

Shannon Anderson
Powder River Basin Resource Council
934 N. Main St., Sheridan, WY 82801
307-672-5809 cell: 307-763-0995
sanderson@powderriverbasin.org
Join us at www.powderriverbasin.org
Follow us at <https://twitter.com/PRBResCouncil>

From: Wendy Drake
To: andrew.kuhlmann@wyo.gov; james.larock@wyo.gov; alan.edwards@wyo.gov; tlsansonetti@hollandhart.com; insutphin@hollandhart.com; jspope@hollandhart.com; jmkelley@hollandhart.com; csvec@hollandhart.com; bpcharlie@wbaccess.net; todd.parfitt@wyo.gov; sanderson@powderriverbasin.org; jgilbertz@yonkeetoner.com; Jim Ruby
Cc: [Lynne Boomgaarden](#); [Clayton Gregersen](#); [Jenny Wacker](#)
Subject: EQC Docket No. 17-4802, Big Horn Coal Company's Discovery Requests to Brook Mining and DEQ
Date: Friday, April 07, 2017 3:58:11 PM
Attachments: [4.7.2017 BHCC Discovery Requests to Brook Minng. Co. LLC.pdf](#)
[4.7.2017 BHCC Discovery Requests to DEQ.pdf](#)

Attached please find Big Horn Coal Company's Discovery requests to Brook Mining, Co. LLC and to Wyoming DEQ.

Thank you.

Wendy Drake
*Assistant to Lynne Boomgaarden,
Amanda H. Newton, and Blake A. Klinkner*
307-772-4846
wdrake@crowleyfleck.com

CROWLEY FLECK PLLP
237 Storey Boulevard, Suite 110
Cheyenne, WY, 82009
307-426-4100

OFFICES:
BILLINGS BISMARCK BOZEMAN BUTTE CASPER CHEYENNE HELENA KALISPELL MISSOULA SHERIDAN WILLISTON

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Lynnette J. Boomgaarden (WSB# 5-2837)
Clayton H Gregersen (WSB# 7-5677)
Crowley Fleck PLLP
237 Storey Boulevard, Suite 110
Cheyenne, WY 82009
307-426-4100
lboomgaarden@crowleyfleck.com
cgregersen@crowleyfleck.com

ATTORNEY FOR OBJECTORS
BIG HORN COAL COMPANY

**BEFORE THE ENVIRONMENTAL QUALITY COUNCIL
STATE OF WYOMING**

IN RE BROOK MINE APPLICATION)	
	)	Docket No. 17-4802
)	
TFN 6 2-025)	

**OBJECTOR BIG HORN COAL COMPANY'S DISCOVERY REQUESTS TO
BROOK MINING CO., LLC**

TO: Brook Mining Co., LLC, by and through Thomas Sansonetti, Isaac Sutphin and Jeffrey Pope, Holland and Hart, LLP, 2515 Warren Ave., Suite 450, Cheyenne, WY 82001, their attorneys:

Pursuant to Wyo. Stat. Ann. § 16-3-107(g) and Rules 33 and 34 of the Wyoming Rules of Civil Procedure, Big Horn Coal Company ("Big Horn"), by and through its counsel of record, submits the following interrogatories and requests for production (collectively, the "Discovery Requests") to Brook Mining Co., LLC (sometimes referred to herein as "Brook Mine"). Pursuant to the Order of Consolidation and Schedule of the

Environmental Quality Council ("EQC"), dated March 13, 2017, responses from Brook Mining Co., LLC are due by April 21, 2017.

These Discovery Requests are not intended to duplicate any disclosures required by the EQC's Order of March 13, 2017. Instead, these Discovery Requests are an attempt to supplement the required disclosures with other relevant and discoverable information as defined by the Wyoming Rules of Civil Procedure and appropriate case law interpreting the same. To the extent that the information requested in these Discovery Requests is duplicative of any already required disclosure, please indicate where that information was/will be provided and provide all other responsive information.

INSTRUCTIONS AND DEFINITIONS

The following instructions and definitions apply to these Discovery Requests and are incorporated therein:

1. The terms "Brook Mine", "You", "Your", any plural, or any synonym thereof, are intended to and shall embrace and include Brook Mining Co., LLC, counsel for said party, and all agents, servants, employees, representatives, or anyone on behalf of Brook Mining Co., LLC, or who has acted for or on behalf of the Brook Mining Co., LLC, who are in possession of, or may have obtained information for or on behalf of Brook Mining Co., LLC.
2. The responses to these interrogatories and document requests ("Discovery Requests") shall include all non-privileged information and documents that are within your possession, custody, or control, to the fullest extent allowed under the Wyoming Rules of Civil Procedure.

3. Each Discovery Request should be construed as broadly as permissible under the Wyoming Rules of Civil Procedure, and no Discovery Request should be construed as a limitation on any other Discovery Request. If, in answering these Discovery Requests, you claim an ambiguity in interpreting a particular request, definition, or instruction, such claim shall not be used as a basis for refusing to respond. Instead, you should identify the language deemed ambiguous and the interpretation chosen or used in responding to the Discovery Request.

4. If there exists no information, documents, or things that are responsive to a particular request, that fact should be stated in response to the request.

5. These Discovery Requests are deemed to be continuing to the fullest extent permitted by the Wyoming Rules of Civil Procedure, until and up to the date and time of the final hearing currently set for May 22, 2017.

6. Regardless of the tense employed, all verbs shall be read as applying to the past, present, and future as necessary to make any Discovery Request more, rather than less, inclusive.

7. None of these Discovery Requests are intended to request information or documents protected by attorney-client privilege, protected as work-product or otherwise privileged or protected. To the extent that the following Discovery Requests seek such privileged or protected information, please provide all information not so protected and indicate the existence of the protected information.

8. “And,” “or,” or “and/or” shall be construed in either the disjunctive or conjunctive in order to elicit the broadest possible response.

9. IDENTIFY and/or IDENTIFYING: The terms “identify” and/or “identifying,” with respect to a natural person, means to provide that person’s name, home address and telephone number, current employer and job title, and work address and telephone number. The terms “identify” and/or “identifying,” with respect to an entity, means to provide the name, address and telephone number for that entity. The terms “identify” and/or “identifying,” with respect to a document, means to provide the date, subject matter, author(s), addressee(s), recipient(s), length and current location of the document. The terms “identify” and/or “identifying,” when used with respect to oral statements or communications, means to state the maker of the communication or statement, recipient of the communication or statement, when the communication or statement was made, where the communication or statement was made, the person(s) present when the communication or statement was made, the mode of communication, and the subject matter of the communication or statement.

10. PERSON: The term “person” includes natural persons and business entities.

11. DOCUMENT: The term “document” means all materials, things, and tangible evidence within the scope of the Wyoming Rules of Civil Procedure, including, but not limited to, writings, memoranda, correspondence, files, cards, reports, forms, contracts, agreements, notes, inventories, diaries, calendars, communications or summaries of any kind, billing records, drawings, graphs, charts, studies, photographs, films, recordings, videotapes, computer tapes, computer disks, electronically or digitally recorded data or information, electronic mail, and any other data or information compilations in any form, which are in the possession, custody or control of the you, your agents, counsel, or any

other person(s) acting on your behalf. Each draft and non-identical copy of a Document is to be considered a separate Document.

12. INCLUDING: The term “Including” means including but not limited to.

13. COMMUNICATION: The term “communication” means the imparting or interchange of thoughts, opinions, or information by speech, writing, or signs, including but not limited to all inquiries, discussions, conversations, negotiations, agreements, meetings, telephone conversations, letters, correspondence, notes, facsimile transmissions, answering machine or voice mail information, electronic mail transmissions, or recordings, whether communicated by writing, electronically, orally, or otherwise.

14. The terms “permit”, “permit application”, “mine plan”, “reclamation plan”, “proposed mining operations” or any form or synonym thereof shall refer to the surface coal mining permit application, DEQ No. TFN 6 2-025, including all proposed mining operations involved with the permit application and all subparts and related documents such as the mine plan and reclamation plan, submitted by Brook Mine and that is at issue in the contested case hearing set to begin on May 22, 2017.

INTERROGATORIES

INTERROGATORY NO. 1: Please identify all persons who aided in the preparation of these answers and responses to these Discovery Requests.

ANSWER:

INTERROGATORY NO. 2: Please identify all persons known to you to have any knowledge of any fact concerning the surface coal mining permit application submitted by you in this matter, and for such person, please state the subject matter to which they are believed to have knowledge.

ANSWER:

INTERROGATORY NO. 3: Please identify all persons who aided in the preparation of the mine permit application in this matter. For each person so identified, please indicate their role in the preparation of the permit application.

ANSWER:

INTERROGATORY NO. 4: Please identify and describe any communications you have had with any party related to the permit application, including Wyoming DEQ.

ANSWER:

INTERROGATORY NO. 5: Please identify each and every person you may or intend to call as a witness at the hearing for this matter.¹

¹ Big Horn recognizes that parties have until May 17, 2017 to designate and identify witnesses and exhibits to be used or called at the hearing for this matter. Big Horn respects the right of Brook Mine to reserve its identification of exhibits and witnesses until that point in time, but would request, to the extent that Brook Mine knows of the witnesses and exhibits it intends to call/use (as well as the additional information requested in these Discovery Requests), that Brook Mine provide this information in response to these requests. In the event that Brook Mine elects to wait to disclose the identity of its witnesses and exhibits until a later date, Big Horn also notes the continuing nature of these Discovery Requests and the duty to supplement under W.R.C.P. Rule 26, and requests that Brook Mine provide the requested information, at the latest, simultaneously with its identification of witnesses and exhibits.

ANSWER:

INTERROGATORY NO. 6: For each person identified in Interrogatory No. 5, please provide a description of the substance of their proposed testimony, an identification of all exhibits, documents or communications that will be referred to in each person's testimony or that was relied on forming any knowledge, beliefs or opinions that will be expressed in each witness's testimony. If any witnesses identified in response to this request have provided an expert report in this matter, Big Horn will rely on the required disclosures of W.R.C.P. 26(a)(2) and EQC's Order of March 13, 2017 for this information, and this interrogatory is not applicable to that witness.²

ANSWER:

INTERROGATORY NO. 7: Please identify each and every person you may or intend to call as a witness at the hearing for this matter that may present testimony or evidence in the form of opinion testimony.³

ANSWER:

INTERROGATORY NO. 8: For all persons identified in Interrogatory No. 7, please provide a list of the topics on which that witness may present opinion testimony and a summary of the substance of those opinions. If any witnesses identified in response to this request have provided an expert report in this matter, Big Horn will rely on the required

² See *supra*, n. 1.

³ See *supra*, n. 1.

disclosures of W.R.C.P. 26(a)(2) and EQC's Order of March 13, 2017 for this information, and this interrogatory is not applicable to that witness.^{4,5}

ANSWER:

INTERROGATORY NO. 9: Please identify any person with whom you, your attorney's, or any potential expert witness previously identified by you have consulted with in the preparation of your case in this matter or in the completion and/or submission of your surface coal mining permit application at issue in this matter, DEQ File No. TFN 6 2-025. For each person state:

- a) The name address and any field of expertise;
- b) The subject matter for which the person was consulted;
- c) An identification of all communications with that person regarding this case or any aspect of the above referenced permit application;
- d) A summary of the input provided by that person, specifically including but not limited to any reservations or criticisms of the permit application, mine plan or reclamation plan; and
- e) All documents and information provided to and/or relied upon by such person.

ANSWER:

⁴ See *supra*, n. 1.

⁵ Please note that a merely listing a witness' occupation, type of experience and connection with the case does not qualify as a summary of the witness' opinions or expected testimony. *Anderson v. Bristol, Inc.*, 936 F.Supp.2d 1039, 1059-1060 (S.D. Iowa 2013).

INTERROGATORY NO. 10: Please provide a summary of the evidence you believe demonstrates that the requirements for a surface coal mining permit found in Wyo. Stat. Ann. § 35-11-406(n)(i)-(vii). Included in this summary, please identify what witnesses, documents, exhibits or any other evidence that you may use to demonstrate that each of these requirements has been satisfied at the EQC hearing for this matter set to begin on May 22, 2017.

ANSWER:

INTERROGATORY NO. 11: Please identify and describe any information responsive to any required disclosure found in Rule 26 of the Wyoming Rules of Civil Procedure, replacing as necessary the use of “trial” with “hearing” referring to the hearing in the matter currently set to begin on May 22, 2017, including but not limited to any disclosure required by Rule 26(a)(1) and (a)(3).

ANSWER:

INTERROGATORY NO. 12: Please identify and describe any documents, research, communications or correspondence concerning the permit application which discuss, address or reference the requirements, policies or guidelines of the Wyoming Department of Environmental Quality, Land Quality Division’s Coal Standard Operating Procedure 2.1, Coal Permit Content and Review Procedures Relating to Abutting and Overlapping Coal Permit Area Boundaries.

ANSWER:

INTERROGATORY NO. 13: Please identify and describe the current annual volume of coal you expect to be produced from the proposed mining operations.

ANSWER:

INTERROGATORY NO. 14: Please identify and describe the current intended use, location of use, and transportation inside and outside of the permit area for the coal production identified in response to Interrogatory No. 13.

ANSWER:

INTERROGATORY NO. 15: Please identify and describe the current intended mining sequence and duration of each sequence for the coal production identified in response to Interrogatory No. 13.

ANSWER:

INTERROGATORY NO. 16: Please identify and describe any and all current plans regarding facilities intended to be used in connection with the coal mined and produced from the proposed mining operations.

ANSWER:

INTERROGATORY NO. 17: Please identify and describe all citations or violations of Brook Mine or its affiliates and/or related entities related to any mining or reclamation activity in the past 20 years. For each citation or violation, please describe the resolution thereof, including whether resolution involved an appeal of the citation or violation and whether litigation was involved.

ANSWER:

INTERROGATORY NO. 18: Please identify and describe the current assets of Brook Mine and/or any related or affiliated entities that may be pledged or otherwise used for reclamation related to the proposed mining operations.

ANSWER:

INTERROGATORY NO. 19: Please identify and describe any potential negative geologic or hydrologic impacts inside or outside of the permit area, or any other potential environmental, health, safety or other impacts of the proposed mining operations that you have considered and analyzed in preparing the permit application, and the measures, steps and protections within the mine and reclamation plans that will minimize or negate these impacts.

ANSWER:

INTERROGATORY NO. 20: Please identify and describe how the permit application addresses the potential risks associated with historical and existing underground coal fires and subsidence, and the extent to which the submitted fire control plan, subsidence control plan, and proposed reclamation bond is sufficient to address those risks.

ANSWER:

INTERROGATORY NO. 21: Please identify and describe how the permit application specifically addresses the use of highwall mining techniques through and/or near previously mined backfill material.

ANSWER:

INTERROGATORY NO. 22: Please identify and describe the groundwater model you used to prepare the permit application and how that model incorporates site specific attributes, including the historical mining and reclamation activity in the area.

ANSWER:

INTERROGATORY NO. 23: Please identify and describe the site specific analysis (sampling and testing) of stability factors and coal strengths you used to prepare your permit application, including but not limited to all analysis or geotechnical design relied on to support the use of highwall mining techniques.

ANSWER:

INTERROGATORY NO. 24: Please identify and describe the materials and documents reviewed regarding subsurface coal fires in and around the permit area, and how the permit application addresses the control of new or existing subsurface coal fires that may be rekindled or aggravated by the proposed mining operations.

ANSWER:

INTERROGATORY NO. 25: Please identify who will testify as the designated corporate representative of Brook Mine regarding the matters of inquiry in these Discovery Requests and the information and production provided in response to these Discovery Requests.

ANSWER:

REQUESTS FOR PRODUCTION

REQUEST FOR PRODUCTION NO. 1: Please produce a true and correct copy of any and all documents, exhibits, communications, drawings, photographs, videotapes, motion pictures or other items of evidence that you believe is relevant to your demonstration that the permit application satisfies the requirements for a surface coal mining permit found in Wyo. Stat. Ann. § 35-11-406(n)(i)-(vii), regardless of whether you may use these materials as an exhibit.⁶

RESPONSE:

REQUEST FOR PRODUCTION NO. 2: Please produce copies of all documents identified or referred to in your answers to these Discovery Requests, or utilized or relied on in answering these Discovery Requests.

RESPONSE:

REQUEST FOR PRODUCTION NO. 3: Please provide all documents responsive to any required disclosure found in Rule 26 of the Wyoming Rules of Civil Procedure, replacing as necessary the use of “trial” with “hearing” referring to the EQC hearing in the matter currently set to begin on May 22, 2017, including but not limited to any disclosure required by Rule 26(a)(1) and 26(a)(3).

RESPONSE:

REQUEST FOR PRODUCTION NO. 4: Please produce any documents, research, communications or correspondence with any person or entity discussing or referencing any potential hydrologic, geologic, environmental, health or safety impacts of

⁶ See *supra*, n. 1.

the proposed mining operations, and/or the extent to which the proposed reclamation bond is sufficient to address such impacts.

RESPONSE:

REQUEST FOR PRODUCTION NO. 5: Please produce any studies, data, mapping, documents or research concerning, or any communications or correspondence with any person or entity, discussing or referencing any of the following:

- a. Geotechnical designs or highwall mining design of the proposed mining operations;
- b. Coal strength or stability factors of the proposed mining operations;
- c. Materials reports or studies regarding the proposed mining operations;
- d. Subsidence issues related to the proposed mining operations;
- e. Water use rates and/or groundwater aquifer testing, inside or outside of the permit area;
- f. Impacts on surface or groundwater from the proposed mining operations;
- g. Historical underground workings in or around the mining area of the proposed mining operations;
- h. Mining operations occurring on or near backfill materials from prior mining operations;
- i. Subsurface fires in or around the mining area of the proposed mining operations;
- j. Acid forming, or toxic materials, or materials constituting a fire, health or safety hazard uncovered during or created by the mining process;

- k. The proposed future uses of the lands affected by the mine plan and how you will reclaim the land for these proposed future uses; or
- l. Reclamation and/or the sufficiency of the reclamation bonding to address any impacts resulting from the proposed mining operations.


For each of the documents provided in response to this request, please indicate whether it was provided to Wyoming DEQ by you in connection with the permit application.

RESPONSE:

REQUEST FOR PRODUCTION NO. 6: Please produce all state and federal permits received by Brook Mine related to the proposed mining operations.

RESPONSE:

DATED: April 7, 2017.

By 
Lynnette Boomgaarden (WSB # 5-2837)
Clayton H. Gregersen (WSB # 7-5677)
Crowley Fleck PLLP
237 Storey Boulevard, Suite 110
Cheyenne, WY 82009
(307) 426-4100

*Attorney for Objectors
Big Horn Coal Company*

CERTIFICATE OF SERVICE

I hereby certify that on April 7, 2017, a true and correct copy of the foregoing was served by email to the following:

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*Attorney for Mary Brezik-Fisher and
David Fisher*

Jim Ruby
Environmental Quality Council
Jim.ruby@wyo.gov



These Discovery Requests are not intended to duplicate any disclosures required by the EQC's Order of March 13, 2017. Instead, these Discovery Requests are an attempt to supplement the required disclosures with other relevant and discoverable information as defined by the Wyoming Rules of Civil Procedure and appropriate case law interpreting the same. To the extent that the information requested in these Discovery Requests is duplicative of any already required disclosure, please indicate where that information was/will be provided and provide all other responsive information.

INSTRUCTIONS AND DEFINITIONS

The following instructions and definitions apply to these Discovery Requests and are incorporated therein:

1. The term "You", "Your", any plural, or any synonym thereof, are intended to and shall embrace and include Wyoming DEQ, counsel for said party, and all agents, servants, employees, representatives, or anyone on behalf of Wyoming DEQ, or who has acted for or on behalf of the Wyoming DEQ, who are in possession of, or may have obtained information for or on behalf of Wyoming DEQ.
2. The responses to these interrogatories and document requests ("Discovery Requests") shall include all non-privileged information and documents that are within your possession, custody, or control, to the fullest extent allowed under the Wyoming Rules of Civil Procedure.
3. Each Discovery Request should be construed as broadly as permissible under the Wyoming Rules of Civil Procedure, and no Discovery Request should be construed as a limitation on any other Discovery Request. If, in answering these Discovery Requests, you

claim an ambiguity in interpreting a particular request, definition, or instruction, such claim shall not be used as a basis for refusing to respond. Instead, you should identify the language deemed ambiguous and the interpretation chosen or used in responding to the Discovery Request.

4. If there exists no information, documents, or things that are responsive to a particular request, that fact should be stated in response to the request.

5. These Discovery Requests are deemed to be continuing to the fullest extent permitted by the Wyoming Rules of Civil Procedure, until and up to the date and time of the EQC hearing currently set for May 22, 2017.

6. Regardless of the tense employed, all verbs shall be read as applying to the past, present, and future as necessary to make any paragraph more, rather than less, inclusive.

7. None of these Discovery Requests are intended to request information or documents protected by attorney-client privilege, protected as work-product or otherwise privileged or protected. To the extent that the following Discovery Requests seek such privileged or protected information, please provide all information not so protected and indicate the existence of the protected information.

8. "And," "or," or "and/or" shall be construed in either the disjunctive or conjunctive in order to elicit the broadest possible response.

9. IDENTIFY and/or IDENTIFYING: The terms "identify" and/or "identifying," with respect to a natural person, means to provide that person's name, home address and telephone number, current employer and job title, and work address and telephone number. The term "identify" and/or "identifying," with respect to an entity, means to provide the

name, address and telephone number for that entity. The term “identify” and/or “identifying,” with respect to a document, means to provide the date, subject matter, author(s), addressee(s), recipient(s), length and current location of the document. The term “identify” and/or “identifying,” when used with respect to oral statements or communications, means to state the maker of the communication or statement, recipient of the communication or statement, when the communication or statement was made, where the communication or statement was made, the person(s) present when the communication or statement was made, the mode of communication, and the subject matter of the communication or statement.

10. PERSON: The term “person” includes natural persons and business entities.

11. DOCUMENT: The term “document” means all materials, things, and tangible evidence within the scope of the Wyoming Rules of Civil Procedure, including, but not limited to, writings, memoranda, correspondence, files, cards, reports, forms, contracts, agreements, notes, inventories, diaries, calendars, communications or summaries of any kind, billing records, studies, drawings, graphs, charts, photographs, films, recordings, videotapes, computer tapes, computer disks, electronically or digitally recorded data or information, electronic mail, and any other data or information compilations in any form, which are in the possession, custody or control of the you, your agents, counsel, or any other person(s) acting on your behalf. Each draft and non-identical copy of a document is to be considered a separate document.

12. INCLUDING: The term “including” means including but not limited to.

13. COMMUNICATION: The term “communication” means the imparting or interchange of thoughts, opinions, or information by speech, writing, or signs, including but not limited to all inquiries, discussions, conversations, negotiations, agreements, meetings, telephone conversations, letters, correspondence, notes, facsimile transmissions, answering machine or voice mail information, electronic mail transmissions, or recordings, whether communicated by writing, electronically, orally, or otherwise.

14. The terms “permit”, “permit application”, “mine plan”, “reclamation plan”, “proposed mining operations” or any form or synonym thereof shall refer to the surface coal mining permit application, DEQ No. TFN 6 2-025, including all proposed mining operations involved with the permit application and all subparts and related documents such as the mine plan and reclamation plan, submitted by Brook Mining Co. LLC (“Brook Mine”) and that is at issue in the contested case hearing set to begin on May 22, 2017.

INTERROGATORIES

INTERROGATORY NO. 1: Please identify all persons who aided in the preparation of these answers and responses to these Discovery Requests.

ANSWER:

INTERROGATORY NO. 2: Please identify and describe with specificity the process undertaken by Wyoming DEQ in the review of the permit application, including but not limited to Wyoming DEQ's review of any technical data.

ANSWER:

INTERROGATORY NO. 3: Please identify all persons who aided in the review of or otherwise has knowledge of any facts concerning the mine permit application in this matter. For each person so identified, please indicate their role in the review of the permit application and the subject matter to which they are believed to have knowledge.

ANSWER:

INTERROGATORY NO. 4: Please identify each and every person you may, or intend to, call as a witness at the hearing for this matter.¹

ANSWER:

¹ Big Horn recognizes that parties have until May 17, 2017 to designate and identify witnesses and exhibits to be used or called at the hearing for this matter. Big Horn respects the right of Wyoming DEQ to reserve its identification of witnesses and exhibits until this point in time, but would request, to the extent that Wyoming DEQ knows of the witnesses and exhibits it intends to call/use (as well as the additional information requested in these Discovery Requests), that Wyoming DEQ provide this information in response to these requests. In the event that Wyoming DEQ elects to wait to disclose the identity of its witnesses and exhibits until a later date, Big Horn also notes the continuing nature of these Discovery requests and the duty to supplement under W.R.C.P. Rule 26 and requests that Wyoming DEQ provide the requested information, at the latest, simultaneously with its identification of witnesses and exhibits.

INTERROGATORY NO. 5: For each person identified in Interrogatory No. 5, please provide a description of the substance of their proposed testimony, an identification of all exhibits, documents or communications that will be referred to in each person's testimony or that was relied on forming any knowledge, beliefs or opinions that will be expressed in each witness's testimony. If any witnesses identified in response to this request have provided an expert report in this matter, Big Horn will rely on the required disclosures of W.R.C.P. 26(a)(2) and EQC's Order of March 13, 2017 for this information, and this interrogatory is not applicable to that witness.²

ANSWER:

INTERROGATORY NO. 6: Please identify each and every person you may or intend to call as a witness at the hearing for this matter that may present testimony or evidence in the form of opinion testimony.³

ANSWER:

INTERROGATORY NO. 7: For all persons identified in Interrogatory No. 7, please provide a list of the topics on which that witness may present opinion testimony and a summary of the substance of those opinions. If any witnesses identified in response to this request have provided an expert report in this matter, Big Horn will rely on the required

² See *supra*, n. 1.

³ See *supra*, n. 1.

disclosures of W.R.C.P. 26(a)(2) and EQC's Order of March 13, 2017 for this information, and this interrogatory is not applicable to that witness.^{4,5}

ANSWER:

INTERROGATORY NO. 8: Please identify any person with whom you, your attorney's, or any potential expert witness previously identified by you have consulted with in the preparation of your case in this matter or in the review of the permit application, DEQ File No. TFN 6 2-025. For each person state:

- a) The name, address and any field of expertise;
- b) The subject matter for which the person has been consulted or has reviewed the permit application;
- c) A summary of the communications with that person regarding this case or any aspect of the above referenced permit application;
- d) A summary of the input provided by that person, specifically including but not limited to any reservations or criticisms of the permit application, mine plan or reclamation plan; and
- e) All documents and information provided to and/or relied upon by such person.

ANSWER:

⁴ See *supra*, n. 1.

⁵ Please note that a merely listing a witness' occupation, type of experience and connection with the case does not qualify as a summary of the witness' opinions or expected testimony. *Anderson v. Bristol, Inc.*, 936 F.Supp.2d 1039, 1059-1060 (S.D. Iowa 2013).

INTERROGATORY NO. 9: Please indicate whether Wyoming DEQ believes, finds or recommends that the permit application should be approved/issued, and explain why Wyoming DEQ takes this position.

ANSWER:

INTERROGATORY NO. 10: If Wyoming DEQ believes, finds or recommends that the permit application should be approved/issued, please provide a summary of the evidence you believe establishes the requirements for a surface coal mining permit found in Wyo. Stat. Ann. § 35-11-406(n)(i)-(vii). Included in this summary, please identify what witnesses, documents, exhibits or any other evidence that you believe establishes each of these requirements.

ANSWER:

INTERROGATORY NO. 11: Please identify and describe any information responsive to any required disclosure found in Rule 26 of the Wyoming Rules of Civil Procedure, replacing as necessary the use of “trial” with “hearing” referring to the hearing in the matter currently set to begin on May 22, 2017, including but not limited to any disclosure required by Rule 26(a)(1) and (a)(3).

ANSWER:

INTERROGATORY NO. 12: Please identify and describe the potential negative impacts on hydrologic balance inside or outside of the permit area, or any other potential geologic, environmental, health, safety or other impacts of the proposed mining operations that you have considered in reviewing the permit application.

ANSWER:

INTERROGATORY NO. 13: Please explain how you believe the proposed mining operations and/or reclamation plan will address the impacts identified in your response to Interrogatory No. 13.

ANSWER:

INTERROGATORY NO. 14: Please identify and describe the risks you have considered in reviewing the permit application associated with historical and existing underground coal fires and possible subsidence.

ANSWER:

INTERROGATORY NO. 15: Please explain how you believe the proposed mining operations and/or reclamation plan will address the risks identified in your response to Interrogatory No. 15, and the extent to which the submitted fire control plan, subsidence control plan, and proposed reclamation bond is sufficient to address those risks.

ANSWER:

INTERROGATORY NO. 16: Please identify and describe any documents, research, communications or correspondence discussing or referencing the requirements, policies or guidelines of the Wyoming Department of Environmental Quality, Land Quality Division's Coal Standard Operation Procedure 2.1, Coal Permit Content and Review Procedures Relating to Abutting and Overlapping Coal Permit Area Boundaries, as it pertains to the permit application.

ANSWER:

INTERROGATORY NO. 17: Identify and describe the materials and documents reviewed and any conclusions reached by Wyoming DEQ regarding the implications of

and impacts that may result from the mine plan's proposal to utilize highwall mining techniques through and/or near previously mined backfill material.

ANSWER:

INTERROGATORY NO. 18: Explain and describe the groundwater modeling used or reviewed by Wyoming DEQ in considering the permit application, and how this information supports any conclusions reached by Wyoming DEQ. Please specifically address any groundwater modeling that addresses site specific attributes of the permit area, including the historical mining and reclamation activity in the area.

ANSWER:

INTERROGATORY NO. 19: Identify and describe the materials and documents reviewed and any conclusions reached by Wyoming DEQ regarding analytical work (sampling and testing) submitted in support of the proposed highwall mining techniques or the geotechnical designs proposed by Brook Mine.

ANSWER:

INTERROGATORY NO. 20: Identify and describe the materials and documents reviewed and any conclusions reached by Wyoming DEQ regarding stability factors or coal strengths within the permit area. Please specifically include any site specific data, studies, or other analytical materials considered and reviewed by Wyoming DEQ in this regard.

ANSWER:

INTERROGATORY NO. 21: Identify and describe the materials and documents reviewed and any conclusions reached by Wyoming DEQ regarding subsurface coal fires

in and around the permit area and the feasibility of controlling new or existing subsurface coal fires that may be rekindled or aggravated by the proposed mining operations.

ANSWER:

REQUESTS FOR PRODUCTION

REQUEST FOR PRODUCTION NO. 1: Please produce a true and correct copy of any and all documents, exhibits, drawings, photographs, videotapes, motion pictures or other items of evidence that you believe is relevant to the findings required for the approval of Brook Mine's surface coal mining permit found in Wyo. Stat. Ann. § 35-11-406(n)(i)-(vii), regardless of whether you may use these materials as an exhibit.⁶

RESPONSE:

REQUEST FOR PRODUCTION NO. 2: Please produce copies of all documents identified or referred to in your answers to these Discovery Requests, or utilized or relied on in answering these Discovery Requests.

RESPONSE:

REQUEST FOR PRODUCTION NO. 3: Please provide all documents responsive to any required disclosure found in Rule 26 of the Wyoming Rules of Civil Procedure, replacing as necessary the use of "trial" with "hearing" referring to the EQC hearing in the matter currently set to begin on May 22, 2017, including but not limited to any disclosure required by Rule 26(a)(1) and (a)(3).

RESPONSE:

⁶ See *supra*, n. 1.

REQUEST FOR PRODUCTION NO. 4: Please produce copies of any documents containing findings, determinations or recommendations of the Wyoming DEQ or any member thereof, either formal or informal, regarding the permit application.

RESPONSE:

REQUEST FOR PRODUCTION NO. 5: Please produce copies of all documents or communications regarding the permit application.

RESPONSE:

REQUEST FOR PRODUCTION NO. 6: Please produce copies of any draft mine permit, draft state decision document and/or draft of any finding to be made by Wyoming DEQ related to the permit application.

RESPONSE:

REQUEST FOR PRODUCTION NO. 7: Please produce any documents, research, communications or correspondence with any person or entity that discuss or reference any impacts on hydrologic balance inside or outside of the permit area, or any other potential environmental, health, safety or other impacts of the proposed mining operations.

RESPONSE:

REQUEST FOR PRODUCTION NO. 8: Please produce any documents, research, communications or correspondence with any person or entity that discuss or reference any risks associated with existing underground coal fires and possible subsidence, and/or the extent to which the proposed reclamation bond is sufficient to address any such impacts.

RESPONSE:

REQUEST FOR PRODUCTION NO. 9: Please produce any data, mapping, documents or research reviewed by you concerning, or any communications or correspondence between you and any person or entity that discuss or reference any of the following:


- a. Geotechnical designs or highwall mining design of the proposed mining operations;
- b. Coal strength or stability factors of the proposed mining operations;
- c. Materials reports or studies regarding the proposed mining operations;
- d. Subsidence issues related to the proposed mining operations;
- e. Water use rates and/or groundwater aquifer testing inside or outside of the permit area;
- f. Impacts on surface or groundwater from the proposed mining operations;
- g. Historical underground workings in or around the mining area of the proposed mining operations;
- h. Mining operations occurring on or near backfill materials from prior mining operations;
- i. Subsurface fires in or around the mining area of the proposed mining operations;
- j. Acid forming, or toxic materials, or materials constituting a fire, health or safety hazard uncovered during or created by the mining process;

- k. The proposed future uses of the lands affected by the mine plan and how the proposed reclamation plan will reclaim the land for the proposed future uses; or
- l. Reclamation and/or the sufficiency of the reclamation bond to address any impacts resulting from the proposed mining operations.

For all of the information provided in response to this request, please indicate the source of this information and whether it was provided to you by Brook Mine.

RESPONSE:

DATED: April 7, 2017.

By 
Lynnette Boomgaarden (WSB # 5-2837)
Clayton H. Gregersen (WSB # 7-5677)
Crowley Fleck PLLP
237 Storey Boulevard, Suite 110
Cheyenne, WY 82009
(307) 426-4100

*Attorney for Objectors
Big Horn Coal Company*

CERTIFICATE OF SERVICE

I hereby certify that on April 7, 2017, a true and correct copy of the foregoing was served by email to the following:

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Attorney for Mary Brezik-Fisher and David Fisher

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Environmental Quality Council
Jim.ruby@wyo.gov

A handwritten signature in blue ink, reading "Lynette Boonsgaarden", written over a horizontal line.

From: Jan Kelley
To: lboomgaarden@crowleyfleck.com; cgregersen@crowleyfleck.com; todd.parfitt@wyo.gov; andrew.kuhlmann@wyo.gov; james.larock@wyo.gov; sanderson@powderriverbasin.org; alan.edwards@wyo.gov; jgilbertz@yonkeetoner.com; bpcharlie@wbaccess.net; mayor@ranchesterwyoming.com; [Jim Ruby](#)
Cc: [Thomas Sansonetti](#); [Isaac Sutphin](#); [Jeffrey S. Pope](#); [Carri Svec](#)
Subject: Brook Mine Application - Brook's 1st Interrogatories & RFP to PRBRC; Brook's 1st Interrogatories & RFP to BHC; Brook's 1st Interrogatories & RFP to Fishers"
Date: Friday, April 07, 2017 3:32:35 PM
Attachments: [2017-04-07 Brook's 1st Combined Interrogatories and RFP to PRBRC.PDF](#)
[2017-04-07 Brook's 1st Combined Interrogatories and RFP to BHC.PDF](#)
[2017-04-07 Brook's 1st Combined Interrogatories and RFP to Fishers.pdf](#)

Attached please find:

1. Brook Mining Company, LLC's First Combined Set of Interrogatories and Requests for Production of Documents to Powder River Basin Resource Council;
2. Brook Mining Company, LLC's First Combined Set of Interrogatories and Requests for Production of Documents to Big Horn Coal Company; and
3. Brook Mining Company, LLC's First Combined Set of Interrogatories and Requests for Production of Documents to Mary Brezik-Fisher and David Fisher.

Jan Kelley

*Assistant to Isaac Sutphin, JoAnna DeWald,
and Sami Falzone*

Holland & Hart LLP

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CONFIDENTIALITY NOTICE: This message is confidential and may be privileged. If you believe that this email has been sent to you in error, please reply to the sender that you received the message in error; then please delete this e-mail. Thank you.

ATTORNEYS FOR PERMIT APPLICANT
BROOK MINING COMPANY, LLC

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)

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Permit Applicant Brook Mining Company, LLC (Brook), by and through counsel Holland & Hart LLP, submits its First Set of Interrogatories and Requests for Production of Documents to Powder River Basin Resource Council, to be answered in accordance with the March 13, 2017 Environmental Quality Council Order of Consolidation and Schedule, and the definitions and instructions set forth below.

INSTRUCTIONS AND DEFINITIONS

1. Each interrogatory and request calls for information known by you and your attorneys, officers and agents; all information from sources under your custody, control, or possession; and all information given to you by others.

2. Pursuant to Wyo. R. Civ. P. 26(e) each of the following interrogatories and requests for documents is continuing in nature, such that supplemental responses are required for any new information which you receive that reveals an original response or answer was incorrect when made, or is no longer true or complete in light of such new information. This duty to supplement shall be continuing throughout the course of litigation and such supplementary responses are hereby requested to be served immediately upon discovery or identification of such information.

3. If there is any question regarding the interpretation of any part of any of the interrogatories or requests for documents, undersigned counsel should be contacted immediately for clarification. The language of these interrogatories and requests for documents should be construed in the broadest possible sense permitted under the Wyoming Rules of Civil Procedure to the end that full and complete discovery may be obtained with regard to the matters requested.

4. Whenever, in the course of answering these interrogatories and request for documents, information is called for which is other than within the personal knowledge of the person executing these answers, you are requested, in addition to providing such information, to provide the name, address, and telephone number of each person providing such information to you, or if the information is obtained from a writing or other document, to identify each such writing or document as described above.

5. In answering or responding to these interrogatories and requests for documents, please state the request immediately preceding your answer.

6. The word "document" is used herein in its broadest sense and includes any reproduction or copy of any kind of writing or any other documentary material, including, without limitations, letters, correspondence, facsimiles, memoranda, notes, diaries, publications, reports, drawings, graphs, charts, photographs, phone-records, emails, computerized information, brochures, calendars or any other form of data compilation.

7. The conjunctive includes the disjunctive and vice versa; "all" includes "any" and vice versa, so that these discovery requests shall be construed to request the broadest scope of information.

8. The term "communication" or "communications" means the transmittal of information in the form of facts, ideas, inquiries, discussions, conversations, negotiations, agreements, undertakings, meetings, telephone conversations, letters, notes, telegrams, telexes,

emails, advertisements or other form of interchange whether oral or written. "You" or "your" refers to Powder River Basin Resource Council, its Members, and its attorneys.

9. "You" or "your" refers to Powder River Basin Resource Council, and its attorneys.

10. "Describe," when used with respect to a communication, act or conduct, means to give, state or identify the following: The date of communication, act or conduct, where it took place, and the person or persons present;

- a. If a communication, the words or substance of the communication, the person making each of the particular statements so listed, the mode of the communication (e.g., in writing, telephone, via computer, in person) and the location of each of the participants;
- b. If an act or conduct, the details of the act or conduct being described and what each participant in such act or conduct did; and
- c. Any document evidencing or reflecting any communication, act or conduct described in response to, or called for by, the interrogatory requesting you to describe that communication, act or conduct.

11. "Shared networking websites" means and refers to internet sites such as Facebook, MySpace, LinkedIn, Twitter, Spoke, Skype, Blogger/BlogSpot, and any other similar websites where personal content is stored/maintained by a third party but is not publicly available via the internet.

12. "Identify," when used with respect to a person, means to give the person's name, present or last known address and telephone number, and the position and business affiliation of the person at the time of his/her actions in connection with the matters alleged in this action.

13. "Identify," when used with respect to a corporation or other form of business organization, means to state the name of such corporation or business organization, the address of its principal place of business and the identity of all individuals who acted on its behalf in connection with the matters alleged in this action.

14. "Identify," when used with regard to a document or writing, means to give the type of document or writing (e.g., letter, memorandum, telegraph, chart, report, etc.), date, file and/or identifying symbol; to identify the author, addressee and each custodian of such document; and to state the substance of such document or produce same.

15. If any interrogatory or request for documents cannot be responded to in full, respond to it to the fullest extent possible, specifying the reasons for your inability to respond fully and identifying the date by which you will make a complete response.

16. If an objection is made with regard to any information sought, state the nature of the objection and the legal authority therefore.

17. Supplementation of responses is also requested for new information which you receive that shows an original response to these interrogatories and requests for documents was incorrect when made, or although correct when made, is no longer true in light of such new information. The duty to supplement shall be continuing as to the above-described types of information, and supplementary responses are hereby requested to be served whenever such information is discovered or determined.

INTERROGATORIES

INTERROGATORY NO. 1: Identify and describe every communication that you had, including meeting minutes (verbal, written, electronic) relating to Powder River Basin Resource Council's (PRBRC) January 27, 2017 Objections to Brook Mining Co., LLC's Coal Mining Permit Application. For each communication, state the people involved in the communication, all individuals who witnessed it, the date and time of the communication, the content of the communication in exquisite detail, and how you learned or became aware of the communication.

ANSWER:

INTERROGATORY NO. 2: Identify all email addresses, webpage addresses, or URLs that have been registered to you during the past five (5) years, including but not limited to, URLs for any shared networking websites, or any other page or account created or maintained by you on any internet-based social networking or communication site.

ANSWER:

INTERROGATORY NO. 3: Please identify the individuals who helped you prepare your objections to Brook Mining Co., LLC's Coal Mining Permit Application.

ANSWER:

INTERROGATORY NO. 4: Please state the names, addresses, telephone numbers and places of occupation of all persons known to you to have any knowledge of any fact concerning the objections submitted by PRBRC, and for such person, please set forth the subject matter to which they are believed to have knowledge.

ANSWER:

INTERROGATORY NO. 5: Please state with specificity all relevant facts supporting your objections to Brook Mining Co., LLC's Coal Mining Permit Application.

ANSWER:

INTERROGATORY NO. 6: Please state with specificity all statutes and/or regulations that you relied upon to form the basis for your objections to Brook Mining Co., LLC's Coal Mining Permit Application. In doing so, identify the objection you claim the statute and/or regulation supports.

ANSWER:

INTERROGATORY NO. 7: Please identify all Member Objectors of PRBRC, including, name, occupation, address, telephone number, and date of membership.

ANSWER:

INTERROGATORY NO. 8: Identify and describe every communication that you had with any other Objector, whether or not said Objector is a Member of Powder River Basin Resource Council, relating in any way to Brook Mining Co., LLC's Coal Mining Permit Application. For each communication, state the people involved in the communication, all individuals who witnessed it, the date and time of the communication, the content of the communication in exquisite detail, and how you learned or became aware of the communication.

ANSWER:

INTERROGATORY NO. 9: Identify each and every fact witness you intend to call at the hearing in this matter, together with a summary of their anticipated testimony and basis of their knowledge.

ANSWER:

INTERROGATORY NO. 10: Describe Shannon Anderson's role in preparing objections to Brook Mining Co., LLC's Coal Mining Permit Application.

ANSWER:

REQUESTS FOR PRODUCTION OF DOCUMENTS

REQUEST FOR PRODUCTION NO. 1: Produce all documents that support your objections to Brook's mine permit and submitted to the Department of Environmental Quality.

RESPONSE:

REQUEST FOR PRODUCTION NO. 2: With respect to each expert you designated, please produce the following:

- A. All materials (whether provided by counsel for PRBRC or generated by the expert) which your designated experts relied on in preparation of their reports;
- B. Correspondence, including to and/or from counsel for PRBRC, or any of the objectors in this case;
- C. Draft reports relating to the experts' involvement in this case;
- D. All invoices and time records for services rendered relating to the experts' involvement in this case;
- E. All notes, including notes from interviews or consultations, data and case materials which underlie or form the basis for any and all opinions, observations, findings, and conclusions made in this case; and
- F. The entire file for each expert, whether electronic or otherwise, relating to this case.

RESPONSE:

REQUEST FOR PRODUCTION NO. 3: Produce all documents that support your answers to interrogatories.

RESPONSE:

REQUEST FOR PRODUCTION NO. 4: Produce copies of all correspondence by or between PRBRC and its Members relating in any way to Brook.

RESPONSE:

REQUEST FOR PRODUCTION NO. 5: Produce copies of all correspondence between PRBRC Members relating in any way to Brook.

RESPONSE:

REQUEST FOR PRODUCTION NO. 6: Produce copies of all draft objections or objection templates.

RESPONSE:

REQUEST FOR PRODUCTION NO. 7: Produce all notes and/or minutes from any PRBRC meeting regarding Brook, including but not limited to community outreach or public meetings.

RESPONSE:

REQUEST FOR PRODUCTION NO. 8: With respect to Sue Ann Spencer, please produce the following:

A. All materials (whether provided by counsel for PRBRC or generated by Ms. Spencer) which she relied on;

B. Correspondence, including to and/or from counsel for PRBRC, other designated experts, or any of the objectors in this case;

C. Draft reports or documents relating to Ms. Spencer's involvement in this case;

D. All invoices and time records for services rendered relating to Ms. Spencer's involvement in this case;

E. All notes, including notes from interviews or consultations, data and case materials which underlie or form the basis for any and all opinions, observations, findings, and conclusions made in this case; and

F. The entire file for Ms. Spencer's, whether electronic or otherwise, relating to this case.

RESPONSE:

DATED: April 7, 2017.



Thomas L. Sansonetti (Wyo. State Bar # 43354)
Isaac N. Sutphin, P.C. (Wyo. State Bar # 6-3711)
Jeffrey S. Pope (Wyo. State Bar # 7-4859)
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insutphin@hollandhart.com
jspope@hollandhart.com

ATTORNEYS FOR PERMIT APPLICANT
BROOK MINING COMPANY, LLC

CERTIFICATE OF SERVICE

I hereby certify that on April 7, 2017, I served a true and correct copy of the foregoing by email, to the following:

Lynnette J. Boomgaarden
Clayton H. Gregersen
Crowley Fleck, PLLP
237 Storey Boulevard, Suite 110
Cheyenne, WY 82009
lboomgaarden@crowleyfleck.com
cgregersen@crowleyfleck.com

Todd Parfitt
Director, DEQ
200 W. 17th Street
Cheyenne, WY 82002
Todd.Parfitt@wyo.gov

Attorneys for Big Horn Coal

Andrew Kuhlmann
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andrew.kuhlmann@wyo.gov
james.larock@wyo.gov
Attorneys for DEQ.

Shannon Anderson
Powder River Basin Resource
Council
sanderson@powderriverbasin.org

Alan Edwards
Deputy Director, DEQ
Alan.edwards@wyo.gov

Jay Gilbertz
Attorney for Mary and David
Brezik-Fisher
jgilbertz@yonkeetoner.com

Brook Collins
38 Monarch Road
Ranchester, WY 82839
bpcharlie@wbaccess.net

Mayor Peter Clark
Town of Ranchester
mayor@ranchesterwyoming.com



INSTRUCTIONS AND DEFINITIONS

1. Each interrogatory and request calls for information known by you and your attorneys, officers and agents; all information from sources under your custody, control, or possession; and all information given to you by others.
2. Pursuant to Wyo. R. Civ. P. 26(e) each of the following interrogatories and requests for documents is continuing in nature, such that supplemental responses are required for any new information which you receive that reveals an original response or answer was incorrect when made, or is no longer true or complete in light of such new information. This duty to supplement shall be continuing throughout the course of litigation and such supplementary responses are hereby requested to be served immediately upon discovery or identification of such information.
3. If there is any question regarding the interpretation of any part of any of the interrogatories or requests for documents, undersigned counsel should be contacted immediately for clarification. The language of these interrogatories and requests for documents should be construed in the broadest possible sense permitted under the Wyoming Rules of Civil Procedure to the end that full and complete discovery may be obtained with regard to the matters requested.
4. Whenever, in the course of answering these interrogatories and request for documents, information is called for which is other than within the personal knowledge of the person executing these answers, you are requested, in addition to providing such information, to provide the name, address, and telephone number of each person providing such information to you, or if the information is obtained from a writing or other document, to identify each such writing or document as described above.
5. In answering or responding to these interrogatories and requests for documents, please state the request immediately preceding your answer.
6. The word "document" is used herein in its broadest sense and includes any reproduction or copy of any kind of writing or any other documentary material, including, without limitations, letters, correspondence, facsimiles, memoranda, notes, diaries, publications, reports, drawings, graphs, charts, photographs, phone-records, emails, computerized information, brochures, calendars or any other form of data compilation.
7. The conjunctive includes the disjunctive and vice versa; "all" includes "any" and vice versa, so that these discovery requests shall be construed to request the broadest scope of information.
8. The term "communication" or "communications" means the transmittal of information in the form of facts, ideas, inquiries, discussions, conversations, negotiations,

agreements, undertakings, meetings, telephone conversations, letters, notes, telegrams, telexes, emails, advertisements or other form of interchange whether oral or written.

9. “You” or “your” refers to Big Horn Coal Company, and its attorneys.

10. “Describe,” when used with respect to a communication, act or conduct, means to give, state or identify the following: The date of communication, act or conduct, where it took place, and the person or persons present;

- a. If a communication, the words or substance of the communication, the person making each of the particular statements so listed, the mode of the communication (e.g., in writing, telephone, via computer, in person) and the location of each of the participants;
- b. If an act or conduct, the details of the act or conduct being described and what each participant in such act or conduct did; and
- c. Any document evidencing or reflecting any communication, act or conduct described in response to, or called for by, the interrogatory requesting you to describe that communication, act or conduct.

11. “Shared networking websites” means and refers to internet sites such as Facebook, MySpace, LinkedIn, Twitter, Spoke, Skype, Blogger/BlogSpot, and any other similar websites where personal content is stored/maintained by a third party but is not publicly available via the internet.

12. “Identify,” when used with respect to a person, means to give the person’s name, present or last known address and telephone number, and the position and business affiliation of the person at the time of his/her actions in connection with the matters alleged in this action.

13. “Identify,” when used with respect to a corporation or other form of business organization, means to state the name of such corporation or business organization, the address of its principal place of business and the identity of all individuals who acted on its behalf in connection with the matters alleged in this action.

14. “Identify,” when used with regard to a document or writing, means to give the type of document or writing (e.g., letter, memorandum, telegraph, chart, report, etc.), date, file and/or identifying symbol; to identify the author, addressee and each custodian of such document; and to state the substance of such document or produce same.

15. “Brook Proposed Mine Plan” refers to the Mine Plan included in Brook’s permit application on file with the Department of Environmental Quality.

16. "Brook Proposed Reclamation Plan" refers to the Reclamation Plan included in Brook's permit application on file with the Department of Environmental Quality.

17. "Mine Disturbance Area" refers to the disturbance areas outlined in Exhibit 1-1 of Brook's Proposed Mine Plan.

18. "Industrial Shop" refers to the facility by the same name in Big Horn Coal Co.'s Response to Brook Mine Request for Order in Lieu of Consent dated April 15, 2016.

19. "Rail Spur Facility" refers to the facility by the same name in Big Horn Coal Co.'s Response to Brook Mine Request for Order in Lieu of Consent dated April 15, 2016.

20. If any interrogatory or request for documents cannot be responded to in full, respond to it to the fullest extent possible, specifying the reasons for your inability to respond fully and identifying the date by which you will make a complete response.

21. If an objection is made with regard to any information sought, state the nature of the objection and the legal authority therefore.

22. Supplementation of responses is also requested for new information which you receive that shows an original response to these interrogatories and requests for documents was incorrect when made, or although correct when made, is no longer true in light of such new information. The duty to supplement shall be continuing as to the above-described types of information, and supplementary responses are hereby requested to be served whenever such information is discovered or determined.

INTERROGATORIES

INTERROGATORY NO. 1: Please identify the individuals who helped you prepare your objections to Brook's Coal Mining Permit Application.

ANSWER:

INTERROGATORY NO. 2: Please state the names, addresses, telephone numbers and places of occupation of all persons known to you to have any knowledge of any

fact concerning the objections submitted by Big Horn Coal Company, and for such person, please set forth the subject matter to which they are believed to have knowledge.

ANSWER:

INTERROGATORY NO. 3: Please state with specificity all relevant facts supporting your objections to Brook's Coal Mining Permit Application.

ANSWER:

INTERROGATORY NO. 4: Please state with specificity all statutes and/or regulations that you relied upon to form the basis for your objections to Brook's Coal Mining Permit Application. In doing so, identify the objection you claim that the statute and/or regulation supports.

ANSWER:

INTERROGATORY NO. 5: Identify and describe every communication that you had with any other Objector, relating in any way to Brook's Coal Mining Permit Application. For each communication, state the people involved in the communication, all individuals who witnessed it, the date and time of the communication, the content of the communication in exquisite detail, and how you learned or became aware of the communication.

ANSWER:

INTERROGATORY NO. 6: Describe your existing operations within the mine disturbance area.

ANSWER:

INTERROGATORY NO. 7: Describe your proposed future operations within the mine disturbance area, including when those operations are proposed to begin.

ANSWER:

INTERROGATORY NO. 8: Describe your proposed future operations for the industrial shop.

ANSWER:

INTERROGATORY NO. 9: Describe your proposed future operations for the rail spur facility.

ANSWER:

INTERROGATORY NO. 10: Describe your current operations at the industrial shop.

ANSWER:

INTERROGATORY NO. 11: Describe your current operations at the rail spur facility.

ANSWER:

INTERROGATORY NO. 12: Explain the basis on which you claim Brook's mine and reclamation plans lack sampling, testing, geotechnical, and analytical data.

ANSWER:

INTERROGATORY NO. 13: Describe when and how Big Horn Coal plans to reclaim its rail spur, water tank, pump house and shop.

ANSWER:

INTERROGATORY NO. 14: Describe in detail all work performed by Aqua Terra Consultants for you from 2013 to present.

ANSWER:

INTERROGATORY NO. 15: Identify each and every fact witness you intend to call at the hearing in this matter, together with a summary of their anticipated testimony and basis of their knowledge.

ANSWER:

REQUESTS FOR PRODUCTION OF DOCUMENTS

REQUEST FOR PRODUCTION NO. 1: Produce all documents that support your responses to interrogatories.

RESPONSE:

REQUEST FOR PRODUCTION NO. 2: Produce the leases currently in effect for your industrial shop.

RESPONSE:

REQUEST FOR PRODUCTION NO. 3: Produce all documents that show your existing and proposed future operations and development plans within the mine permit boundary.

RESPONSE:

REQUEST FOR PRODUCTION NO. 4: Produce all documents that show your existing rights and obligations under Mine Permit No. 213-T7.

RESPONSE:

REQUEST FOR PRODUCTION NO. 5: Produce all documents showing any current agreements between you and Burlington Northern-Santa Fe Railroad for current or future use of the rail spur facility.

RESPONSE:

REQUEST FOR PRODUCTION NO. 6: Produce all correspondence related to any current agreements between you and Burlington Northern-Santa Fe Railroad for current or future use of the rail spur facility.

RESPONSE:

REQUEST FOR PRODUCTION NO. 7: Produce all documents that support your claims about safety and environmental concerns related to previous mining under Big Horn Coal's surface, including for BHCC Pits 1 and 2.

RESPONSE:

REQUEST FOR PRODUCTION NO. 8: Produce all hydraulic conductivity data available from monitor wells for BHCC Pit 1, Pit 2, and the Placheck Pit.

RESPONSE:

REQUEST FOR PRODUCTION NO. 9: Produce all documents that Big Horn Coal has sent to or received from the Department of Environmental Quality related to its reclamation of the BHCC Pit 1, Pit 2, and the Placheck Pit.

RESPONSE:

REQUEST FOR PRODUCTION NO. 10: Produce all documents that show work Big Horn Coal has done or had done on its rail spur facility in the last year.

RESPONSE:

REQUEST FOR PRODUCTION NO. 11: Produce all documents that show the Placheck Pit reclaimed area is unsuitable material for topsoil.

RESPONSE:

REQUEST FOR PRODUCTION NO. 12: Produce all documents that show why a 65-degree bench slope in the TR-1 is impossible.

RESPONSE:

REQUEST FOR PRODUCTION NO. 13: Produce all documents that show the operating cost for highwall mining is \$8-12/ton.

RESPONSE:

REQUEST FOR PRODUCTION NO. 14: With respect to each expert you designated, please produce the following:

A. All materials (whether provided by counsel for Big Horn Coal or generated by the expert) which your designated experts relied on in preparation of their reports;

B. Correspondence, including to and/or from counsel for Big Horn Coal, or any of the objectors in this case;

C. Draft reports relating to the experts' involvement in this case;

D. All invoices and time records for services rendered relating to the experts' involvement in this case;

E. All notes, including notes from interviews or consultations, data and case materials which underlie or form the basis for any and all opinions, observations, findings, and conclusions made in this case; and

F. The entire file for each expert, whether electronic or otherwise, relating to this case.

RESPONSE:

REQUEST FOR PRODUCTION NO. 15: Produce all documents related to any requests, applications for, or otherwise related to any post-mining land use changes for the Big Horn Coal mine.

RESPONSE:

REQUEST FOR PRODUCTION NO. 16: Produce all documents that support your objections, if any.

RESPONSE:

REQUEST FOR PRODUCTION NO. 17:

Produce all quarterly/annual

inspection reports for the Big Horn Mine, Permit No. 213-T7, from 2012 to the present date.

RESPONSE:

DATED: April 7, 2017.



Thomas L. Sansonetti (Wyo. State Bar # 43354)

Isaac N. Sutphin, P.C. (Wyo. State Bar # 6-3711)

Jeffrey S. Pope (Wyo. State Bar # 7-4859)

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jspope@hollandhart.com

ATTORNEYS FOR PERMIT APPLICANT
BROOK MINING COMPANY, LLC

CERTIFICATE OF SERVICE

I hereby certify that on April 7, 2017, I served a true and correct copy of the foregoing by email to the following:

Lynnette J. Boomgaarden
Clayton H. Gregersen
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Jay Gilbertz
Attorney for Mary and David
Brezik-Fisher
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Brook Collins
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Mayor Peter Clark
Town of Ranchester
mayor@ranchesterwyoming.com

A handwritten signature in blue ink, appearing to read "Jay Gilbertz", is written over a horizontal line.

Thomas L. Sansonetti (Wyo. State Bar # 43354)
Isaac N. Sutphin, P.C. (Wyo. State Bar # 6-3711)
Jeffrey S. Pope (Wyo. State Bar # 7-4859)
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ATTORNEYS FOR PERMIT APPLICANT
BROOK MINING COMPANY, LLC

**BEFORE THE ENVIRONMENTAL QUALITY COUNCIL
STATE OF WYOMING**

IN RE BROOK MINE APPLICATION)	
	)	Docket 17-4802
)	
TFN 6 2-025)	

**BROOK MINING COMPANY, LLC'S FIRST COMBINED SET OF INTERROGATORIES AND
REQUESTS FOR PRODUCTION OF DOCUMENTS TO
MARY BREZIK-FISHER AND DAVID FISHER**

Permit Applicant Brook Mining Company, LLC (Brook), by and through counsel Holland & Hart LLP, submits its First Combined Set of Interrogatories and Requests for Production of Documents to Mary Brezik-Fisher and David Fisher, to be answered in accordance with the March 13, 2017 Environmental Quality Council Order of Consolidation and Schedule, and the definitions and instructions set forth below.

INSTRUCTIONS AND DEFINITIONS

1. Each interrogatory and request calls for information known by you and your attorneys, officers and agents; all information from sources under your custody, control, or possession; and all information given to you by others.

2. Pursuant to Wyo. R. Civ. P. 26(e) each of the following interrogatories and requests for documents is continuing in nature, such that supplemental responses are required for any new information which you receive that reveals an original response or answer was incorrect when made, or is no longer true or complete in light of such new information. This duty to supplement shall be continuing throughout the course of litigation and such supplementary responses are hereby requested to be served immediately upon discovery or identification of such information.

3. If there is any question regarding the interpretation of any part of any of the interrogatories or requests for documents, undersigned counsel should be contacted immediately for clarification. The language of these interrogatories and requests for documents should be construed in the broadest possible sense permitted under the Wyoming Rules of Civil Procedure to the end that full and complete discovery may be obtained with regard to the matters requested.

4. Whenever, in the course of answering these interrogatories and request for documents, information is called for which is other than within the personal knowledge of the person executing these answers, you are requested, in addition to providing such information, to provide the name, address, and telephone number of each person providing such information to you, or if the information is obtained from a writing or other document, to identify each such writing or document as described above.

5. In answering or responding to these interrogatories and requests for documents, please state the request immediately preceding your answer.

6. The word "document" is used herein in its broadest sense and includes any reproduction or copy of any kind of writing or any other documentary material, including, without limitations, letters, correspondence, facsimiles, memoranda, notes, diaries, publications, reports, drawings, graphs, charts, photographs, phone-records, emails, computerized information, brochures, calendars or any other form of data compilation.

7. The conjunctive includes the disjunctive and vice versa; "all" includes "any" and vice versa, so that these discovery requests shall be construed to request the broadest scope of information.

8. The term "communication" or "communications" means the transmittal of information in the form of facts, ideas, inquiries, discussions, conversations, negotiations, agreements, undertakings, meetings, telephone conversations, letters, notes, telegrams, telexes, emails, advertisements or other form of interchange whether oral or written. "You" or "your" refers to Powder River Basin Resource Council, its Members, and its attorneys.

9. "You" or "your" refers Mary Brezik-Fisher and David Fisher, and their attorneys.

10. "Describe," when used with respect to a communication, act or conduct, means to give, state or identify the following: The date of communication, act or conduct, where it took place, and the person or persons present;

- a. If a communication, the words or substance of the communication, the person making each of the particular statements so listed, the mode of the communication (e.g., in writing, telephone, via computer, in person) and the location of each of the participants;
- b. If an act or conduct, the details of the act or conduct being described and what each participant in such act or conduct did; and
- c. Any document evidencing or reflecting any communication, act or conduct described in response to, or called for by, the interrogatory requesting you to describe that communication, act or conduct.

11. "Shared networking websites" means and refers to internet sites such as Facebook, MySpace, LinkedIn, Twitter, Spoke, Skype, Blogger/BlogSpot, and any other similar websites where personal content is stored/maintained by a third party but is not publicly available via the internet.

12. "Identify," when used with respect to a person, means to give the person's name, present or last known address and telephone number, and the position and business affiliation of the person at the time of his/her actions in connection with the matters alleged in this action.

13. "Identify," when used with respect to a corporation or other form of business organization, means to state the name of such corporation or business organization, the address of its principal place of business and the identity of all individuals who acted on its behalf in connection with the matters alleged in this action.

14. "Identify," when used with regard to a document or writing, means to give the type of document or writing (e.g., letter, memorandum, telegraph, chart, report, etc.), date, file and/or identifying symbol; to identify the author, addressee and each custodian of such document; and to state the substance of such document or produce same.

15. If any interrogatory or request for documents cannot be responded to in full, respond to it to the fullest extent possible, specifying the reasons for your inability to respond fully and identifying the date by which you will make a complete response.

16. If an objection is made with regard to any information sought, state the nature of the objection and the legal authority therefore.

17. Supplementation of responses is also requested for new information which you receive that shows an original response to these interrogatories and requests for documents was

incorrect when made, or although correct when made, is no longer true in light of such new information. The duty to supplement shall be continuing as to the above-described types of information, and supplementary responses are hereby requested to be served whenever such information is discovered or determined.

INTERROGATORIES

INTERROGATORY NO. 1: Please identify the individuals who helped you prepare your objections to Brook Mining Co., LLC's Coal Mining Permit Application.

ANSWER:

INTERROGATORY NO. 2: Please state the names, addresses, telephone numbers and places of occupation of all persons known to you to have any knowledge of any fact concerning the objections submitted by you or who helped you prepare your objections, and for such person, please set forth the subject matter to which they are believed to have knowledge.

ANSWER:

INTERROGATORY NO. 3: Please state with specificity all relevant facts supporting your objections to Brook Mining Co., LLC's Coal Mining Permit Application.

ANSWER:

INTERROGATORY NO. 4: Please state with specificity all statutes and/or regulations that you relied upon to form the basis for your objections to Brook Mining Co.,

LLC's Coal Mining Permit Application. In doing so, identify the objection that a statute and/or regulation supports.

ANSWER:

INTERROGATORY NO. 5: Identify and describe every communication that you had with any other Objector, relating in any way to Brook Mining Co., LLC's Coal Mining Permit Application. For each communication, state the people involved in the communication, all individuals who witnessed it, the date and time of the communication, the content of the communication in exquisite detail, and how you learned or became aware of the communication.

ANSWER:

INTERROGATORY NO. 6: Identify in detail the previous mine operations that caused damage to water wells and specify which water wells required repair.

ANSWER:

INTERROGATORY NO. 7: Describe how the Brook mine has a "very real potential" to affect the Tongue River Reservoir and what information you relied to reach that conclusion.

ANSWER:

INTERROGATORY NO. 8: Identify each and every fact witness you intend to call at the hearing in this matter, together with a summary of their anticipated testimony and basis of their knowledge.

ANSWER:

REQUESTS FOR PRODUCTION OF DOCUMENTS

REQUEST FOR PRODUCTION NO. 1: Produce all correspondence received from or sent to Brook.

RESPONSE:

REQUEST FOR PRODUCTION NO. 2: Produce all geological surveys that you reference in paragraph 3 of your objections.

RESPONSE:

REQUEST FOR PRODUCTION NO. 3: Produce all documents that support your claim that blasting could worsen on-going subsidence issues.

RESPONSE:

REQUEST FOR PRODUCTION NO. 4: Produce all documents that support your objections to Brook's mine permit application.

RESPONSE:

REQUEST FOR PRODUCTION NO. 5: Produce all documents that support your answers to interrogatories.

RESPONSE:

REQUEST FOR PRODUCTION NO. 6: Produce all reports, analyses, or data relating to water quality and quantity from wells on your property.

RESPONSE:


REQUEST FOR PRODUCTION NO. 7: Produce copies of any and all correspondence between you and any other individual or entity relating in any way to Brook.

RESPONSE:

REQUEST FOR PRODUCTION NO. 8: Produce all documents, reports, analyses, or data related to any foundations built on your property.

RESPONSE:

DATED: April 7, 2017.



Thomas L. Sansonetti (Wyo. State Bar # 43354)
Isaac N. Sutphin, P.C. (Wyo. State Bar # 6-3711)
Jeffrey S. Pope (Wyo. State Bar # 7-4859)
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jspope@hollandhart.com

ATTORNEYS FOR PERMIT APPLICANT
BROOK MINING COMPANY, LLC

CERTIFICATE OF SERVICE

I hereby certify that on April 7, 2017, I served a true and correct copy of the foregoing by email, to the following:

Lynnette J. Boomgaarden
Clayton H. Gregersen
Crowley Fleck, PLLP
237 Storey Boulevard, Suite 110
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Attorneys for Big Horn Coal

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Shannon Anderson
Powder River Basin Resource
Council
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Alan Edwards
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Jay Gilbertz
Attorney for Mary and David
Brezik-Fisher
jgilbertz@yonkeetoner.com

Brook Collins
38 Monarch Road
Ranchester, WY 82839
bpcharlie@wbaccess.net

Mayor Peter Clark
Town of Ranchester
mayor@ranchesterwyoming.com

A handwritten signature in blue ink, appearing to read "Jay Gilbertz", is written over a horizontal line.

From: Jay Gilbertz
To: [Shannon Anderson](#); [Andrew Kuhlmann](#); [James LaRock](#); [Thomas Sansonetti](#); [Isaac Sutphin](#); [Jeff Pope](#)
Cc: [Clayton Gregersen](#); [Lynne Boomgaarden](#); [Jim Ruby](#); [todd.parfitt@wyo.gov](#); [alan.edwards@wyo.gov](#); [bpcharlie@wbaccess.net](#)
Subject: RE: EQC Docket No. 17-4802
Date: Friday, April 07, 2017 3:09:37 PM
Attachments: [First Interrogatories to Brook Mine.pdf](#)
[First Interrogatories to DEQ.pdf](#)
[First RFP to Brook Mine.pdf](#)
[First RFP to DEQ.pdf](#)

Dear All: Attached are the Fishers' Discovery requests to Brook Mine and Discovery Requests to DEQ

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(307) 674-7451 (Phone)

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jgilbertz@yonkeetoner.com
*Attorney for Objectors,
Mary Brezik-Fisher and David Fisher*

**BEFORE THE ENVIRONMENTAL QUALITY COUNCIL
STATE OF WYOMING**

IN RE BROOK MINE APPLICATION)	
	)	DOCKET 17-4802
TFN 6 2-025)	
)	

**FIRST SET OF INTERROGATORIES TO BROOK MINING COMPANY, LLC
ISSUED BY OBJECTORS MARY BREZIK-FISHER AND DAVID FISHER**

Objectors Mary Brezik-Fisher and David Fisher, by and through their undersigned counsel, submit the following interrogatories issued to Brook Mining Company, LLC to be answered separately and fully in writing under oath pursuant to the Wyoming Rules of Civil Procedure as follows:

A. DEFINITIONS AND REQUIREMENTS

Each interrogatory requests all information known by you, your agents, employees and attorneys, including information that can be obtained through a diligent review of information or data under your control or available to you. Your answers should include all information given to you by others, unless such information is protected by the attorney-client privilege or the work product doctrine. If you claim requested information is not

subject to disclosure, comply with the Rules of Civil Procedure, including Rule 26(b)(5) by making that claim expressly and describing the nature of the documents, communications, or things not produced or disclosed in a manner that, without revealing information itself privileged or protected, will enable the undersigned to assess the applicability of the privilege or protection.

When the terms “writing”, “documents”, “tangible items”, or “electronically stored information” are used in these requests, these terms should be construed in the broadest sense and are intended to encompass all forms of information as contemplated and described by Wyoming Rule of Civil Procedure 34, including without limitation, all writings, documents, copies, reproductions, drawings, graphs, charts, photographs, sound recordings, visual recordings, images, and any other data or data compilations stored in any medium from which information can be obtained or translated (if necessary) by the respondent into reasonably usable form.

Supplementation of all responses is required in strict compliance with the Rules of Civil Procedure and for any answer that requests information relating to or seeking information on; (a) the identity and location of persons having knowledge of discoverable facts; (b) the identity, location, qualifications and opinions of experts expected to be called at trial; and (c) any answer to an request to which supplemental, new or amended information is obtained that changes, supplements, alters, supports or contradicts any prior response.

Definitions:

1. **“Brook Mine”** as used in this discovery shall mean Brook Mining Company, LLC.
2. **“Mine or Mining Permit”** as used in this discovery shall mean Brook Mine Application TFN 6 2-025 currently pending in Sheridan County, Wyoming.
3. **“DEQ”** as used in this discovery shall mean the Wyoming Department Of Environmental Quality.
4. **“Fishers”** as used in this discovery shall mean Objectors Mary Brezik-Fisher and David Fisher.

INTERROGATORIES

INTERROGATORY NO. 1: List all parent, subsidiary or affiliated companies,

or associated entities of Brook Mining Company, LLC and define their relationship to Brook Mining Company, LLC.

ANSWER:

INTERROGATORY NO. 2: Identify by name, address, and telephone number all current employees of Brook Mining Company, LLC, who will be responsible for management and operation of the proposed Brook Mine. If Brook Mining Company, LLC's operations will be managed by someone other than Brook Mine employees, identify those persons or entities who will be responsible for managing and operating the mine.

ANSWER:

INTERROGATORY NO. 3: Identify whether there have been any citations, notices of violation or similar action by any governmental entity against Brook Mining Company, LLC or any of its parent, subsidiary or affiliated companies, including but not limited to, Ramaco, LLC, Ram Mining, LLC, Ramaco Resources, Inc., and Ramaco Development, LLC. In relation to each matter identified describe the resolution of the matter or if it is still pending.

ANSWER:

INTERROGATORY NO. 4: Identify all tangible assets of Brook Mining Company, LLC in addition to any coal rights it may have in Wyoming and the general nature of and approximate value of any such assets.

ANSWER:

INTERROGATORY NO. 5: Identify the current estimate for the yearly tonnage of coal production anticipated by Brook Mine in each of the first five years of coal production, if those estimates differ from what is listed in the current mine plan.

ANSWER:

INTERROGATORY NO. 6: Identify the current estimate of the number of full-time employees of the Brook Mine in each of the first five years of the mine's operation.

ANSWER:

INTERROGATORY NO. 7: Identify each person whom Brook Mining Company, LLC expects to call or utilize as an expert at the contested case hearing. In relation to each expert, **regardless of whether or not the expert is a "retained" expert**, identify the following:

1. His or her name, current address and area of expertise, and the name of any company, organization or entity with which the expert is employed or affiliated.
2. Specifically identify and give a comprehensive statement of all opinions the expert will offer at trial or any hearing, and give a detailed explanation of the basis and facts upon which the expert relies for his or her proffered opinion.
3. Identify all publications authored or co-authored by the expert within the last 10 years.
4. Identify all cases in which the expert has testified as an expert witness (by deposition or trial testimony) within the last 4 years. As to each case, identify the approximate date of the case, names of the parties and their lawyers and the court which exercised jurisdiction.
5. Identify all documents supplied to the expert by you and all other documents of any sort reviewed by the expert in relation to this case.

If experts have not yet been identified, fully supplement this response when such

experts are identified or concurrently with expert disclosures as may be required by any case management order or scheduling order.

ANSWER:

INTERROGATORY NO. 8: Identify all witnesses that you will call or may call at any contested case hearing in this matter. In relation to each witness, identify the witness by name, provide contact information, any company or organization which employs the witness and a summary of the material information which you believe this witness may have or testify to at any hearing.

ANSWER:

INTERROGATORY NO. 9: Identify the relationship between Mr. Niles Veal of Sheridan, Wyoming and Brook Mining Company, LLC or any other subsidiary or affiliated company of Ramaco Resources, Inc. Include in your answer the length of employment with or agency for Brook Mining or any of Ramaco Resources, Inc.'s subsidiaries or affiliated companies along with his job description. Your answer should identify whether you acknowledge Niles Veal is a person authorized to act on behalf of Brook Mining or any of its parent companies.

ANSWER:

INTERROGATORY NO. 10: Other than Brook Mining Company, LLC, identify any other company (subsidiary, parent or affiliated), or any officer, director, CEO, shareholder, or any other individual who has provided a guarantee to be responsible for the

reclamation or remediation costs exceeding the current bonding requirement set forth in the Mine Plan or for any environmental impacts such as water or air pollution.

ANSWER:

INTERROGATORY NO. 11: Identify with specific reference to provisions in the current mine plan any documentation which provides compensation for damages to affected landowners regarding issues pertaining to domestic and stock water wells, homes and foundations, medical expenses or injury associated with diminished or dangerous air quality levels, and other potential adverse affects of the mine operation on affected landowners and members of the public.

ANSWER:

INTERROGATORY NO. 12: Identify and describe with specificity all direct communications by and between any objecting landowner and Brook Mining Company, LLC or any of its representatives, agents, employees, directors, officers in which you contend the objecting landowner's questions and concerns about the mine plan were "discussed and addressed". Include in your answer the names, addresses, and phone numbers of all individuals involved in any such occurrences, the date of the occurrence, the location of any such occurrence and the substance of the conversation or communication.

ANSWER:

INTERROGATORY NO. 13: If either a non-adjudicated or non-permitted domestic or stock water well is utilized by a landowner within one-half mile of the mine permit boundary and such well is adversely impacted by mining operations, does Brook Mine

commit to repair and/or replace impacted or damaged domestic and stock water wells?

ANSWER:

INTERROGATORY NO. 14: Identify with specificity the design, nature and extent of any Air Quality Monitoring Program (both on and off the permit area) which will be implemented and utilized by Brook Mine during its mining operations which will ensure compliance with applicable state and federal air quality standards and the plan currently in place that defines how any adverse impacts will be controlled, stopped and remediated. Include in your answer the name of the individual or individuals who designed the Program. If no such Air Quality Monitoring Program has been designed, state that fact in your answer. If your answer is a reference to the Mine Plan, provide specific citation to those aspects of the Mine Plan which you claim provide the answer to this question.

ANSWER:

INTERROGATORY NO. 15: Identify with specificity the design, nature and extent of any Water Quality Monitoring Program (both surface and subsurface on and off the mine permit area) which will be implemented and utilized by Brook Mine during its mining operations to ensure that water sources suffer no adverse impacts or degradation and the plan currently in place that defines how any adverse impacts will be controlled, stopped and remediated. Include in your answer the name of the individual or individuals who designed the programs. If no such Water Quality Monitoring Program has been designed, state that fact in your answer. If your answer is a reference to the Mine Plan, provide specific citation to those aspects of the Mine Plan which you claim provide the answer to this question.

ANSWER:

INTERROGATORY NO. 16: Identify the projected or estimated cost, expense or expenditure of the overburden removal to excavate the access trenches or openings for providing the access area necessary to facilitate the highwall mining equipment and activities at the Brook Mine facility proposed in Sheridan County, Wyoming. If projections or estimates exist only for a portion of the project (i.e. one trench) identify that the projection or estimate is so limited and the scope to which the projection or estimate applies. Your response should include the name(s) of all individuals or companies involved in preparing these calculations and any data relied upon in formulating the calculations.

ANSWER:

INTERROGATORY NO. 17: Identify whether data and samples collected on the Fisher property without authorization from the Fishers on July 1, 2013, including soil, vegetation and foliage samples, by representatives from BKS Environmental Associates, Inc. was tested and/or analyzed and whether such data and testing was included in the mine plan.

ANSWER:

DATED this 7th day of April, 2017.

YONKEE & TONER, LLP

/s/ Jay A. Gilbertz

Jay A. Gilbertz, WSB # 6-3087

Attorney for Objectors

Mary Brezik-Fisher and David Fisher

319 West Dow Street

P.O. Box 6288

Sheridan, WY 82801

Telephone: (307) 674-7451

Telefax: (307) 672-6250

CERTIFICATE OF SERVICE

I, Jay A. Gilbertz, hereby certify that on the 7th day of February, 2017, I served a true and correct copy of the above and foregoing *by electronic transmission*, duly addressed as follows:

Andrew Kuhlmann
Asst. Attorney General
andrew.kuhlmann@wyo.gov

Todd Parfitt
Director, DEQ
Todd.Parfitt@wyo.gov

Alan Edwards
Deputy Director, DEQ
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Jim Ruby
Executive Officer, EQC
jim.ruby@wyo.gov

/s/ Jay A. Gilbertz
Jay A. Gilbertz

subject to disclosure, comply with the Rules of Civil Procedure, including Rule 26(b)(5) by making that claim expressly and describing the nature of the documents, communications, or things not produced or disclosed in a manner that, without revealing information itself privileged or protected, will enable the undersigned to assess the applicability of the privilege or protection.

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3. **“DEQ”** as used in this discovery shall mean the Wyoming Department of Environmental Quality.
4. **“Fishers”** as used in this discovery shall mean Objectors Mary Brezik-Fisher and David Fisher.

INTERROGATORIES

INTERROGATORY NO. 1: Identify the basis for a determination by DEQ that

geotechnical studies demonstrate a scientific basis for the conclusion that the proposed Mine Plan for Brook Mine does not present a risk of subsidence, sloughing or other geotechnical risks and the specific and *mandatory* requirements of the Mine Plan which dictate how the operator is *obligated* to respond in the event geotechnical problems are encountered. Your answer should include the name, address, and telephone number of all individuals or companies which DEQ is aware of that conducted Geotechnical studies for the purpose of investigating the geotechnical conditions in the area where Brook Mine proposes to conduct mining activities, whether the DEQ has conducted its own studies and the DEQ's basis for relying on any studies submitted by Brook Mine.

ANSWER:

INTERROGATORY NO. 2: Identify the basis for a determination by DEQ that hydrologic studies and surface run-off studies demonstrate a scientific basis for the conclusion that the proposed Mine Plan for Brook Mine does not present a risk of degradation to surface and subsurface water quality and quantity or a risk of adverse effects to the cumulative hydrological balance and how the current Mine Plan sets forth specific and *mandatory* requirements which dictate how the operator is *obligated* to respond in the event of hydrological problems or water quality or quantity degradation are encountered. Your answer should include the name, address, and telephone number of all individuals or companies which DEQ is aware of that conducted hydrological or water studies for the purpose of investigating the hydrological and water conditions and risks posed by the mining

activities in the area where Brook Mine proposes to conduct mining activities, whether the DEQ has conducted its own studies and the DEQ's basis for relying on any studies submitted by Brook Mine.

ANSWER:

INTERROGATORY NO. 3: Identify the name of all DEQ personnel (in the Sheridan office, Cheyenne office, Lander office and elsewhere) involved in assessing and evaluating the Brook Mine Permit that is the subject of this contested case hearing. In relation to each person identified, describe which office the person works in, their job title, the particular aspect of evaluation or the tasks undertaken by that individual, and the nature of each individual's input in the permitting process.

ANSWER:

INTERROGATORY NO. 4: Identify the amount of the reclamation/performance bond which DEQ will require for the Brook Mine project, how the amount of the bond was calculated and what information was considered in determining the bond amount. Your answer should also include the identification of any information or sources relied upon in calculating or determining the amount of the reclamation bond.

ANSWER:

INTERROGATORY NO. 5: If reclamation costs exceed the figure you list in your answer to interrogatory no. 4 above, identify with specificity the individuals, companies,

state and local agencies, or any other entities who will be responsible for all additional costs and expenses associated with reclamation exceeding the amount of the established bond and what investigation DEQ has undertaken to confirm that any such entity is capable of satisfying any additional reclamation or remediation expenses pertaining to the mining operations of Brook Mining Company, LLC in Sheridan County.

ANSWER:

INTERROGATORY NO. 6: Identify with particularity the precise documents or information DEQ relied upon in determining that material damage to the hydrologic balance outside the proposed permit area for the Brook Mine would be prevented. If DEQ has not made this determination, please state that fact.

ANSWER:

INTERROGATORY NO. 7: Identify with particularity the precise documents or information DEQ relied upon in determining that both the quantity and quality of water in both the surface and underground water systems that supply the alluvial valley floor of the Tongue River Valley in the area of the Brook Mine would not be materially damaged by the mining and associated activities. If DEQ has not made these determinations, please state that fact.

ANSWER:

INTERROGATORY NO. 8: Identify all witnesses that you will call or may call at any contested case hearing in this matter. In relation to each witness, identify the witness by name, provide contact information, any company or organization which employs the witness and a summary of the material information which you believe this witness may have or testify to at any hearing.

ANSWER:

INTERROGATORY NO. 9: Identify each person whom you expect to call or utilize as an expert at the contested case hearing. In relation to each expert, **regardless of whether or not the expert is a “retained” expert**, identify the following:

1. His or her name, current address and area of expertise, and the name of any company, organization or entity with which the expert is employed or affiliated.
2. Specifically identify and give a comprehensive statement of all opinions the expert will offer at trial or any hearing, and give a detailed explanation of the basis and facts upon which the expert relies for his or her proffered opinion.
3. Identify all publications authored or co-authored by the expert within the last 10 years.
4. Identify all cases in which the expert has testified as an expert witness (by deposition or trial testimony) within the last 4 years. As to each case, identify the approximate date of the case, names of the parties and their lawyers and the court which exercised jurisdiction.
5. Identify all documents supplied to the expert by you and all other documents of any sort reviewed by the expert in relation to this case.

If experts have not yet been identified, fully supplement this response when such experts are identified or concurrently with expert disclosures as may be required by any case

management order or scheduling order.

ANSWER:

INTERROGATORY NO. 10: Identify whether the mine plan requires that domestic and stock wells which are impacted or damaged by mine operations will be repaired and/or replaced if the wells are “registered” with the Wyoming State Engineer’s Office as opposed to being “adjudicated”.

ANSWER:

INTERROGATORY NO. 11: Identify the locations of all monitoring stations on the Tongue River which are included in the mine plan and include in your answer whether monitoring stations are located upstream and downstream of the permit boundary and why DEQ considers the identified stations adequate to monitor for potential adverse impacts on the Tongue River by the Brook mining operation.

ANSWER:

INTERROGATORY NO. 12: What is DEQ’s current understanding of the annual and total coal production estimates presented by Brook Mine and/or Ramaco representatives in the first five years of production, and since those estimates appear to have changed over time, explain how DEQ has been able to accurately evaluate the potential impacts to air quality, water quality and resources, and land resources?

ANSWER:

INTERROGATORY NO. 13: How many surface coal mine applications and permits for new surface coal mines, including highwall mining, in the State of Wyoming have the DEQ offices in Wyoming and the DEQ offices in Sheridan County reviewed and evaluated within the last twenty years?

ANSWER:

INTERROGATORY NO. 14: Identify all seismographic studies, testing and field reports (AML or otherwise) which have been conducted and in which data has been collected in the vicinity of the proposed Brook Mine within the last three years. Include in your answer the identification of the individuals and companies involved in these studies.

ANSWER:

DATED this 7th day of April, 2017.

YONKEE & TONER, LLP

/s/ Jay A. Gilbertz
Jay A. Gilbertz, WSB # 6-3087
Attorney for Objectors
Mary Brezik-Fisher and David Fisher
319 West Dow Street
P.O. Box 6288
Sheridan, WY 82801
Telephone: (307) 674-7451
Telefax: (307) 672-6250

CERTIFICATE OF SERVICE

I, Jay A. Gilbertz, hereby certify that on the 7th day of April, 2017, I served a true and correct copy of the above and foregoing *by electronic transmission*, duly addressed as follows:

Andrew Kuhlmann
Asst. Attorney General
andrew.kuhlmann@wyo.gov

Todd Parfitt
Director, DEQ
Todd.Parfitt@wyo.gov

Alan Edwards
Deputy Director, DEQ
Alan.edwards@wyo.gov

Shannon Anderson
Powder River Basin Resource Council
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Jim Ruby
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jim.ruby@wyo.gov

/s/ Jay A. Gilbertz

Jay A. Gilbertz

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Attorney for Objectors,
Mary Brezik-Fisher and David Fisher

**BEFORE THE ENVIRONMENTAL QUALITY COUNCIL
STATE OF WYOMING**

IN RE BROOK MINE APPLICATION)	
)	
TFN 6 2-025	)	DOCKET 17-4802
)	

**FIRST REQUESTS FOR PRODUCTION TO BROOK MINING COMPANY, LLC
ISSUED BY OBJECTORS MARY BREZIK-FISHER AND DAVID FISHER**

Pursuant to the Wyoming Rules of Civil Procedure, Objectors Mary Brezik-Fisher and David Fisher, by and through their undersigned counsel, submit the following requests for production issued to Brook Mining Company, LLC to be answered separately and fully in writing under oath as follows:

A. DEFINITIONS AND REQUIREMENTS

Each request seeks all information or materials known to you, your agents, employees and attorneys, including information that can be obtained through a diligent review of records or data under your control or available to you. Your answers should include all materials given to you by others, unless such information is protected by the attorney-client privilege

or the work product doctrine. If you claim requested information is not subject to disclosure, comply with the Wyoming Rules of Civil Procedure, including Rule 26(b)(5), by making such a claim expressly and describing the nature of the documents, communications, or things not produced or disclosed in a manner that, without revealing information itself privileged or protected, will enable the undersigned to assess the applicability of the privilege or protection.

When the terms “writing”, “documents”, “tangible items”, or “electronically stored information” are used in these requests, these terms should be construed in the broadest sense and are intended to encompass all forms of information as contemplated and described by Wyoming Rule of Civil Procedure 34, including without limitation, all writings, documents, copies, reproductions, drawings, graphs, charts, photographs, sound recordings, visual recordings, images, and any other data or data compilations stored in any medium from which information can be obtained or translated (if necessary) by the respondent into reasonably usable form.

Supplementation of all responses is required in strict compliance with the Wyoming Rules of Civil Procedure and for any answer that requests information relating to or seeking information on: (a) the identity and location of persons having knowledge of discoverable facts; (b) the identity, location, qualifications and opinions of experts expected to be called at trial; and (c) any answer to a request to which supplemental, new or amended information is obtained that changes, supplements, alters, supports or contradicts any prior response.

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2. **“Mine or Mining Permit”** as used in this discovery shall mean Brook Mine Application TFN 6 2-025 currently pending in Sheridan County, Wyoming.
3. **“DEQ”** as used in this discovery shall mean the Wyoming Department Of Environmental Quality.
4. **“Fishers”** as used in this discovery shall mean Objectors Mary Brezik-Fisher and David Fisher.

The following documents and things are requested:

REQUEST FOR PRODUCTION NO. 1: Produce a copy of all Geotechnical, water quality and air quality studies and reports which have been completed by Brook Mining Company, LLC in relation to the Brook Mine.

RESPONSE:

REQUEST FOR PRODUCTION NO. 2: Produce a complete copy of all information you supplied to the Wyoming Department of Environmental Quality in relation to your reclamation/performance bond.

RESPONSE:

REQUEST FOR PRODUCTION NO. 3: Produce a complete copy of all information you supplied to the Wyoming Department of Environmental Quality in relation to hydrologic studies, models, predictions and plans for protection of both the surface and subsurface water quantity and quality.

RESPONSE:

REQUEST FOR PRODUCTION NO. 4: Produce a copy of any documents or materials identified in your response to interrogatories issued by the Fishers.

RESPONSE:

REQUEST FOR PRODUCTION NO. 5: In relation to each expert witness you will call at the contested case hearing, (**regardless of whether such expert is a “retained” expert or not**) please produce the following information in relation to each expert:

- a) A copy of all documents supplied to the expert;
- b) Any correspondence, email, or other documents exchanged between you and the expert;
- c) A copy of the expert’s *curriculum vitae* or resume; and
- d) Any report prepared by the expert which relates to this case.

If you do not answer this request at this time, fully supplement your response to this request when your experts are identified, or concurrently with any disclosure required pursuant to the contested case hearing.

RESPONSE:

REQUEST FOR PRODUCTION NO. 6: Produce a copy of the document (which may have been a flow chart) which was provided to the Sheridan County Commissioners during a Public Comment Period on March 7, 2017 by Jeff Barron, P.E. on behalf of Brook Mine and/or Ramaco.

RESPONSE:

REQUEST FOR PRODUCTION NO. 7: Produce any documents that evidence the projected or estimated cost, expense or expenditure of the overburden removal to excavate and create the access trenches or openings for providing the access points to facilitate the highwall mining equipment and activities at the Brook Mine facility proposed in Sheridan County, Wyoming.

RESPONSE:

REQUEST FOR PRODUCTION NO. 8: Produce a copy of the video which was presented at the previous contested case hearing with the EQC involving Brook Mine, Padlock and Big Horn Coal which demonstrated mining operations.

RESPONSE:

REQUEST FOR PRODUCTION NO. 9: Produce a copy of all data, summaries testing or other similar data or materials which were developed from or relate to the soil, vegetation, or other samples or materials taken from the Fishers' property.

RESPONSE:

DATED this 7th day of April, 2017.

YONKEE & TONER, LLP

/s/ Jay A. Gilbertz
Jay A. Gilbertz, WSB # 6-3087
Attorney for Objectors
Mary Brezik-Fisher and David Fisher
319 West Dow Street
P.O. Box 6288
Sheridan, WY 82801
Telephone: (307) 674-7451
Telefax: (307) 672-6250

CERTIFICATE OF SERVICE

I, Jay A. Gilbertz, hereby certify that on the 7th day of April, 2017, I served a true and correct copy of the above and foregoing *by electronic transmission*, duly addressed as follows:

Andrew Kuhlmann
Asst. Attorney General
andrew.kuhlmann@wyo.gov

Todd Parfitt
Director, DEQ
Todd.Parfitt@wyo.gov

Alan Edwards
Deputy Director, DEQ
Alan.edwards@wyo.gov

Shannon Anderson
Powder River Basin Resource Council
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Isaac Sutphin and Jeff Pope
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Brooke Collins
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Lynne Boomgaarden
Attorney for Big Horn Coal
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jwacker@crowleyfleck.com
wdrake@crowleyfleck.com

Jim Ruby
Executive Officer, EQC
jim.ruby@wyo.gov

/s/ Jay A. Gilbertz
Jay A. Gilbertz

From: Shannon Anderson
To: [Andrew Kuhlmann](#); [James LaRock](#); [Thomas Sansonetti](#); [Isaac Sutphin](#); [Jeff Pope](#)
Cc: jgilbertz@yonkeetoner.com; [Clayton Gregersen](#); [Lynne Boomgaarden](#); [Jim Ruby](#); todd.parfitt@wyo.gov
Subject: EQC Docket No. 17-4802
Date: Friday, April 07, 2017 2:35:26 PM
Attachments: [2017 4-7 Discovery Request to DEQ.pdf](#)
[2017 4-7 Discovery Request to Ramaco.pdf](#)

Counsel: Please see the attached discovery requests for DEQ and Brook Mining Co.

Don't hesitate to get in touch if there are clarifying questions about the scope of any of these requests.

Happy Friday,
Shannon

Shannon Anderson
Powder River Basin Resource Council
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sanderson@powderriverbasin.org
Join us at www.powderriverbasin.org
Follow us at <https://twitter.com/PRBResCouncil>

3. “Describe” means to specify in detail and to particularize the content of the answer to the question and not just to state the reply in summary or outline fashion, including all pertinent facts about the fact, event, or situation in question, including but not limited to:

- (a) the time, date, and place;
- (b) identification of all persons present or involved;
- (c) identification of all oral or written communications made during the event or situation;
- (d) a detailed description of all actions taken.

4. “Document(s)” is used in the broadest sense contemplated by W.R.C.P. 34. It means all records and other tangible forms of expression, including information in electronic, magnetic, or photographic form, in your possession, custody, or control, including drafts and any copies thereof that contain notes or otherwise differ from the original, however many, by whomever created, however prepared, circulated, sent, received, dated or used, produced or stores (manually, mechanically, electronically, or otherwise), including but not limited to books, papers, files, modeling files and data, notes, correspondence, memoranda, reports, writings, drawings, photographs, telegrams, facsimiles (faxes), telephone logs, contracts, agreements, calendars, datebooks, worksheets, summaries, magnetic tapes, data files, other data compilations from which information can be obtained, electronic mail, disks, diskettes, disk packs, and other electronic media, microfilm, microfiche, and storage devices. It includes all material that relates or refers in whole or in part to the subjects referred to in any Interrogatory and also includes the file jackets, and any labels thereon, in which responsive documents are contained. If any documents contain attachments or appendices, describe the attachments or appendices.

5. “Identify” means:

(a) When applied to an individual person, state the full name, present or last known business address, position with the state or other employer, job description, and telephone number;

(b) When applied to a document, state the title, date(s), author(s), signer(s), intended recipient(s), addressee(s), present location and custodian of the document, and current or last known address of the custodian of the document.

(c) When applied to oral communication, identify the speaker(s) and the person(s) addressed, state the date, place and medium of the communication and describe completely the content of the communication.

6. “Including” means “including, but not limited to.”

7. “Regarding,” “Related to,” and “Concerning” means concerning, referring to, alluding to, responding to, relating to, connected with, commenting upon, in respect of, about, establishing, analyzing, criticizing, touching upon, constituting, supporting, refuting and/or being.

9. “DEQ” refers to the Wyoming Department of Environmental Quality or any agent, officer or employee of DEQ. This includes the Wyoming Division of Land Quality (“Land Division”) and any agent, officer or employee of any of the divisions.

10. “You” or “Your” means DEQ or any agent officer, or employee of DEQ. This includes the Land Division and any agent, officer or employee of any of the divisions.

INSTRUCTIONS

In responding to these Interrogatories and Requests for Production of Documents, please adhere to the following instructions:

1. Furnish all information that is available to you, known to you, or that can be known after reasonable inquiry, including information in the possession, custody, or control of your attorneys, staff, agents, employees, officers, consultants, experts, or other representatives. In answering, you are required to make a reasonable inquiry to ascertain the information or knowledge necessary to respond in detail to such request. Answers must be specific and responsive.

2. If you do not or cannot answer any Interrogatory or Request for Production of Documents after exercising due diligence in attempting to secure the information, please state your answer to the extent possible and indicate your inability to answer the remainder. Include whatever information you may have concerning the unanswered portions and set forth in detail all efforts undertaken to ascertain the requested information.

3. If anything is deleted from a document produced in response to an Interrogatory or Request for Production, state the reason for the deletion, the subject matter of the deletion, and the name of the person or persons who decided to delete the information.

4. If any information in these Interrogatories or Requests for Production is withheld pursuant to an objection or claim of privilege, answer portions of the Interrogatory or Request for Production for which the privilege does not apply, identify the objection or privilege claimed, set forth a specific basis upon which the objection is raised or the privilege is claimed, and provide a privilege log and/or index of documents withheld that includes the following information: a statement identifying the nature of the information withheld, the date and subject matter of any communication containing that information, the names of all persons with knowledge of the information including the author, and the basis for withholding the information.

5. Answer all Interrogatories and Requests for Production under oath, and provide verification from appropriate representatives of DEQ, to support these answers.

6. Provide answers to these Interrogatories and Requests for Production by 5 p.m. on April 21, 2017. If you cannot complete these answers within this time, provide immediate notice to the Resource Council's counsel so that an amicable resolution to the problem can be reached.

7. These Interrogatories and Requests for Production are to be deemed continuing in nature up until the date of the hearing. Supplement all answers as required by W.R.C.P. 26(e).

INTERROGATORIES

1. Identify and describe all persons at DEQ who were involved in any aspect of the permit application review process for Brook's permit and identify and describe their role in the process.

2. Identify and describe any advisors, consultants, or experts, if any, hired or used by DEQ in reviewing Brook's permit application and identify and describe their role in the permit process.

3. Please explain where DEQ is in the process of issuing a Cumulative Hydrologic Impact Assessment (CHIA) for Brook's proposed mine and disclose the anticipated timing of when the CHIA will be finalized. Please identify and describe all DEQ staff, and any advisors, consultants, or experts, if any, from outside the agency involved in the CHIA writing and review process.

4. Please explain how DEQ will incorporate the CHIA's findings into any decisions on Brook's permit application and/or please explain how DEQ will ask the EQC to incorporate the CHIA's findings into any decisions on Brook's permit application.

5. Please explain where DEQ is in the process of determining and designating Alluvial Valley Floors (AVFs) in the area. Please explain what work, if any, DEQ plans to carry out to further determine and designate AVFs in the area and the timing for the proposed actions.
6. Please explain when DEQ plans to issue a State Decision Document and/or a draft permit for Brook's proposed mine.
7. Please disclose how many water wells the groundwater modeling indicates will be impacted by Brook's proposed mine.
8. Please disclose the number and location of surface and ground water monitoring sites and explain how DEQ determined that the monitoring program was sufficient to adequately characterize the hydrologic balance and hydrologic systems of the area.
9. Please explain how DEQ plans to respond to a subsidence occurrence at the mine site.
10. Please describe what evidence, data, and information DEQ relied upon to review Brook's subsidence control plan and determine its effectiveness. Please disclose whether DEQ consulted with any third-parties in reviewing the subsidence control plan.
11. Please explain why DEQ chose not to include information on potential subsidence in the public notice, as described under Chapter 7, Section 3 of DEQ's coal regulations.
12. Please explain and describe any coal fires that DEQ knows to be occurring in the area at the present time or have occurred in the area over the course of the AML and LQD programs.
13. Please provide all information from the AML division regarding efforts to address coal mine fires and subsidence and please list all dates and times the AML division has had to address coal mine fires and subsidence in the area.

14. Please explain how the DEQ reviewed and considered potential impacts to recreation uses in and around the Brook mine permit boundary.

15. Please explain how DEQ evaluated and required buffers around public roads and streams in reviewing Brook's proposed mining operations.

16. Please list all highwall mines that DEQ has previously approved permit(s) for, including mines that are partially highwall and partially surface, room & pillar, or longwall. Identify the DEQ Land Quality Division office that reviewed and approved the permits.

REQUESTS FOR PRODUCTION OF DOCUMENTS

1. Provide a copy of any written findings by DEQ made pursuant to W.S. 35-11-406(n).

2. Provide a copy of any DEQ reports or memorandum used as background to make findings pursuant to W.S. 35-11-406(n), including, but not limited to, the Cumulative Hydrologic Impact Assessment required under Chapter 19 of DEQ's coal mining rules and regulations.

3. Provide a copy of any written findings by DEQ made pursuant to W.S. 35-11-406(m).

4. Provide a copy of any recommendation by the administrator (or other DEQ staff) made pursuant to W.S. 35-11-403(a)(iv) related to the issuance or denial of Brook's permit application.

5. Please provide a copy of "The administrator's estimate of the additional cost to the state of bringing in personnel and equipment should the operator fail or the site be abandoned" that is to be incorporated into the bond amount under W.S. 35-11-417(c)(i).

6. Please provide a copy of any workbooks or spreadsheets used by DEQ in calculating the reclamation bond amount.

7. Please provide a copy of the names and addresses of all surface owners and affected properties who received a copy of the public notice published in December 2016 pursuant to W.S. 35-11-406(j).

8. Please provide a copy of any determinations made by DEQ related to Alluvial Valley Floor designations inside the permit boundary or in the area surrounding the proposed mining operation.

9. Please provide a copy of any draft or final mine permit, state decision document, and/or other written determinations by DEQ related to permit terms and conditions.

10. Please provide a copy of any correspondence that DEQ staff or agents have in their possession, including electronic correspondence or transcripts of voicemails, between the DEQ and EQC related to the referral of the permit application for a contested case hearing.

11. Please provide a copy of any correspondence between the DEQ and any person that submitted an objection letter regarding the objection letter or the referral of objections to the EQC. Letters that are already part of the EQC Docket need not be provided.

12. Please provide a copy of any water quality TMDLs for the Tongue River, Goose Creek, and any other streams or tributaries that are located within the permit boundary.

13. Please provide a copy of any AML reports related to coal mines in the area.

14. Please provide any and all data or other information collected or analyzed as part of the AML division's study of subsidence in Sheridan County. Also provide any draft reports of the Sheridan County subsidence study.

15. Please provide a copy of any searches ran through the Applicant Violator System related to this permit application.

Dated this 7th day of April, 2017.

/s/ Shannon Anderson

Shannon Anderson
Powder River Basin Resource Council
934 N. Main St., Sheridan, WY 82801
(307) 672-5809
sanderson@powderriverbasin.org

CERTIFICATE OF SERVICE

I hereby certify that on April 7, 2017, I served a copy of the foregoing **FIRST SET OF INTERROGATORIES AND REQUESTS FOR PRODUCTION OF DOCUMENTS SERVED ON THE DEPARTMENT OF ENVIRONMENTAL QUALITY** on the following parties by electronic mail, and through the EQC's electronic filing system, which will send a notice of electronic filing to all counsel and parties of record.

Andrew Kuhlmann
James LaRock
Wyoming Attorney General's Office
andrew.kuhlmann@wyo.gov
james.larock@wyo.gov
Attorneys for DEQ

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Director, DEQ
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Attorneys for Big Horn Coal Co.

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Attorney for Mary Brezik-Fisher & David Fisher

/s/Shannon Anderson
Shannon Anderson

Shannon Anderson (Wyo. Bar # 6-4402)
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**BEFORE THE ENVIRONMENTAL QUALITY COUNCIL
STATE OF WYOMING**

IN RE BROOK MINE APPLICATION)
)
 TFN 6 2-025) DOCKET 17-4802

**POWDER RIVER BASIN RESOURCE COUNCIL'S FIRST SET OF
INTERROGATORIES AND REQUESTS FOR PRODUCTION OF DOCUMENTS
SERVED ON BROOK MINING CO., LLC**

In accordance with the Presiding Officer’s Scheduling Order of March 13, 2017, and pursuant to Wyoming Rules of Civil Procedure 26, 33, 34, and the following definitions and instructions, Powder River Basin Resources Council (“Resource Council” or “PRBRC”) requests that Brook Mining Co., LLC or any agent, officer or employee of Brook who has relevant information answer fully and under oath the following Interrogatories and Requests for Production of Documents.

DEFINITIONS

1. “Brook” means the permit applicant Brook Mining Co., LLC and includes any employee, officer, agent, or expert of Brook.
2. “Communication(s)” means conversations, discussions, meetings, telephone calls, notes, letters, memoranda, reports, telecopies of facsimiles (faxes), electronic mail, voice mail, text messages, data or file transfer, pictures or photographs, and all other forms of oral, written or electronic expression by which information may be conveyed, including any mechanical or electronic sound recording or transcription thereof.

3. “Describe” means to specify in detail and to particularize the content of the answer to the question and not just to state the reply in summary or outline fashion, including all pertinent facts about the fact, event, or situation in question, including but not limited to:

- (a) the time, date, and place;
- (b) identification of all persons present or involved;
- (c) identification of all oral or written communications made during the event or situation;
- (d) a detailed description of all actions taken.

4. “Document(s)” is used in the broadest sense contemplated by W.R.C.P. 34. It means all records and other tangible forms of expression, including information in electronic, magnetic, or photographic form, in your possession, custody, or control, including drafts and any copies thereof that contain notes or otherwise differ from the original, however many, by whomever created, however prepared, circulated, sent, received, dated or used, produced or stores (manually, mechanically, electronically, or otherwise), including but not limited to books, papers, files, modeling files and data, notes, correspondence, memoranda, reports, writings, drawings, photographs, telegrams, facsimiles (faxes), telephone logs, contracts, agreements, calendars, datebooks, worksheets, summaries, magnetic tapes, data files, other data compilations from which information can be obtained, electronic mail, disks, diskettes, disk packs, and other electronic media, microfilm, microfiche, and storage devices. It includes all material that relates or refers in whole or in part to the subjects referred to in any Interrogatory and also includes the file jackets, and any labels thereon, in which responsive documents are contained. If any documents contain attachments or appendices, describe the attachments or appendices.

5. “Identify” means:

- (a) When applied to an individual person, state the full name, present or last known business address, position with the state or other employer, job description, and telephone number;
- (b) When applied to a document, state the title, date(s), author(s), signer(s), intended recipient(s), addressee(s), present location and custodian of the document, and current or last known address of the custodian of the document.
- (c) When applied to oral communication, identify the speaker(s) and the person(s) addressed, state the date, place and medium of the communication and describe completely the content of the communication.

6. “Including” means “including, but not limited to.”

7. “Regarding,” “Related to,” and “Concerning” means concerning, referring to, alluding to, responding to, relating to, connected with, commenting upon, in respect of, about, establishing, analyzing, criticizing, touching upon, constituting, supporting, refuting and/or being.

9. “DEQ” refers to the Wyoming Department of Environmental Quality or any agency, officer or employee of DEQ. This includes the Wyoming Division of Land Quality (“Land Division”) and any agent, officer or employee of any of the divisions.

10. “You” or “Your” means Brook or any agent, officer, or employee of Brook.

INSTRUCTIONS

In responding to these Interrogatories and Requests for Production of Documents, please adhere to the following instructions:

1. Furnish all information that is available to you, known to you, or that can be known after reasonable inquiry, including information in the possession, custody, or control of

your attorneys, staff, agents, employees, officers, consultants, experts, or other representatives.

In answering, you are required to make a reasonable inquiry to ascertain the information or knowledge necessary to respond in detail to such request. Answers must be specific and responsive.

2. If you do not or cannot answer any Interrogatory or Request for Production of Documents after exercising due diligence in attempting to secure the information, please state your answer to the extent possible and indicate your inability to answer the remainder. Include whatever information you may have concerning the unanswered portions and set forth in detail all efforts undertaken to ascertain the requested information.

3. If anything is deleted from a document produced in response to an Interrogatory or Request for Production, state the reason for the deletion, the subject matter of the deletion, and the name of the person or persons who decided to delete the information.

4. If any information in these Interrogatories or Requests for Production is withheld pursuant to an objection or claim of privilege, answer portions of the Interrogatory or Request for Production for which the privilege does not apply, identify the objection or privilege claimed, set forth a specific basis upon which the objection is raised or the privilege is claimed, and provide a privilege log and/or index of documents withheld that includes the following information: a statement identifying the nature of the information withheld, the date and subject matter of any communication containing that information, the names of all persons with knowledge of the information including the author, and the basis for withholding the information.

5. Answer all Interrogatories and Requests for Production under oath, and provide verification from appropriate representatives of Brook, to support these answers.

6. Provide answers to these Interrogatories and Requests for Production by 5 p.m. on April 21, 2017. If you cannot complete these answers within this time, provide immediate notice to the Resource Council's counsel so that an amicable resolution to the problem can be reached.

7. These Interrogatories and Requests for Production are to be deemed continuing in nature. Supplement all answers as required by W.R.C.P. 26(e), up until the date of the hearing.

INTERROGATORIES

1. Identify and describe all persons employed by Brook Mining Co., LLC.

2. Identify and describe any advisors, consultants, or experts, if any, hired or used by Brook in preparing or reviewing your permit application. Please describe the qualifications of these individuals.

3. Identify and describe all subsidiary and/or parent companies/entities related to Brook.

4. Please explain the relationship between Brook and Ramaco Carbon, LLC, if any. Please explain whether Brook considers the proposed "industrial park" and "research center" as part of its mining project and if not, why not.

5. Please explain efforts to market coal from the proposed mining operation and please describe any and all contracts, if any exist, for sale of coal to entities outside the permit boundary.

6. Please describe any plans for blasting in the area, including proposed blasting timing and amounts. Describe and identify any planned restrictions on blasting, including weather conditions, weekends, holidays, etc.

7. Please describe any relationship Brook has with Cloud Peak Energy, including but not limited to agreements for surface use, ingress/egress, rights of way, etc.

8. Please disclose whether Brook has obtained surface owner access or orders in lieu of consent from all surface owners within the permit boundary, including the BNSF.

9. Please disclose whether Brook is aware of coal fires in the area at the present or in the past.

10. Please disclose whether Brook is aware of subsidence in the area at the present or in the past.

REQUESTS FOR PRODUCTION OF DOCUMENTS

1. Provide a copy of all state and federal permits received by Brook for the proposed project.

2. Provide a copy of any permit applications to MSHA.

3. Provide a copy of the traffic control plan referenced in the permit application.

4. Provide a copy of any agreements, if any, with Cloud Peak Energy.

5. Please provide any and all documents, data, or other evidence that demonstrate the amount of water saturation in the targeted coal seams and what the groundwater inflow rates are in relation to the proposed mine excavations.

6. Provide a copy of any other subsidence control plans prepared by Jeff Barron at any time in his career.

7. Provide a copy of Brook's Exhibit 45 provided to the EQC as part of Docket 16-1601.

Dated this 7th day of April, 2017.

/s/ Shannon Anderson

Shannon Anderson
Powder River Basin Resource Council
934 N. Main St., Sheridan, WY 82801
(307) 672-5809
sanderson@powderriverbasin.org

CERTIFICATE OF SERVICE

I hereby certify that on April 7, 2017, I served a copy of the foregoing **FIRST SET OF INTERROGATORIES AND REQUESTS FOR PRODUCTION OF DOCUMENTS SERVED ON BROOK MINING CO., LLC** on the following parties by electronic mail, and through the EQC's electronic filing system, which will send a notice of electronic filing to all counsel and parties of record.

Andrew Kuhlmann
James LaRock
Wyoming Attorney General's Office
andrew.kuhlmann@wyo.gov
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Director, DEQ
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Attorneys for Big Horn Coal Co.

Jay Gilbertz
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jgilbertz@yonkeetoner.com
Attorney for Mary Brezik-Fisher & David Fisher

/s/Shannon Anderson
Shannon Anderson

From: Clayton Gregersen
To: [Shannon Anderson](#); andrew.kuhlmann@wyo.gov; james.larock@wyo.gov; jjilbertz@vonkeetoner.com; tlsansonetti@hollandhart.com; insutphin@hollandhart.com; jspope@hollandhart.com; imkelley@hollandhart.com; csvec@hollandhart.com; [Jim Ruby](#); todd.parfitt@wyo.gov; alan.edwards@wyo.gov; bpcharlie@wbaccess.net
Cc: [Lynne Boomgaarden](#); [Wendy Drake](#)
Subject: C1-Objection Exhibit E - ADD_D5_3_EX_2_GEO_CROSS_SECTIONS-XS_KK_SHT12.PDF; C1-Objection Exhibit D - 4-Exhibit_A-16_Historic_Cross_Section_D-D_.PDF; C1-Objection Exhibit C - Cross Section DD KK Plan View Map.PDF; C1-Objection Exhibit B - FIGURE MP-6.1-1
Date: Monday, April 03, 2017 4:26:46 PM
Attachments: [C2-Objection Exhibit A FIGURE 4.9-11 from 03 MINE PLAN Pages from Replac....pdf](#)
[C2-Objection Exhibit B Well Drawdown Table.pdf](#)
[C3-Objection Exhibit A Coal Burn with Mine Seq round 3 pits Topo.pdf](#)
[Attachments.html](#)

All,

Please find the attached exhibits referenced in Mr. Gerlach's expert report previously provided. Because the exhibits were too large to fit in one email, sever exhibits have been provided in the below ShareFile link. Please let me know if you have any troubles accessing any of these documents.

Thanks.

ShareFile Attachments

Expires May 03, 2017

C1-Objection Exhibit A - EX_4-1_COAL_REM...(2).PDF	5.2 MB
C1-Objection Exhibit B - FIGURE MP-6.1-1 O...(2).PDF	425.7 KB
C1-Objection Exhibit C - Cross Section DD K...(2).PDF	938.4 KB
C1-Objection Exhibit D - 4-Exhibit_A-16_His...(2).PDF	401.7 KB
C1-Objection Exhibit E - ADD_D5_3_EX_2_...(2).PDF	408.9 KB
C1-Objection Exhibit F - 01 BHC GW RESTO...(2).PDF	20.5 MB

Download Attachments

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Clayton Gregersen
Crowley Fleck PLLP

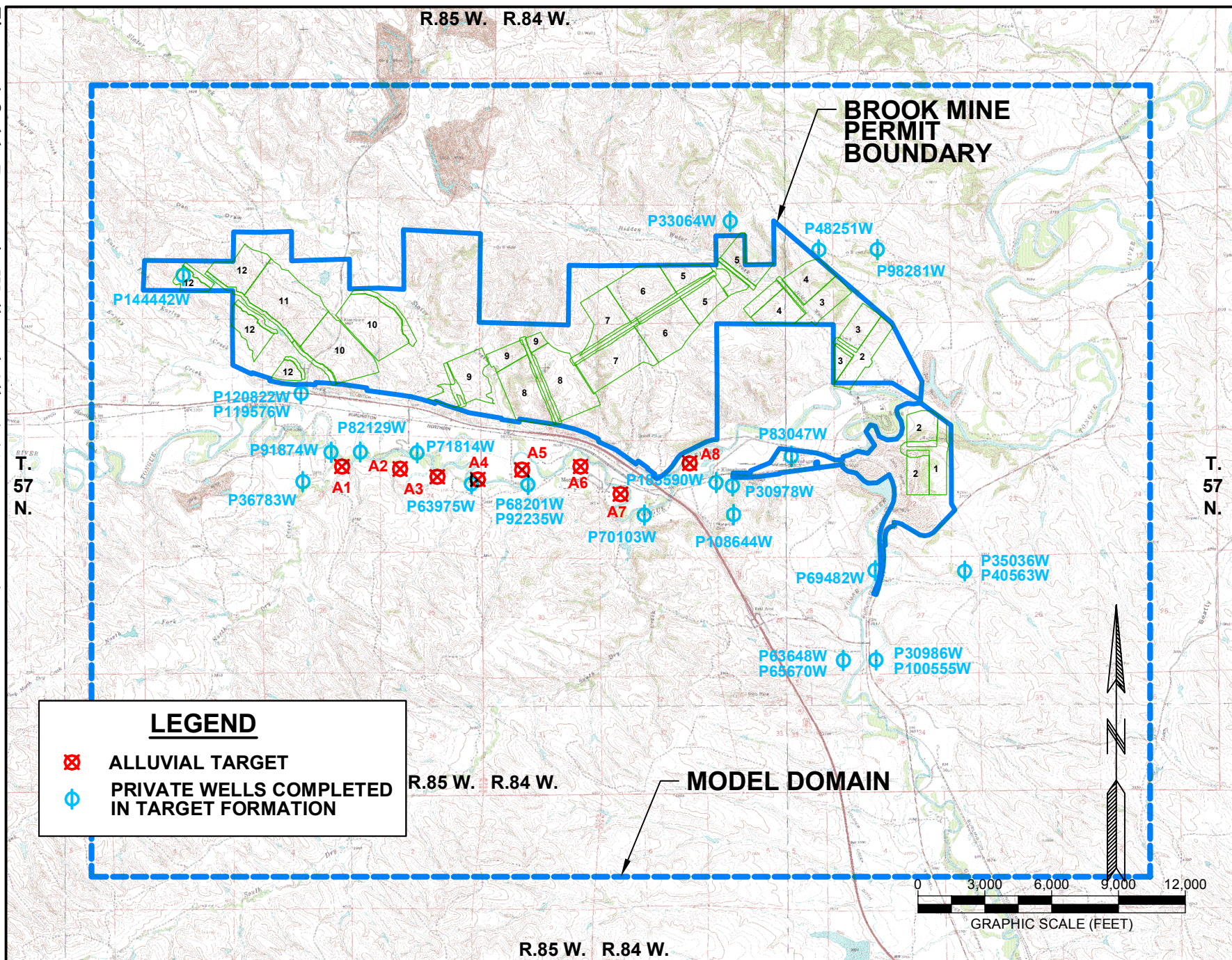
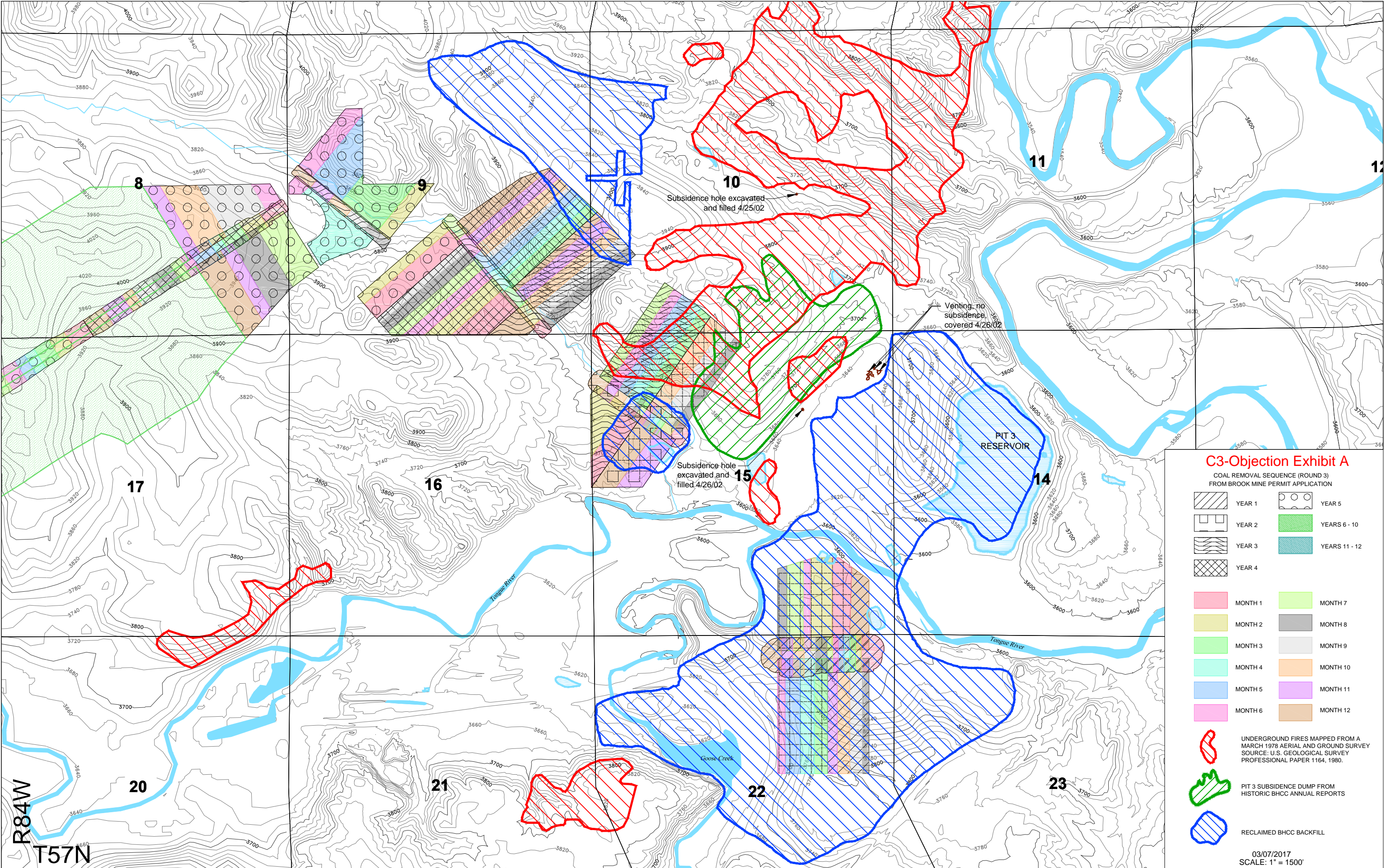


Figure 4.9-11. Domestic Well and Alluvial Target Locations.

C2-Objection Exhibit B

Maximum Modeled Well Drawdown Relative to Well Completion Aquifers

Permit Number	Drill Date	Total Depth	Screen Interval (ft)	Aquifer Description	Model Layer	Model Maximum Drawdown
P82129W	10/01/1997	20	6-20	Sand and Gravel, Blue Shale	4	0.8
P120822W	10/10/2000	40	20-40	Gray shale and Alluvial Gravel	4	1.5
P91874W	03/08/1994	22	6-22	Sand Clay, Fine gravel, Dark Clay	4	0.5



C3-Objection Exhibit A

COAL REMOVAL SEQUENCE (ROUND 3)
FROM BROOK MINE PERMIT APPLICATION

	YEAR 1		YEAR 5
	YEAR 2		YEARS 6 - 10
	YEAR 3		YEARS 11 - 12
	YEAR 4		

	MONTH 1		MONTH 7
	MONTH 2		MONTH 8
	MONTH 3		MONTH 9
	MONTH 4		MONTH 10
	MONTH 5		MONTH 11
	MONTH 6		MONTH 12

UNDERGROUND FIRES MAPPED FROM A MARCH 1978 AERIAL AND GROUND SURVEY
SOURCE: U.S. GEOLOGICAL SURVEY PROFESSIONAL PAPER 1164, 1980.

PIT 3 SUBSIDENCE DUMP FROM HISTORIC BHCC ANNUAL REPORTS

RECLAIMED BHCC BACKFILL

03/07/2017
SCALE: 1" = 1500'

490 N 31st Street, Suite 500 TW2
Billings, MT 59101
406-255-7335
cgregersen@crowleyfleck.com

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From: Clayton Gregersen
To: [Shannon Anderson](#); andrew.kuhlmann@wyo.gov; james.larock@wyo.gov; jgilbertz@yonkeetoner.com; tlsansonetti@hollandhart.com; insutphin@hollandhart.com; jspope@hollandhart.com; jmkelley@hollandhart.com; csvec@hollandhart.com; [Jim Ruby](#); todd.parfitt@wyo.gov; alan.edwards@wyo.gov; bpcharlie@wbaccess.net
Cc: [Wendy Drake](#); [Lynne Boomgaarden](#)
Subject: EQC Docket No. 17-4802, BHCC Expert Reports
Date: Monday, April 03, 2017 4:22:48 PM
Attachments: [Exhibit B-Gerlach.pdf](#)
[BHCC Expert Report Disclosure \(2\).pdf](#)
[BHCC Expert Report Disclosure Ex. C \(BHCC objections\) \(2\).pdf](#)
[BHCC Expert Report Disclosure Ex. A \(Todd\) \(2\).pdf](#)

All,

Please find the attached Expert Report Disclosure of Big Horn Coal Company along with the corresponding exhibits that were filed with the EQC today for Docket No. 17-4802. In order to ensure that all parties receive electronic copies of the exhibits referenced in Mr. Gerlach's report, I will send a follow-up email containing a link to those documents. Please let me know if you have any questions.

Clayton Gregersen
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Notice: This electronic mail transmission may constitute an attorney-client communication that is privileged at law. It is not intended for transmission to, or receipt by, any unauthorized persons. If you have received this electronic mail transmission in error, please delete it from your system without copying it, and notify the sender by reply e-mail or by calling Crowley Fleck PLLP, so that our address record can be corrected.

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EXHIBIT B

EXPERT REPORT IN THE MATTER OF
BIG HORN COAL COMPANY V. BROOK MINE

Prepared for Big Horn Coal Company, Sheridan, Wyoming

Prepared by Paul J. Gerlach, PG, President, Aqua Terra Consultants, Inc., Sheridan, Wyoming

March 28, 2017



INTRODUCTION.

My name is Paul (Joe) Gerlach. I am a registered Professional Geologist in the state of Wyoming (PG 83), and the co-founder and President of Aqua Terra Consultants, Inc., a S-Corporation in Sheridan, Wyoming. I am an expert in the field of hydrogeology, also known as groundwater hydrology. I am a former employee of Peter Kiewit Sons Company, former owner of Big Horn Coal Company, and I have frequently provided professional services to Big Horn Coal Company since leaving that employment. During the past 40 years, I have testified as an expert witness in two states and have never been denied qualification as an expert. I have not testified as an expert witness in the last four years. I have not published any documents in the past 10 years. A true and correct copy of my *curriculum vitae* is shown at Attachment 1 to this report. My fee Schedule and Policies is shown at Attachment 2 to this report.

MY INVOLVEMENT IN THIS MATTER.

I was initially retained in this matter on January 6, 2017 by Mr. Jordan Sweeney of Lighthouse Resources Inc., owner of Big Horn Coal Company. I was retained to review and render opinions about the adequacy of the Brook Mine permit application in identifying and assessing potential hydrologic and other impacts associated with Brook Mine's proposed coal mining operation within and in the vicinity of the Big Horn Coal Mine.

Since the date of my retention, I have reviewed certain materials provided (see next section of this report for details), corresponded via telephone and email with Mr. Sweeney and with Mr. Clayton Gregersen and Ms. Lynne Boomgaarden, attorneys with Crowley Fleck, PLLP, and reviewed technical literature related to underground coal mine fires within and adjacent to the Brook Mine permit area.

MATERIALS PROVIDED AND OBTAINED.

I have been provided with or obtained the materials itemized below:

- Copies of digital files from the Wyoming Department of Environmental Quality, Land Quality Division provided to a representative of Big Horn Coal Company on December 12, 2016, which allowed review of specified relevant portions of Brook Mine's most recent and accurate permit application
- Objections to the Brook Mine permit application from various landowners, the Powder River Basin Resource Council and Big Horn Coal Company posted on-line (<https://eqc.wyo.gov/Public/Dockets.aspx>) by the Wyoming Environmental Quality Council on January 30, 2017 under Docket 17-4801.
- Text and drawings from Big Horn Coal Company's mine permit No. 213 relating to the Reclamation Plan and relating to geologic descriptions contained in Appendix D5.

- The report "Effects of Coal Mine Subsidence in the Sheridan, Wyoming, Area", 1980, US Geological Survey Professional Paper 1164
- Wyoming State Engineer's Office on-line website database of water rights records, groundwater well completion data and geologic logs
- Big Horn Coal Company Reclamation History, Vol. 2, Section 6.2, Permit 213-T5 Change #9, Big Horn Mine Groundwater Restoration Demonstration, Approved August 8, 2002

EXHIBITS CREATED IN SUPPORT OF MY OPINIONS

I created the following exhibits that support and are formative to the opinions that I have developed. In all cases, the exhibits are intact original materials or selected sets of components of original materials available in the public domain as taken from the Brook Mine permit application, the Big Horn Coal Mine permit application, published professional reports, and groundwater rights files of the Wyoming State Engineer's Office.

C1-Objection Exhibit A: *Exhibit MP.4-1 Coal Removal Sequence* (original material from Brook Mine application).

C1-Objection Exhibit B: *Figure MP-6.1-1 Showing Brook Mine Proposed Trenches and Highwall Mining Panels* (original material from Brook Mine application).

C1-Objection Exhibit C: This drawing has no formal title and is a collection of materials copied from the Brook Mine application (location of geologic cross section K-K' and locations of Brook Mine panels), and materials copied from the Big Horn Coal Mine application (location of geologic cross section D-D', area of reclaimed Big Horn Coal Mine backfill, and area of shallow water table conditions within Brook Mine TR-1 mining area).

C1-Objection Exhibit D: *Pit One Truck-Shovel Operation Geologic Cross-Section D-D'* (original material from Big Horn Coal Mine application with line added to denote the shallow groundwater table elevation 3600 feet across the section).

C1-Objection Exhibit E: *Addendum D5-3 Exhibit 2 Geologic Cross Section K-K'* (original material from Brook Mine application with line added to denote the shallow groundwater table elevation 3600 feet across the section).

C1-Objection Exhibit F: *Big Horn Coal Company Big Horn Mine Groundwater Restoration Demonstration* (original material from Big Horn Coal Reclamation History, Vol. 2, Section 6.2).

C2-Objection Exhibit A: *Figure 4.9-11. Domestic Well and Alluvial Target Locations* (original material from Brook Mine application).

C2-Objection Exhibit B: *Maximum Modeled Well Drawdown Relative to Well Completion Aquifers* (original material taken from Table 4.9-1 of Brook Mine application combined with information downloaded from the groundwater rights files of the Wyoming State Engineer's Office).

C3-Objection Exhibit A: This drawing has no formal title and is a collection of materials copied from the Brook Mine application (mine panel locations showing years and months of proposed mining), copied from the Big Horn Coal Mine application (areas of reclaimed backfill, Pit 3 Subsidence Dump area and notes identifying miscellaneous areas of subsidence hole reclamation), and copied from US Geological Survey Professional Paper 1164 (areas of underground coal fires).

OPINIONS.

Based on my review of the materials listed above, my previous experiences studying the hydrogeology of the Big Horn Mine area, and discussions with individuals knowledgeable of the mine's reclamation and hydrologic monitoring data, I have developed the following opinions:

1. Brook Mine Permit Application – Section MP.4; Exhibit MP.4-1; Section MP.5; Section MP.13; Addendum MP-6

Section MP.4 and Exhibit MP.4-1 (see C1-Objection Exhibit A) provide plans for the development of a highwall mining trench through, and the development of highwall mining panels beneath, reclaimed backfill of BHCC Pits 1 and 2 adjacent to Goose Creek and the Tongue River in the southeastern portion of the Brook Mine permit area. The trench would penetrate through the bottom of the backfill to allowing mining of Carney coal found about 70 feet beneath the backfill. The backfill of the proposed trench area averages about 90 feet thick. The northeast corner of the highwall panel area appears on Exhibit MP.4-1 to be equivalent to the Brook Mine permit boundary, and would be less than 100 feet from the bank of the Tongue River. On Figure MP-6.1-1 of Addendum MP-6-11 (see C1-Objection Exhibit B), the highwall mining panels are shown even nearer to the Tongue River channel, and the reason for the disparity between the figure and Exhibit MP.4-1 is unexplained. There are off-site impact risks associated with the permit's disturbance, affected and permit boundaries all being equivalent to the mining panel boundary in this most environmentally sensitive area adjacent to the bank of the Tongue River. The affected area boundary shown on Exhibit MP.4-1 around the other proposed mining panels typically extends well beyond the disturbance boundary for reasons unexplained in the Mine Plan.

Mine Plan Section MP.4, together with all Mine Plan text inclusive of Section MP.13 and Addendum MP-6, are silent on the subject of the special textural and hydrologic characteristics of the proposed southeastern highwall mining area in Sections 15 and 22, T57N, R84W. The area is unique in that the strata overlying the coal to be mined includes a thick layer of unconsolidated, saturated backfill exhibiting shallow groundwater elevations of 20 feet or less below ground surface where existing ground elevations are 3600 feet MSL and lower (see C1-Objection Exhibit C, C1-Objection Exhibit D and C1-Objection Exhibit E). The water surface in BHCC's postmining Reservoir 14 in the SESE Sec. 15 is an expression of the

groundwater table. The groundwater throughout Pits 1 and 2 is directly connected to and recharged by Goose Creek and the Tongue River, as documented in Big Horn Mine's Reclamation History, Groundwater Restoration Demonstration (GRD) approved by the WDEQ/LQD as Change No. 9 to Permit 213-T5 on August 8, 2002 (see C1-Objection Exhibit F, pages 4, 5, 13, 14 and 35, and Exhibit 1 of the GRD). C1-Objection Exhibit E (Brook Mine geologic cross section K-K'-) fails to show the groundwater table elevation in the BHC mine backfill adjacent to and recharged by Goose Creek and Tongue River, and is thereby very misleading in suggesting that groundwater is found only in the Carney and Masters coal seams. The GRD verifies that the Pits 1 and 2 backfill resaturated very rapidly, indicative of unconsolidated, porous material connected to perennial stream recharge sources nearby. Mine Plan Section MP.4 is silent on the subject of managing massive sloughing that may occur in the saturated and nonsaturated backfill of the southeastern highwall mining area as the highwall mining trenches are excavated through the backfill, Monarch-Carney interburden and the Carney coal. These facts considered, the Brook Mine permit application inadequately addresses the requirements of Wyoming Coal Rules and Regulations Chapter 2, Section 2(v)(A)(I)(1.), Chapter 2, Section 4(a)(xii)(A), Chapter 2, Section 5(a)(i)(D)(VII) and Chapter 4, Section 2(s). Section MP-5 of the Brook Mine Plan also fails to present an alternative water management and treatment plan to be followed should groundwater inflow volumes exceed infrastructure design capacities.

The assessment of potential land subsidence and the remediation plan presented for land subsidence in Addendum MP-6 is inadequate relative to protecting the value and function of adjacent lands, particularly for protecting the stability of the Tongue River and the quality of shallow groundwater connected to the river. Addendum MP-6 does not absolutely discount the possibility of land subsidence above the highwall miner holes, nor does it provide a plan for the discontinuation of any southeastern area highwall mining should subsidence occur in the lowlands contiguous to Tongue River or Goose Creek. The environmental implications of subsidence developing adjacent to Tongue River and Goose Creek are so severe as to warrant, at a minimum, a permit commitment to temporarily or permanently cease all mining throughout all of the southeastern highwall mining area should any subsidence develop in any of the area at any time. The permit's plan for "backfilling will commence within 12 months of a subsidence location being identified if self-healing is not providing sufficient remediation" (Section MP-6.4, Addendum MP-6) is environmentally unacceptable for the southeastern highwall (TR-1) mining area because: 1) the stability and alignment of Goose Creek and Tongue River could be jeopardized should subsidence occur, and; 2) any groundwater quality impacts associated with underground coal fires developing in mine openings would have direct and essentially immediate access to Goose Creek and Tongue River via the shallow groundwater table. Section MP-6.4 and Addendum MP-6 of the Brook Mine permit application inadequately address the requirements of Wyoming Coal Rules and Regulations Chapter 2, Section 2(a)(v)(A)(I)(1.) and Chapter 4, Section 2(r)(i)(C). As opposed to the requirements of Coal Rules and Regulations Chapter 7, Section 2(b)(v), the TR-1 area mine plan

does not avoid exchange of groundwater between an aquifer used for domestic and agricultural uses (Tongue River and Goose Creek alluvium) and other strata.

2. Brook Mine Permit Application – Section MP.5.9; Section MP.6.2; Addendum MP-3; Section MP.8

The groundwater model of Addendum MP-3 was improperly constructed and executed because the model does not recognize the unique textural and hydraulic characteristics of saturated backfill in BHCC's Pits 1 and 2, but instead simulates the backfill in the same fashion as native overburden strata (see Section 4.0 of Addendum MP-3). Section 2.5.1 of Addendum MP-3 states "no site-specific hydraulic conductivity information is available for the alluvial areas and over/interburden (model) layers". In fact, hydraulic conductivity data are available for the alluvium in the Big Horn Mine permit document, and hydraulic conductivity data are available for backfill from former monitor wells in the Pit 1 and Pit 2 area and for the Plachek Pit backfill. The backfill data are provided in the GRD referenced under Objection No. 1 above. Hydraulic conductivity values assigned to the spoils together with all other "overburden" strata in the model are very small relative to those shown for nearly all backfill wells in the GRD. The groundwater model ignores determination of the spatial extent of drawdown in the water table of Pit 1 and Pit 2 backfill that is connected to the water table in Tongue River and Goose Creek alluvium, which in turn is supplied by flows in both streams. The text of Section MP.6.2.3 states "Drawdowns of the overburden were not modeled and only isolated sands where encountered are expected to be affected".

Section 4.9 and Figure 4.9-11 of Addendum MP-3 (see C2-Objection Exhibit A) shows where the groundwater model was used to predict water table drawdown in Tongue River valley alluvium at "alluvial target" points distributed over about a three-mile reach of the valley floor. Section 4.9 states that "the actual drawdown in the alluvial targets induced from mining is estimated to be less than 0.5 feet". The same text goes on to explain "maximum impacts are expected to occur in areas where the overburden is thin (near coal seam outcrops) and are of short duration". Clearly, the groundwater model causes drawdown in Tongue River alluvium only as a result of the model simulating drawdown in the upper Carney coal through Masters coal stratigraphic sequence, and not as a result of excavating through BHCC's reclaimed saturated backfill of the Pits 1 and 2 area (Brook Mine TR-1 mining area). The alluvial target points are positioned well upstream of the Brook Mine TR-1 mining area, and thereby avoid showing alluvial water table drawdown in the TR-1 area especially if the model were properly executed to include mining of the saturated backfill in BHCC's Pits 1 and Pits 2. Neither does the groundwater model explore potential permanent groundwater elevation changes associated with the highwall mining panels acting as collector drains to the backfill and alluvial water table via the backfilled highwall trench pits.

Table 4.9-1 of the Brook Mine groundwater model (Addendum MP-3) identifies maximum drawdown values predicted by the model at existing stock and domestic wells. Well locations are shown on Figure 4.9.11 (see C2-Objection Exhibit A).

C2-Objection Exhibit B provides much of the same information as shown on Table 4.9-1 for three of the wells, but also provides the stratigraphic descriptions of the aquifers supplying each well as copied from the water rights files of the Wyoming State Engineer's website. All three wells are positioned near Tongue River, and all three stratigraphic descriptions are typical of alluvium. Table 4.9-1 indicates that the maximum drawdown at these wells will range from 0.5 feet to 1.5 feet, but the drawdown is assigned to layer 4 of the groundwater model, which is lower Carney coal and not model layer 1 overburden inclusive of alluvium. If the maximum drawdown predicted at these wells is truly intended to represent what will happen in these wells, then the predictions conflict with the statement on page MP-3-5 of Addendum MP-3 that "estimated impacts within the Tongue River alluvium will be minor and in most places not measurable". If, on the other hand, the maximum predicted drawdowns are not intended to represent drawdowns that will occur in the wells but in model layer 4 instead, then Table 4.9-1 is very misleading and it would thereby appear that the groundwater model does not attempt to predict drawdown that will occur within existing supply wells.

Table 4.9-2 of Addendum MP-3 tracks model-predicted groundwater inflow rates to Brook Mine, and shows that inflow rates will be greatest, from 65.4 gpm to 74.5 gpm, during the first two years of mining (TR-1 area). Text describing Table 4.9-2 suggests that the inflow rates will be relatively high in the TR-1 area because the coal there is fully saturated. The text is silent, however, on drawing any connection between inflow rates and mining through the saturated backfill of BHCC Pits 1 and 2. Section MP.8 of the Mine Plan states "It is estimated that the total water use will be approximately 120 million gallons per year (approximately 328,200 gallons per day) with an expected variability of plus or minus 20 percent." Mine Plan Table MP.8-1 lists "pit inflows" and "surface water rights" as being the two primary sources of water for the mine, but no specific surface water right is identified and no information is provided as to whether or not the State of Wyoming has approved any transfer of an existing surface water right to industrial uses. Table MP.8-1 and Section MP.8 do not identify the specific mining areas or strata sources that will supply the groundwater, but presumably it would be the TR-1 area which will be reclaimed late in the mine life. As stated earlier, the Brook Mine groundwater model does not simulate groundwater inflow from BHCC's saturated backfill of the TR-1 area; consequently, any consumptive groundwater losses from that aquifer source are not included in the groundwater drawdown predictions.

The Brook Mine Plan is devoid of a hydrologic budget identifying specific groundwater sources targeted for consumptive mine uses, and the determination of what would remain of groundwater and surface water supplies while the mine supplies its industrial water needs. The value of the existing surface estate and future options for developing the surface estate could be marginalized by Brook Mine's consumptive water uses. The Brook Mine permit application fails to identify alternative surface and groundwater supply sources, and thereby does not comply with the requirements of Wyoming Coal Rules and Regulations Chapter 2, Section 5(a)(ix)(E) and Chapter 2, Section 5(a)(xi). The Brook Mine permit application fails

to adequately describe the surface water and groundwater and related geology in the permit area sufficient to assess the probable hydrologic consequences (PHC) as required under Coal Rules and Regulations Chapter 2, Section 4(a)(xiv). The Brook Mine permit application does not provide a complete PHC determination required under Coal Rules and Regulations Chapter 2, Section 5(a)(x) and Chapter 2, Section 5(a)(xi). The Brook Mine permit application does not provide sufficient information on hydrologic changes which may be reasonably expected as a result of its operation as necessary for the Administrator to determine the probable cumulative hydrologic impacts on surface and groundwater systems, as required by Coal Rules and Regulations Chapter 19, Section 2.

3. Brook Mine Permit Application – Section MP.11; Addendum MP-5

The fire control plan referenced in Section MP.11 and presented in Addendum MP-5 describes measures to be taken to prevent and control fires in the mine pits, fires in the mine's processing and shop facilities, equipment fires and rangeland fires. Remarkably, Addendum MP-5 fails to acknowledge the existence of historic underground coal mine fires in some of the proposed panel mining areas. The Mine Plan and Addendum MP-5 do not provide plans to control and extinguish new subsurface coal fires that may develop or existing subsurface coal fires that may become rekindled or enlarged as a result of the highwall mining panels that will be opened outboard of the highwall trench openings.

C3-Objection Exhibit A is a drawing showing the approximate extent of underground coal mine fires in the area of proposed highwall mining in Sections 10 and 15, T57N, R84W, as reported by the U.S. Geological Survey in 1980. The fires in this particular area originated with mining of the Monarch coal. This and other nearby historic underground mines have long been known to exhibit numerous subsidence features and underground coal mine fires, and in the late 1980s BHCC received approval from the WDEQ/LQD to permanently place nearly 10 million bank cubic yards of overburden over the area shown on C3-Objection Exhibit A in an attempt to reclaim the subsidence and control the fire. That unique reclamation feature is known as the Pit 3 Subsidence Dump in Big Horn Mine's reclamation history. The proposed highwall mining will develop mine openings in the Carney and Masters coal seams beneath the Monarch seam in areas that are known to still exhibit evidence of underground coal fires. Plumes of steam and smoke have been observed again over the general area of Sections 10 and 15 this winter of 2016-2017. These observations indicate that, in places, the perimeter of the historic subsurface coal seam fires has expanded notable distances from the referenced 1980 boundary delineation.

The subsidence control plan of Addendum MP-6 does little to guarantee the long-term protection of the surface estate especially where highwall mining panels will be driven beneath underground coal mine fires having a long history of activity. Section MP-6.2 of Addendum MP-6 provides numerical calculations for subsidence chimney heights, but there is no investigation of the potential that the historic mine fires may have compromised the structural integrity of strata

underlying the fires and overlying the coals targeted for highwall panel mining (the interburden), leaving the interburden more prone to subside than normal. Highwall mining beneath or adjacent to pre-existing underground mine fires is particularly problematic because of the potential for oxygen and water to be transmitted from the highwall mining openings to "hotspots" in the seams already burning via highwall trenches or via fractured or subsided interburden above the panel openings. There is no legitimacy with the plan stated in Section MP-6.4 of Addendum MP-6 which states "Backfilling will also be performed if it is determined that the introduction of water and oxygen could contribute to spontaneous ignition of the remaining coal not extracted from the highwall mining operations". It is common knowledge in the mining industry that oxygen and water are key catalysts in causing spontaneous combustion in coal, whether the coal be in mine openings or in stockpiles. The introduction of additional water and air to a coal seam already on fire is especially problematic.

Section MP-6.3 of Addendum MP-6 commits to maintaining highwall mining mapping and subsidence documentation in a subsidence report that will be available for inspection. The Mine Plan does not commit to freely submitting the highwall mining mapping and subsidence documentation report to all owners of surface estate within the Brook Mine permit area. The Subsidence Monitoring and Assessment reporting of Section MP-6.3 does not include mapping, photographing and describing all evidence of surface or underground coal fires occurring within the Brook Mine permit area whenever such evidence becomes available throughout the life of the mining and post-mining periods. Those having surface estate adjacent to Brook Mine operations may experience greater risk of damages caused by the development of underground coal fire conditions whose reporting is not available in the public domain.

The above facts considered, this report contends that the Brook Mine permit application falls far short of addressing requirements of Coal Rules and Regulations Chapter 2, Section 5(a)(iv), Chapter 7, Section 4, Chapter 2, Section 2(a)(v)(A)(I)(c.), Chapter 4, Section 2(h)(ii), and Chapter 4, Section 2(w).

I declare under penalty of perjury that the foregoing is true and correct.



Paul J. Gerlach
President
Aqua Terra Consultants, Inc.

**ATTACHMENT 1
CURRICULUM VITAE**

PAUL J. GERLACH

March 28, 2017

Name: P. Joe Gerlach

Position: Geologist/Hydrogeologist, Firm Principal

Education: B.A., Geology, 1974, Miami University of Ohio
M.S., Geology, 1976, South Dakota School of Mines and Technology

Credentials: Licensed Professional Geologist, Wyoming P.G. No. 83
MSHA-Certified (Surface/Coal Mining)
Member Wyoming Geological Association

Experience:

1991-Present Principal, Aqua Terra Consultants, Inc.
1982-1991 Hydrogeologist/Project Manager, Western Water Consultants, Inc., Sheridan, WY
1980-1982 Hydrogeologist/Office Manager, Hydrometrics, Inc., Sheridan, WY
1976-1980 Hydrogeologist/Director of Hydrologic Studies, PKS Co., Sheridan, WY
1974-1976 Research Assistant, South Dakota School of Mines, Rapid City, SD

Skills and Responsibilities:

- Corporate direction and overall management of the firm.
- Senior consultant and technical advisement for geologic and hydrologic issues, including geologic characterization, mineralogy, surface water characterization and groundwater hydrology.
- Manager and principal investigator for mine planning and permitting of more than 20 coal-strip mines in Wyoming, Montana, Colorado, New Mexico and Alaska.
- Alluvial Valley Floor investigations and the hydrologic components of wetlands inventories and mitigation plans for coal mine permit applications.
- Design and construction supervision of mine-pit groundwater dewatering and pressure grouting systems.
- Complete data collection and analytical expertise for overburden quality investigations in mining.
- Aquifer reclamation designs for groundwater recharge and conveyance in postmining reclamation.
- Expertise in EIS and EA preparation for mining, methane production and oil and gas production.
- Design and construction supervision of water-supply, industrial, domestic, stock and dewatering wells.
- Groundwater modeling of hydrologic systems applied to mining impacts and dewatering systems.
- Expertise in groundwater quality monitoring, data analysis and contaminant transport modeling.
- Location, study and drilling supervision of CBM wells, and evaluation and design of water management plans for landowners and CBM producers.
- Expert witness experience in cases involving groundwater rights, groundwater movement and water well construction.
- Wetland design and preparation of Corps of Engineer permits.

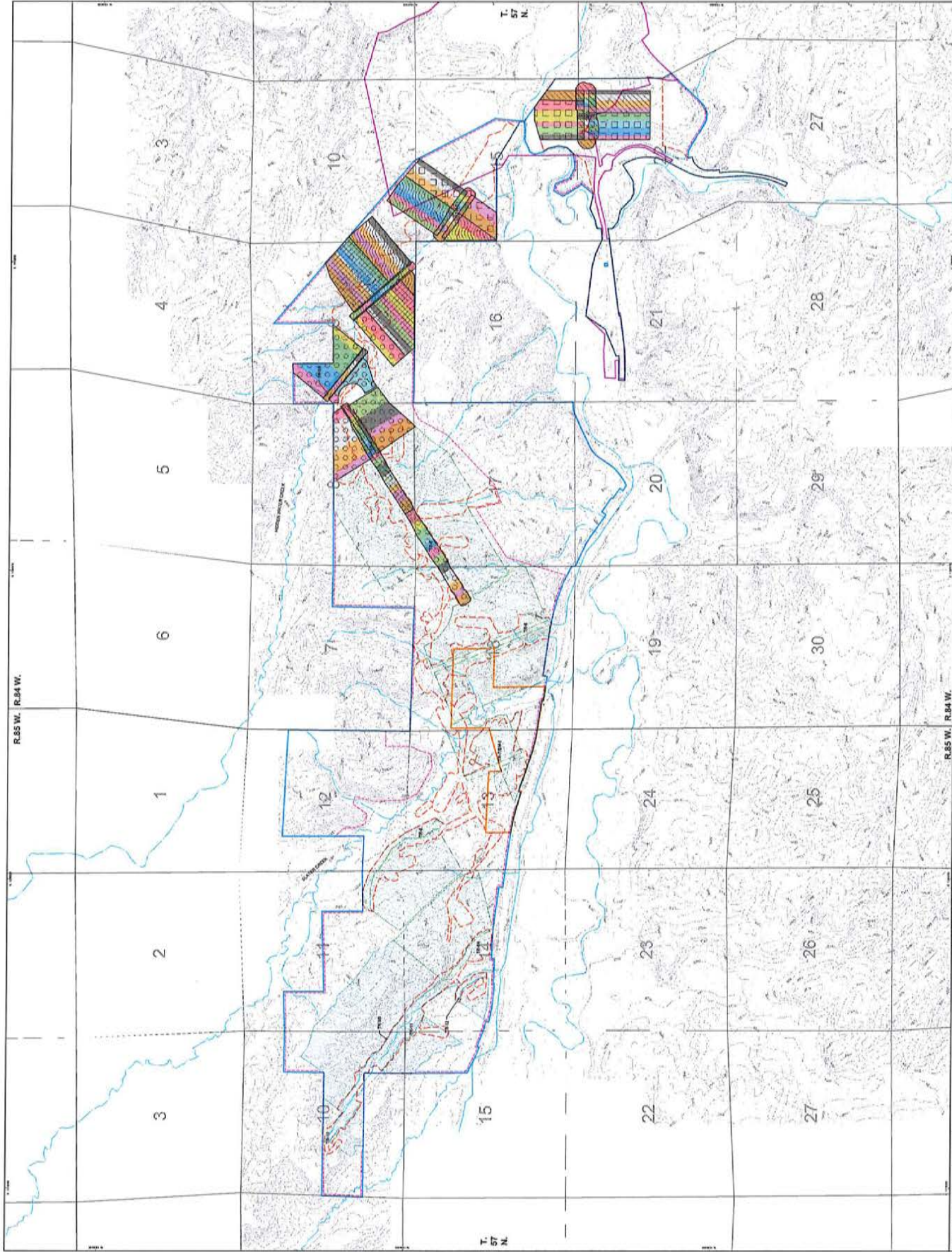
**ATTACHMENT 2
FEE SCHEDULE AND POLICY
AQUA TERRA CONSULTANTS, INC**

**Big Horn Coal Company Review of Brook Mine Permit Application and Hearing Before
the Wyoming Environmental Quality Council
2017**

PERSONNEL RATES	
Paul Gerlach, Principal of the Firm:	
- Data Review and Report Preparation	\$65/hour
- Hearing Attendance and Testimony	\$675/day
Senior Technical Staff	\$65/hour
Support Staff	\$55/hour
EQUIPMENT AND EXPENSES	
<i>Office Equipment & Supplies</i>	
Laptop Computer (outside office use)	\$40/day
Digitizer	\$15/hr
Telephone (Voice and Data Transmissions)	At Cost
Telefax Copies	At Cost
Per Diem Expenses	At Cost
DVDs/CDs	\$5.00 ea
Color Prints: 8 ½" x 11"	\$2.50 ea
11" x 17"	\$4.00 ea
Plots: 24" x 36"	\$10.00 ea
36" x 36"	\$15.00 ea
Copies: 8 ½" x 11" & 8 ½" x 14"	\$0.15 ea
11" x 17"	\$0.30 ea
Cardstock	\$0.20 ea
Binders and Related Materials	Cost Plus 20%
Supplies Purchased For Client Use	Cost Plus 15%
<i>Vehicles</i>	
Non-Four Wheel Drive	\$0.65/mi
Four Wheel Drive	\$0.75/mi

Services rendered are charged at regular rates with no mark up for overtime or holiday time.

C-1 Objection Exhibit A



LEGEND

- BROOK MINE PROPERTY BOUNDARY
- BROOK MINE COAL REMOVAL BOUNDARY (POINT NO. 100-10)
- BROOK MINE COAL REMOVAL BOUNDARY (POINT NO. 100-10)
- BROOK MINE COAL REMOVAL BOUNDARY (POINT NO. 100-10)
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COAL REMOVAL SEQUENCE

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27	SEQUENCE 27
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29	SEQUENCE 29
30	SEQUENCE 30

RAMACO

RAMACO MINING CORPORATION

10000 RAMACO DRIVE

CLARK COUNTY, MONTANA

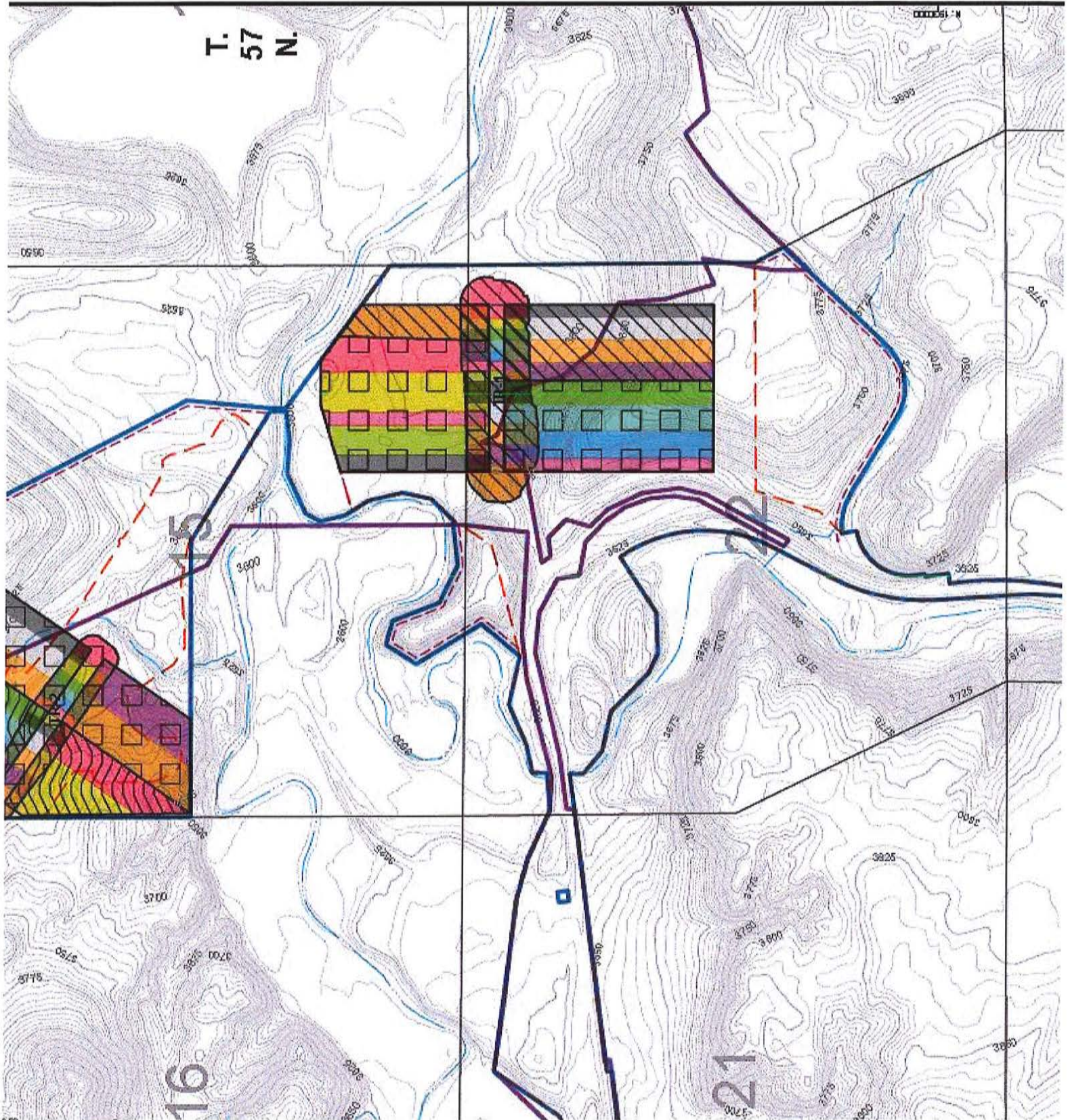
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COAL REMOVAL SEQUENCE

CL-Objectious Exhibit A

WVC

T. 57 N.



C-1 Objection Exhibit B

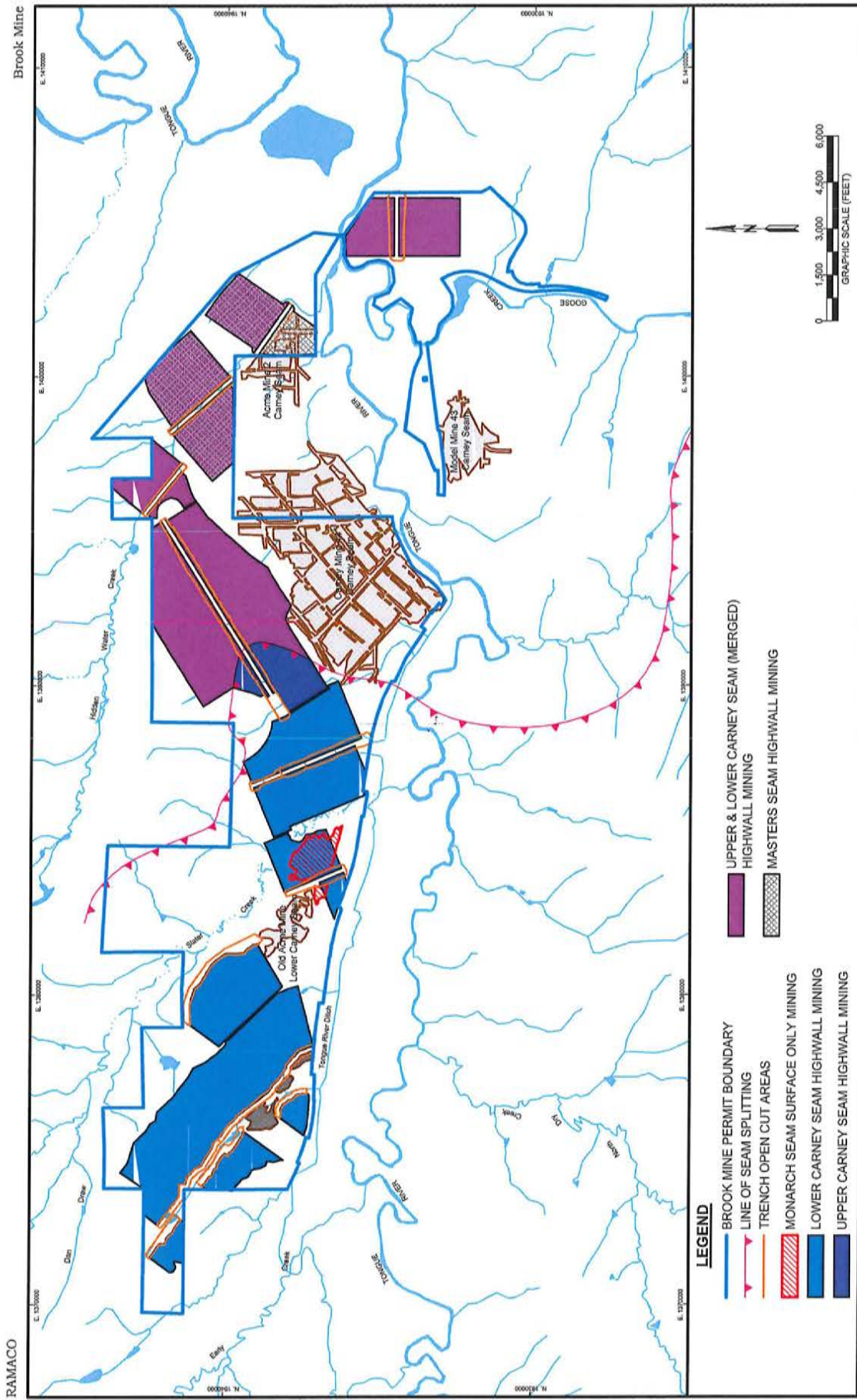
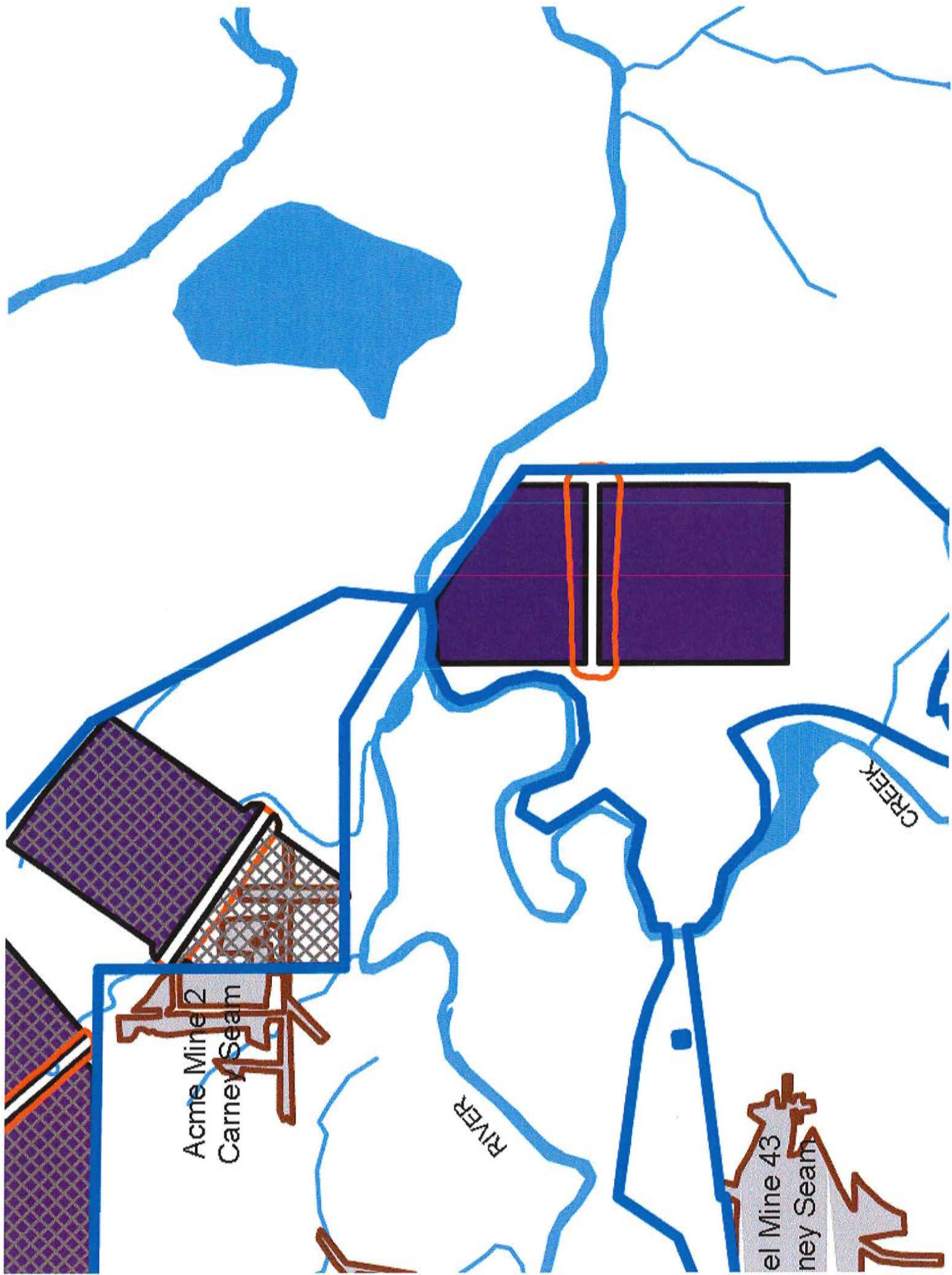


Figure MP-6.1-1 Showing Brook Mine Proposed Trenches and Highwall Mining Panels

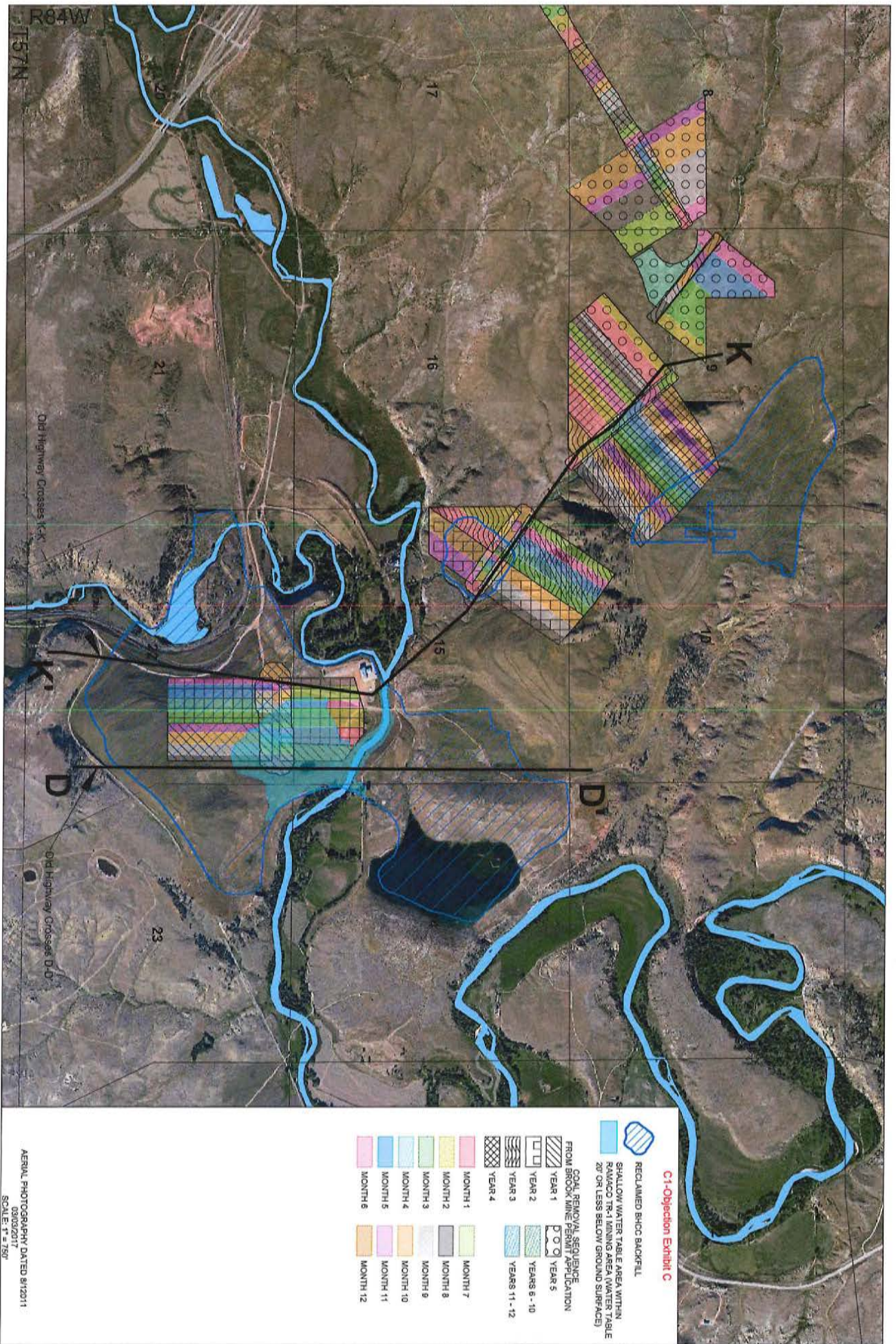
C1-Objection Exhibit B

October 2014

Addendum MP-6-11

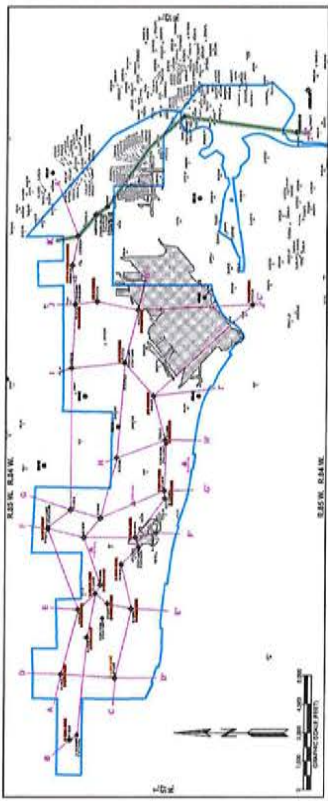


C-1 Objection Exhibit C



C-1 Objection Exhibit D

C-1 Objection Exhibit E



C-1 Objection Exhibit F

C1-Objection Exhibit F
BIG HORN COAL COMPANY

BIG HORN MINE
GROUNDWATER RESTORATION DEMONSTRATION

FOREWORD

The Administrator of the Wyoming Department of Environmental Quality, Land Quality Division, has declared that requests for final incremental bond release at coal mines must be preceded by: 1) a demonstration that the postmining groundwater conditions support the postmining land use as per Coal Rules and Regulations Chapter 4, Section 2.(h)(i) and Chapter 4, Section 2.(i)(i) and; 2) verification of the accuracy of the Probable Hydrologic Consequences (PHC) predictions for groundwater as per Coal Rules and Regulations Chapter 4, Section 2.(i). One of the principal objectives in Big Horn Coal's reclamation has been to restore the quantity of groundwater in the mine backfill and adjacent areas to a level suitable for livestock use and meeting the livestock use water quality standards set forth under the Wyoming Department of Environmental Quality, Water Quality Division's Rules and Regulations, Chapter VIII. Section 5, Table 1. Groundwater quality data are presented in this report demonstrating how these standards have been met at Big Horn Mine. In terms of restoring groundwater quantity characteristics, Big Horn's specific objectives have been to re-establish infiltration and recharge capacities, aquifer storage and groundwater flow, and aquifer saturated thicknesses.

This report is intended to fulfill the requirements for demonstrating postmining groundwater conditions at Big Horn Mine and more specifically to verify that the quantity and quality of groundwater has been restored throughout the majority of all reclaimed mine lands and throughout all adjacent areas to conditions suitable for livestock watering. Data and analyses are provided for reclaimed mine spoil sites not yet fully meeting livestock watering criteria showing trends in groundwater recovery which allow forecasts to be made of meeting the restoration goals. Groundwater conditions now existing within and contiguous to Big Horn Mine are compared to predictions made in the PHC assessments of the mine permit document.

This report is inclusive of all of Big Horn Mine and has been prepared intentionally well in advance of any request for Final Incremental Bond release because, as demonstrated in this report, coal bed methane gathering activities have begun to significantly impact groundwater conditions in areas adjacent to the mine. This submittal does not request any changes in Big Horn Mine's currently approved groundwater monitoring program nor does it request any release from liability for postmining groundwater conditions.

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I POSTMINING GROUNDWATER QUANTITY

Groundwater conditions within and adjacent to Big Horn Mine were influenced by nearly 100 years of surface and underground coal mining activities. This chapter begins with an overview of the historic mining developments that are inferred to have or are known to have affected groundwater conditions within and proximate to Big Horn Mine.

1903 to 1963 - According to records compiled by Dunrud and Osterwald (1980), coal mining near Big Horn Mine began at the underground Dietz No. 5 Mine in 1903 immediately south of present-day Big Horn Mine. From 1904 to 1940, underground coal mines including the Dietz No. 8 Mine, the Hotchkiss Nos. 1 and 2 Mines, the Model Mine, the Carney Mine and the Acme and Acme No. 2 Mines were developed over large areas within and contiguous to Big Horn Mine. The Plachek strip coal mine on Goose Creek (the Plachek Pit reservoir of Section 22) operated from 1957 to 1963 and the B and W strip coal mine operated from 1948 to 1953 within a portion of what ultimately became Big Horn's Pit 3. In essence, Big Horn Coal Company, which consolidated Big Horn Mine in 1963, was restricted in its mining to "islands" of coal separating the historic mines.

1965 - Large-scale stripping operations are underway along the east side of Goose Creek east of the former Plachek Pit within Big Horn's Pit 1.

1973 - Tongue River immediately below the mouth of Goose Creek is diverted 500 feet north into the old B and W Mine coal pits to allow mining in Pit 2.

Summer 1978 - Tongue River is routed into its permanent postmining channel after the final backfilling and grading of Pit 2. Mining begins in the Pit 3 area.

Early 1980's - Mining in Pit 3 intercepts alluvium of Tongue River causing local drawdown of the alluvial water table.

1984 - Pit 1 was extensively backfilled, leaving open only the "Southeast Triangle" groundwater sump.

1985 - Pit 3 advancement ceases and most exposed coal faces are covered. This reduces the groundwater inflow rate to Pit 3.

December 1996 – Backfilling of the Pit 1 “Southeast Triangle”, which began in 1994, is completed and the groundwater sump is closed. Pit pumpage of groundwater from the Dietz 2, Dietz 3 and Monarch coal aquifers ceases.

1999 – Coal bed methane gathering activities begin pumping groundwater from the Dietz 3, Monarch and Carney coal seams in areas south and southeast of Big Horn Mine.

2000 – Backfilling and grading of Pit 3 is completed late in the year and Pit 3 Reservoir begins filling.

In Section 6.1.5 of the Reclamation Plan, alluvial groundwater from Tongue River and Goose Creek valleys is predicted to be a significant recharge source to the postmining coal aquifers in areas adjacent to the mine reclamation and to the mine backfill (spoils) as well via, in part, groundwater recharge from resaturated spoils along the downgradient coal/spoils contacts (see Exhibits RP-14, RP-15 and RP-16 of the Reclamation Plan). The mined edges of the Dietz 2 coal, Dietz 3 coal and, particularly, Monarch coal seams contact reclaimed spoils which in turn contact Goose Creek and/or Tongue River channels or the native alluvium underlying the stream valleys over broad lengths along the perimeters of reclaimed Pits 1, 2 and 3. Streamflow infiltration from Goose Creek and from Tongue River together with subsurface flow from the alluvium of these valleys has recharged the mine backfill, which has in turn recharged the native coal aquifers at the coal/spoils contacts. Groundwater in the alluvium of Tongue River valley south of Pit 3 Reservoir and streamflow in Tongue River north of the reservoir were also identified as the principal recharge sources to Pit 3 Reservoir via the South French Drain and North French Drain, respectively (see Sections 7.3.1.1 and 7.3.1.4 of the Reclamation Plan). Very little, if any, groundwater resaturation was predicted at Pits 4 and 5 because the coals mined in these areas naturally existed as remnants isolated from recharge sources of the Tongue River and Goose Creek valley floors. No groundwater aquifers were identified before or during mining in Pits 4 and 5 and none has been projected to develop after mining in either area (see Section 6.1.5, Reclamation Plan).

Chapter 4, Section 2.(h)(i) of the Wyoming Department of Environmental Quality, Land Quality Division Rules and Regulations states that “the recharge capacity of reclaimed

lands shall be restored to a condition which supports the approved postmining land use". Big Horn Coal's objective to restore the mine backfill and adjacent aquifers to a condition suitable for livestock watering would be greatly compromised were the spoils sufficiently impermeable so as to not readily transmit water horizontally as groundwater movement, or vertically as infiltration of surface water, inclusive of rainfall, snowmelt and streamflow. The infiltration rate of a soil or of strata where soil is absent is defined as the rate at which water infiltration takes place, expressed in depth of water per unit of time, usually in inches per hour. The following section of this text explores the approximate, effective infiltration rate of the mine backfill where the effective infiltration rate is broadly defined as the rate at which the backfill resaturated as a result of water infiltration from all sources including stream channel and other surface water infiltration combined with lateral groundwater inflow from unmined aquifers.

I.A Groundwater Recovery In Backfill Aquifer In Pits 1, 2, 3, 4 And 5

I.A.1 Infiltration Rates

No direct measurements have been made of infiltration rates on reclaimed lands at Big Horn Coal beyond those presented in the 1993-1994 Annual Report (Table 16). No attempt has been made to convert the infiltration rates of the 1993-1994 Annual Report into groundwater recharge or spoil resaturation rates. Instead, effective infiltration rates, as defined in the previous section, have been estimated for portions of Pits 1 and 2 corresponding to four topsoil request areas formerly approved by LQD before topsoil was applied on the regraded spoils. These areas, shown on Exhibit 1 accompanying this document, were selected for effective infiltration rate calculations because the timing and sources of groundwater recharge within Pits 1 and 2 can be estimated with some accuracy. The resaturation of spoils within these areas is credited almost exclusively to the infiltration of streamflow in Tongue River and Goose Creek and lateral groundwater flow from the alluvium of these valleys. Lateral groundwater flow to spoils from the Dietz 3 and Monarch coal seams and the infiltration of precipitation and snowmelt over the spoils probably constituted a very small fraction of the total spoil resaturation.

Pits 1 and 2

As of October 2001, groundwater in the backfill at Big Horn Mine had recovered to the potentiometric elevations shown on Exhibit 1. This exhibit also shows potentiometric elevations in Monarch coal adjacent to the mine and in Tongue River alluvium between Pits 2 and 3 near the South French Drain as of October 2001. The first step in estimating effective infiltration rates was to convert the potentiometric elevations shown within the topsoil request areas into volumes of saturated spoils. This was accomplished by first preparing a digital map of structure contours on the top of the Monarch coal from Exhibit D5-12 (Appendix D5) and then subtracting from this surface a unit amount of 22 feet representative of the average thickness of the coal (see Exhibit D5-11, Appendix D5) to derive structural contours on the bottom of Monarch coal. Using surface modeling software, this intermediate product was then subtracted from the potentiometric contour elevations (Exhibit 1) to derive approximate volumes of saturated spoils above the original Monarch floor (assumed pit floors) within each topsoil request area.

Having estimated the volumes of saturated spoils within the topsoil request areas of Pits 1 and 2, the final elements needed for computing approximate effective infiltration rates were an estimate of the effective porosity of the spoils and estimates of the time elapsed between when the spoils began resaturating and ending with the October 2001 groundwater level measurement date. Although the backfill of Pits 1 and 2 was undoubtedly constantly subject to some resaturation in the form of seepage from Goose Creek and Tongue River even as mining continued in the area, the date resaturation began was assumed to be equivalent to the date Tongue River was turned into its final channel, July 1978. Under this assumption, the time elapsed between July 1978 and October 2001 was constant for the four topsoil request blocks of Exhibit 1 at 23.2 years. The effective porosity of the spoils was assumed to be 20 percent in the effective infiltration rate calculations. A porosity of 23 percent was found for the spoils at the Plachek Pit through multiple well testing but all other multiple well tests at Big Horn Mine returned storage coefficients that were much lower (see Table RP-12, Reclamation Plan). The low storage coefficients were thought to be indicative of coarse-grained spoils being overlain by fine-grained materials (see Section

6.1.2, Reclamation Plan). While this hydraulic differentiation can be expected after the spoils are fully or nearly fully saturated, an effective porosity of approximately 20 percent is probably more indicative of the spoils in their dry, loose state.

Effective infiltration rates computed per the above procedure are presented on Table 1. The rates range from 5.9 to 13.9 inches per year, which is very high relative to what would be expected for the vertical infiltration of rainfall and snowmelt alone. As an example, Davis and Zabolotney (1996) found through groundwater flow modeling that the premining infiltration rate from surface water sources (precipitation, snowmelt, overland runoff, etc.) to shallow overburden aquifers at Belle Ayr coal mine was about 0.16 inches per year. Reclaimed lands at the mine were found to have an infiltration rate of about 2 inches per year. The authors concluded that the postmining infiltration rates will likely diminish over time as the spoils settle and as evapotranspiration losses increase with increasing vegetal growth. Big Horn Mine reported infiltration rates ranging from 0.10 inches per hour to 3.00 inches per hour from eight, double ring infiltration tests conducted on backfill in Pits 1, 3 and 4 (see Table 16, 1993-1994 Annual Report). The average infiltration rate from these tests was 0.82 inches per hour.

The reader is again advised that the effective infiltration rates of Table 1 are not true soil infiltration rates but are inclusive instead of groundwater recharge from all sources. The rates may also be biased somewhat high by the assumption that the total recharge period for Pits 1 and 2 was only 23.2 years prior to October 2001 when in fact the backfill of both pits was subject to some constant recharge that was probably not entirely captured by pit pumpage before July 1978, the assumed starting date for recharge. Conversely, resaturation in the Pit 1/Pit 2 area has not been limited to the topsoil application areas alone but has also occurred contiguous to these areas in pre-law portions of the mine. This could tend to bias the estimated effective infiltration rates low. Regardless of the analytical technique's limitations, the resultant infiltration rate values (recharge values) clearly indicate that the backfill of Pits 1 and 2 has resaturated very quickly and there are no apparent properties of the spoils that retard water infiltration or movement in either the vertical or horizontal planes.

Pit 3

As shown more fully in Section I.A.2. below, all indications are that the Pit 3 spoils have resaturated very rapidly, virtually in phase with the filling of Pit Three Reservoir. Effective infiltration rates were not computed for the Pit 3 spoils because the topsoil application dates (hence, the approximate backfilling dates) ranged over 16 years (1985 through 2000), but a large portion of the recharge was probably supplied by Pit 3 Reservoir as it began filling beginning in late 2000. Because of the diversity of recharge sources and the temporal duration of backfilling activities at Pit 3, it would be very difficult to establish a starting date for recharge with any accuracy.

I.A.2 Subsurface Flows

I.A.2.a Water Level Recovery Within Mine Backfill And Adjacent Affected Aquifers

Figures A-1 through A-28 in Addendum A are hydrographs of groundwater elevations versus time for wells monitoring the backfill aquifer and Carney coal, and wells monitoring all aquifers affected by mining, including the alluvium of Tongue River and Goose Creek valleys, and the Dietz 2, Dietz 3 and Monarch coal seams. Although some of the non-backfill wells were removed from the monitoring program in March 2001 (Change No. 6 to Permit 213-T5; partially approved April 20, 2001), groundwater elevations were measured in most wells as recently as October 2001. Groundwater saturation, as portrayed by hydrographs, is considered fundamental to understanding subsurface flow because the groundwater elevation in a well is a product of both horizontal and vertical water movement.

The text of the following sections identifies evidence of potentiometric declines in the coal aquifers caused by coal bed methane (CBM) gathering activities that began near Big Horn Mine in 1999. This is particularly true for the Monarch and Carney coals. Gas and groundwater production records of the Wyoming Oil and Gas Commission were interrogated via internet link on April 29, 2002 to obtain information relating to CBM activities for selected areas adjacent to Big Horn Mine. These areas include Sections 13 and 22 through 27 south and southeast of the mine (sections of land shown on Exhibit 1). The

search revealed the existence of 120 CBM wells in various stages of permitting and development (expired, cancelled or abandoned permits not included), although groundwater production data were recorded for only 20 wells; one in section 13 and the other 19 in section 26. All 20 wells are developed in either the Monarch or Carney coal seams. Many of the other wells not having groundwater production records also have no indication of the coal completion interval in the records reviewed for this search. The groundwater production data of the 20 wells are temporally variable, suggesting that the wells have been intermittently operated. What can be stated is that, in the period 1999 through early 2002, the cumulative groundwater production of the 20 wells was 799 acre-feet (AF); 50 AF from the one well in Section 13 and 749 AF from the 19 wells in Section 26. The well in Section 13 is in Carney coal and had an average groundwater production rate of 25 gpm from May 1999 through August 2000. The two wells with the largest cumulative water production in Section 26 (both in Carney coal) had average water production rates of 30 to 31 gpm from May 1999 through August 2000. The two wells with the lowest cumulative water production in Section 26 (both in Carney coal) produced at rates between 4 and 5 gpm. CBM development activities remain brisk around Big Horn Mine and the volumes of groundwater produced will almost certainly increase in the near future.

Hydrographs of alluvial wells

Hydrographs for the alluvial aquifers are presented as Figures A-1, A-2, A-3, A-9 and A-13. Those for wells 206-76 and 397-78 (Figures A-1 and A-2), located near the South French Drain (Exhibit 1), suggest water table recovery of about one to two feet from 1989 to present (fall 2001), probably as the result of the final backfilling of Pits 1 and 2. The water table elevation fluctuations within these two wells over the past several years appear to be within the ranges seen in 1979 and 1980. The hydrographs for the remaining three alluvial wells, Nos. 403-78, 508-79 and 644-80 (Figures A-3, A-9 and A-13, respectively), show no apparent influence of mining upstream of the mine on Goose Creek and Tongue River (wells Nos. 508-79 and 403-78, respectively) and downstream of the mine on Tongue River (No. 644-80; see Exhibit 1). Underflow in the alluvium of the stream valleys, as evidenced by the groundwater elevation trends of the five wells, appears

to have fully or nearly fully re-established, as predicted in the Reclamation Plan (Sections 6.1.5 and 6.2.2).

The Reclamation Plan concludes that the only drawdown observed in alluvium historically monitored by Big Horn Mine occurred in the immediate vicinity of South French Drain (Section 6.2.2), and this drawdown will be permanent as a result of the high water line of the reservoir always remaining below the base of alluvium intercepted by the drain. Permanent, postmining water table elevations predicted for the alluvium contiguous to South French Drain are shown on Exhibit RP-16. Water table elevations in alluvium of the same area as recorded in October 2001 are also shown on Exhibit 1 accompanying this text. The water table elevations of the two drawings are very similar and the inferred flow patterns vary only slightly with Exhibit 1 showing a somewhat smaller area of the valley floor underflow being affected by Pit 3 Reservoir drainage. Based on Exhibit 1 and Exhibit RP-16, it is concluded that the alluvial underflow conditions have been restored and the affects of Pit 3 Reservoir on alluvial water table elevations and flow patterns are as predicted.

Hydrographs of Dietz 2 coal wells

Groundwater elevations in Dietz 2 coal were predicted to return to premining conditions quickly after mining because saturated Dietz 2 coal was mined only in Pit 1 and the alluvial subcrop recharge zones of the aquifer were not disturbed by mining (see Section 6.1.5, Reclamation Plan). Groundwater hydrographs through October 2001 are presented in Addendum A for Dietz 2 coal wells Nos. 469-79, 596-80, 686-81, 687-81 and 828-84 as Figures A-8, A-12, A-18, A-19 and A-26, respectively. The wells are located on Exhibit 1. The hydrographs show that the potentiometric surfaces in wells Nos. 469-79, 686-81 and 687-81, located south and southeast of Pits 1 and 2, have recovered significantly since about 1994 to elevations equivalent or greater to those of the early 1980's. The mechanisms of aquifer recharge and subsurface flow in the Dietz 2 coal are clearly fully re-established south and southeast of Big Horn Mine. Groundwater elevations in wells Nos. 596-80 and 828-84 remain about four feet and two feet, respectively, below peak elevations observed in the early to mid-1980's. Water levels in these wells fluctuate from about one to two feet

between readings, indicating variable recharge and subsurface flow rates that are probably associated with cyclical precipitation changes and seasonal changes in Tongue River flow rates/stages. This is considered evidence of the aquifer flow functioning normally in response to natural changes in recharge volumes and rates. The differences in water elevations in wells 596-80 and 828-84 over what they were 15 to 20 years ago are small relative to the potentiometric heads existing above the top of the coal.

Hydrographs of Dietz 3 coal wells

Like the Dietz 2 coal, groundwater flow and potentiometric elevations in the Dietz 3 coal were projected to recover from drawdown quickly after reclamation at Big Horn Mine because none of the coal's alluvial recharge subcrop zones were disturbed by mining (see Section 6.1.5 Reclamation Plan). Groundwater hydrographs are presented in Addendum A for five Dietz 3 monitor wells: Nos. 462-79, 468-79, 576-80, 660-81 and 827-84 corresponding to Figures A-4, A-7, A-10, A-17 and A-25, respectively. The wells are located on Exhibit 1. In all cases, notes on the hydrographs indicate that the wells have become affected by CBM gas gathering activities beginning at various times from 1999 to October 2001. CBM wells have been withdrawing groundwater and gas from the Dietz 3, Monarch and Carney coal seams in areas immediately south and southeast of Big Horn Mine since approximately 1999. With the exception of well 576-80, all the Dietz 3 wells show water level recovery to potentiometric elevations slightly less than to significantly greater than what was observed in the early 1980's. By 1998, potentiometric elevations at well 576-80 had recovered to within less than four feet of peak elevations observed in 1986, but beginning in late 1999 the well has experienced renewed drawdown presumably as a result of CBM activities. The recovery of mining-related drawdown and reduction of flow in the Dietz 3 aquifer appears to have been substantially complete by 1998 or 1999 but since that time there has been significant renewed drawdown associated with CBM gathering activities. These activities are projected to locally escalate in the future and drawdown in the Dietz 3 will undoubtedly increase in areas within and adjacent to Big Horn Mine.

Hydrographs of Monarch coal wells

Mining at Big Horn Coal removed the Monarch coal's alluvial recharge subcrop zones and replaced them with spoils. The coal's postmining groundwater recharge is primarily via the spoils which in turn are recharged by underflow in the alluvium of Tongue River and Goose Creek, by seepage from Tongue River along its reconstructed length between Pits 2 and 3, and by seepage from Pit 3 Reservoir. Because the spoil recharge sources are areally extensive and supported by perennial water bodies, the recovery of potentiometric elevations and groundwater flow in the Monarch aquifer was projected to be relatively rapid after final reclamation (see Section 6.1.5, Reclamation Plan).

Addendum A contains groundwater hydrographs for three Monarch wells: Nos. 467-79, 584-80 and 825-84 corresponding to Figures A-6, A-11 and A-24, respectively. The hydrographs of all three wells show significant groundwater level recovery beginning in 1996 that was likely a result of substantially closing the Pit 1 final opening, but the recovery periods were relatively short lived until potentiometric declines began again in 1999 or 2000. Beginning in year 2000, the potentiometric trends in wells 467-79 and 584-80 reversed and the water levels rose abruptly to elevations unmatched in the history of the wells. This phenomenon is almost certainly indicative of gas buoyancy reducing the specific weight of the groundwater and causing the water levels in the wells to rise. This has not been observed to date in well 825-84 where the groundwater surface has steadily declined since late 1999. The potentiometric declines that began in the Monarch in late 1999 or 2000 are ascribed to local CBM gathering activities as is the apparent gas buoyancy found in wells 467-79 and 584-80. Although potentiometric elevations and groundwater flow in the coal had significantly recovered as the mine pits were backfilled, the recovery was not entirely complete by the time CBM activity-related drawdown began in 1999 and 2000. Ignoring the effects of gas buoyancy, up to about 10 feet of additional recovery to historic peak groundwater elevations remained at well 584-80, some 8 feet remained at well 825-84 and about 5 feet remained at well 467-79.

The potentiometric surface shown for the Monarch coal on Exhibit 1 adjacent to the reclaimed spoils is very similar in pattern and value to the projected postmining potentiometric surface of the coal shown on Exhibit RP-16 of the Reclamation Plan. The

drawings differ slightly in that the potentiometric contours of Exhibit 1, drawn with October 2001 water level measurements, are shifted slightly upgradient from those of Exhibit RP-16. This is due to the stage in Pit 3 Reservoir still being some six feet below its projected average elevation. As the reservoir fills, groundwater elevations in the spoils and adjacent Monarch coal will rise, causing the potentiometric contours of Exhibit 1 to shift downgradient in better agreement with the same contours of Exhibit RP-16.

Hydrograph of Carney coal well

The Carney coal seam was not physically or hydraulically affected by mining at Big Horn since it lies some 100 feet below the Monarch coal (see Section 6.2.2, Reclamation Plan). A hydrograph is presented for one Carney well in Addendum A - well 465-79 corresponding to Figure A-5. The hydrograph clearly shows no effect from mining, although potentiometric elevations in the well declined over 100 feet from 1999 through year 2000 as a result of local CBM gathering activities. The pattern and timing of the drawdown in well 465-79 is similar to that seen in wells Nos. 462-79, 468-79 and 660-81, developed in Dietz 3 coal, and to Monarch coal well 467-79.

Hydrographs of mine backfill wells

As previously mentioned, saturation of the mine backfill and establishment of groundwater flow through the backfill were also projected to be relatively rapid after mine reclamation because of the large, perennial recharge sources provided by Goose Creek, Tongue River and the Pit 3 Reservoir. Groundwater hydrographs illustrating recharge trends are provided for nine spoil wells in Addendum A. These include wells Nos. 655-81, 656-81, 657-81, 745-82, 816-83, 819-84, 823-84, 906-90 and 907-90 corresponding to Figures A-14 through A-16, A-20 through A-23, A-27 and A-28, respectively. A tenth spoil well, labeled "C-2001" on Exhibit 1, was constructed in late August 2001 near the north shore of Pit 3 Reservoir. No hydrograph has yet been prepared for this well because of the well's short period of record. The reader is also advised that well 816-83 in Pit 4 spoils and wells 906-90 and 907-90 in Pit 5 spoils are recording only minor groundwater saturation in keeping with the prediction set forth in Section 6.1.5 of the Reclamation Plan that there would be very little, if any, resaturation of the spoils in either of these two pits.

As predicted, all of the Pit 1, 2 and 3 spoil wells show relatively rapid and, in most cases, generally consistent groundwater recovery beginning up to 20 years ago in the early 1980's. Well 745-82, located north of Tongue River in Pit 3 spoils, and well 819-84, located east of Goose Creek in Pit 2 spoils, are showing pronounced seasonal water elevation fluctuations that are ascribed to changes in stream stages and alluvial water table elevations of the respective valleys. This phenomenon, also apparent to a lesser degree in wells 657-81 and 823-84, is demonstrative of the spoils' ability to rapidly transmit water from vertical and horizontal recharge sources (ie. high infiltration and horizontal groundwater movement rates). Groundwater recovery rates in Pits 1 through 3 spoils began diminishing between late 1997 to 2000, indicating that the potentiometric surface was approaching hydrostatic equilibrium with recharge and discharge sources. Groundwater elevations in the Pit 3 spoils contiguous to Pit 3 Reservoir will likely continue to ascend slightly, perhaps another two to four feet, as the stage in the reservoir ascends the final six feet above the approximate elevation observed October 2001 to its average operating elevation of 3560.5 feet.

Well 816-83 in Pit 4 spoils is 50 feet deep and with a groundwater elevation of 3634.0 (Oct. 2001) there is only some 5.5 feet of water in the well. This is insufficient for any practical use; therefore and as predicted, the Pit 4 spoils are not identified as an aquifer. Wells 906-90 and 907-90 developed in Pit 5 spoils are 75 and 160 feet deep, respectively. The groundwater elevations shown on Exhibit 1 for October 2001 translate to water column heights of 6.9 feet and 5.2 feet for wells 906-90 and 907-90, respectively. Again, these small water columns are insufficient for any practical well development and the Pit 5 spoils are not identified as an aquifer. The hydrographs for the Pits 4 and 5 wells do not suggest that the water levels may rise significantly. Instead, the groundwater elevations appear to be in dynamic equilibrium with local recharge and discharge sources. Further evidence that the Pit 4 and Pit 5 backfill does not/will not constitute an aquifer was seen in October 2001 when wells 816-83 and 906-90 were sampled for water quality analyses. Each well was bailed dry after yielding less than 10 gallons of groundwater.

I.A.2.b Potentiometric Surface In Backfill Aquifer

Exhibit 1 illustrates the potentiometric surface in backfill and adjacent Monarch coal at Big Horn Mine as of October 2001. The drawing also shows water table elevations in Tongue River alluvium adjacent to the South French Drain, as discussed above under the title *Hydrographs of alluvial wells*. Exhibit 1 shows that the groundwater gradient in Pit 1 is from west to east, from recharge provided by Goose Creek. In Pit 2 and between Pits 2 and 3, the Tongue River has a profound effect on the water table configuration. This is particularly evident with the 3580-foot water table contour traversing nearly parallel to the river between Pits 2 and 3, indicating flow directly from the river into the spoils and thence into Pit 3 Reservoir. The 3580-foot contour in the spoils of Pits 1 and 3 join the same water table contour in Tongue River alluvium south of South French Drain. Overall, the salient feature of Exhibit 1 is that the spoils of Pits 1, 2 and 3 are in direct hydraulic continuity with the alluvium of Goose Creek and Tongue River.

The potentiometric surfaces of the backfill, Monarch coal and Tongue River alluvium near the South French Drain on Exhibit 1 agree in form and value with the potentiometric surfaces projected for the same aquifers on Exhibit RP-16 of the Reclamation Plan. Potentiometric elevations shown on Exhibit 1 for the spoils are up to about 10 feet lower than those projected on Exhibit RP-16, especially through the northwestern portion of Pit 3 adjacent to Pit 3 Reservoir. The difference is due in part to the fact that the stage in the reservoir was still some six feet below its normal projected stage when Exhibit 1 was prepared (October 2001), and due in part to the fact that Exhibit 1 was drawn using additional backfill groundwater control points not available when Exhibit RP-16 was created. Overall, the potentiometric configurations of Exhibit 1 agree remarkably well with those of Exhibit RP-16, allowing the conclusion that the goal of restoring groundwater quantity has been met.

Exhibit 1 illustrates one groundwater feature in the spoils that is not shown on Exhibit RP-16. It is that Reservoir 14 contains a permanent pool supplied by groundwater in Pit 2 spoils. Although the pool depth is only some two to three feet, the reservoir did not go dry in year 2001 despite the occurrence of a severe drought that began in year 2000.

The 3580-foot groundwater contour encircling Reservoir 14 on Exhibit 1 indicates that the reservoir's evaporative losses locally suppress the spoils' potentiometric surface.

I.A.2.c Groundwater Production Rates In Backfill

No conventional aquifer tests have been completed in Big Horn Mine spoils beyond those that are reported in Section 6.1.2 of the Reclamation Plan; however, eight test holes and one monitor well (well C-2001) were drilled in Pits 1 and 3 in August 2001 and from this work additional data are available on approximate groundwater production rates in the spoils. The results of the tests described in the Reclamation Plan show a wide diversity in spoil hydraulics with transmissivities ranging from about 5 gallons per day per foot (gpd/ft) to over 22,000 gpd/ft. Production rates in those tests ranged from less than one gpm to 37 gpm. Overall, the transmissivity (a measure of an aquifer's total yield available to a well) of the spoils was projected to be at least as great as the undisturbed coals.

The eight test holes that were drilled in the spoils, together with monitor well C-2001, are located on Exhibit 1 and geologic logs for the sites are presented in Addendum A. The test holes were drilled in repeated attempts to construct five additional monitoring wells that would be used for assessing postmining groundwater elevations, water quality and aquifer hydraulic characteristics. The test holes could not be completed as monitoring wells because the spoils consistently caved into the boreholes at such large volumes and rates so as to preclude successful insertion of well casing. While sloughing of mine backfill in boreholes is not unique, the problem at Big Horn was obviously exacerbated in some cases by the boreholes producing large groundwater flows that washed out the unconsolidated materials. Groundwater yields estimated by experienced personnel during airlifting of the open boreholes are noted on the logs of three of the sites in Addendum A. Holes A-A and A-A1 produced approximately 20 to 25 gpm while hole B-A2 was noted as producing some 25 to 30 gpm, all from airlifting near the base of the spoils. Well C-2001 was noted as yielding 10 gpm during final airlift development. While the permeability and transmissivity of the spoils will probably diminish as the materials settle and compact, all evidence now indicates that groundwater yields in Pits 1 through 3 are more than sufficient to supply livestock watering wells.

I.A.3 Backfill Storage Characteristics

I.A.3.a Backfill Storage Characteristics Reported In Mine Permit Document

The groundwater storage characteristics of the backfill at Big Horn Mine are quantitatively and qualitatively assessed in the Reclamation Plan. Table RP-12 quantifies storage coefficients in spoils from four multiple-well pumping tests. The results range from a high of 0.23 for spoils of the Plachek Pit to a low of 0.0002 for a test completed in Pit 3 spoils. The high value is indicative of unconsolidated strata under water table conditions while the low value and others found like at the mine are indicative of groundwater under confined to semi-confined conditions. Similar storage coefficient values characterized the native coal and overburden strata of Big Horn Mine, with the largest storage found in the alluvium of Goose Creek and Tongue River valleys and the smallest values found in the deeper coal seams. By reference to studies conducted at strip coal mines in southeastern Montana (Van Voast et al., 1978), the Reclamation Plan cites low spoil storage coefficients indicative of rubble-strewn pit floors and cites further the conclusion that the premining and postmining occurrence and flow of groundwater are not expected to be dissimilar (Section 6.1.2, Reclamation Plan).

I.A.3.b Current Status Of Groundwater Storage In Mine Backfill

There have been no direct measurements of backfill storage coefficients at Big Horn Mine beyond those referenced above in the previous text section. However, indirect evidence of groundwater storage in the spoils exists in the findings and products presented above including the groundwater hydrographs of wells in the backfill (Addendum A), the potentiometric surface map of the spoils (Exhibit 1) and the logs of the test holes drilled in the spoils (Addendum A).

The hydrographs of the spoil wells in Pits 1 through 3 together with the potentiometric surface map of the spoils show groundwater recovery to predicted elevations over nearly all portions of the backfill. Below the phreatic surface of the spoils, groundwater is held in storage, as is true for any aquifer. Both the effective porosity

(unconfined storage) and confined storage properties of the spoils probably vary considerably over the mine as a result of the spoils' textural diversity, but overall, the effective porosity appears to be large as evidenced by the geologic logs of the spoils test holes (Addendum A) describing loose, caving materials with noticeable voids. The large porosity of the spoils described in the test holes is also demonstrative of materials exhibiting large permeabilities, and hence, large groundwater yields, which indeed was the case for the several test holes where yields were estimated. Groundwater also readily moves into and out of storage in the spoils, as evidenced by the seasonal water elevation fluctuations that are very apparent in the hydrographs of several of the spoil wells, most notably wells Nos. 745-82 and 819-84. These seasonal fluctuations are caused by the water table in the spoils rapidly responding to changes in recharge (river stage) and discharge (evapotranspiration losses), which in turn is indicative of an aquifer having large porosity and permeability.

Finally, groundwater storage releases and flow through the spoils have been sufficient to maintain a permanent pool in Reservoir No. 14 within Pit 2 through over a year of drought (2000-2001) when recharge from precipitation and runoff was very small and evaporative losses were high.

I.A.4 Recharge Capacity Of Mine Backfill

The data and findings presented in the previous sections of this text fully demonstrate the recharge capacity of the reclaimed lands within Big Horn Coal Mine.

II POSTMINING GROUNDWATER QUALITY

As defined in Section I, the intended post mining use of groundwater at the Big Horn Mine will be for livestock consumption. The Wyoming Department of Environmental Quality defines groundwater quality standards for this use (Class III) and others in Chapter VIII of Wyoming Water Quality Rules and Regulations (March 1993). Chapter VIII constituent and concentration suitability criteria for domestic (Class I), agricultural (Class II) and livestock uses are presented in Table 4. Based upon the intended use of groundwater from Big Horn Coal's restored and adjacent aquifer systems, the following evaluation is restricted to the assessment of groundwater for Class III laboratory analytical constituents and concentration limits. By mutual agreement with the WDEQ, Big Horn Coal Company also includes the analytical results and assessment for ammonia nitrogen.

Big Horn Coal Company commits to Class III groundwater quality restoration objectives for Big Horn Coal Company's Pits 1, 2, and 3 disturbance areas and adjacent aquifers. Premining assessments in the Pit 4 and Pit 5 areas conclusively demonstrated the lack of groundwater in the mine-affected geologic units of both areas. It was anticipated there would never be usable quantities of groundwater within either of these areas when fully reclaimed. This prediction has been confirmed, as discussed above under Section I.

A relevant water quality assessment which included backfill wells from several northern Powder River Basin (Gillette, Wyoming) coal mines has been compiled by the WDEQ (Ogle, 2002). Wells represented in this assessment were monitored for upwards of 15 years and demonstrated steady but only relatively slow recharge rates. Only one of the referenced wells had recharged to the premining level. Typically dissolution of sodium, calcium, magnesium, and sulfate during initial saturation resulted in an elevated TDS in sampled groundwater from these sources. Elevated sulfate and TDS routinely exceeded Class III limits during initial saturation. In general, elevated TDS and sulfate concentrations in the backfill aquifers declined as the aquifers continued to be recharged and flushed. In summary, with sufficient time, TDS and sulfate concentrations are expected to meet Class III limits.

The WDEQ's assessment also references generalized historic backfill water quality research from southeastern Montana as summarized by Van Voast et al (1976). The research indicated that backfill groundwater tends to contain increased concentrations of minerals and chemically resemble that of the associated inorganic aquifers rather than that of coal aquifers. Additionally, TDS concentrations generally range from 1,500 to 3,500 mg/L but were found to occur as high as 6,000 mg/L. The research also concluded that notable percentages of available salts were dissolved during initial backfill saturation and the concentrations of salts declined with exposure to subsequent pore volumes. Research indicates that, although trace metals might occur in undisturbed groundwater locally, they generally are more common in backfill area groundwater. The distribution and concentrations of dissolved trace metals in backfill groundwater was, however, determined to be of no great significance.

As discussed in Section 6.2.2 of the Reclamation Plan, there has historically been no mine-attributed change of water quality in the affected (Dietz 2, Dietz 3 and Monarch) coal aquifers, or in the two alluvial aquifer systems. The Carney coal aquifer, underlying the Monarch coal, was not physically or hydraulically affected by mining.

Big Horn Coal Company's groundwater monitoring database indicates that several different laboratories provided groundwater analytical services to the mine over the years. Northern Testing Laboratory of Billings, Montana, and Inter-Mountain Laboratories of Sheridan, Wyoming, provided much of the groundwater quality analytical services from 1980 through 1983. Records indicate virtually all of the groundwater analyses from about 1983 through most of 1990 were conducted by the Peter Kiewit & Sons' corporate laboratory, historically located in Sheridan, Wyoming. Inter-Mountain Laboratories resumed contract groundwater analytical services in late 1990 and continues to provide these services. Other than small differences in the reported quantifiable limits for lead, chromium, arsenic and selenium, there does not appear to be significant analytical variability resulting from changes in the laboratories used, or changes in the regulatory and industry-accepted laboratory practices that would have occurred within Big Horn's period of record.

II.A Constituents For Class III Water Quality Assessment

In consultation with the WDEQ/LQD, fourteen analytical water quality constituents of Class III criteria were selected for evaluating postmining groundwater quality characteristics at Big Horn Mine. These include: pH, total dissolved solids (TDS), the combined nitrate and nitrite compounds (reported as nitrogen), chloride, and sulfate along with dissolved concentrations of aluminum, arsenic, cadmium, cadmium, copper, lead, selenium, and zinc. With exception to the analysis of pH, which is a unitless measurement, all analytical results are reported in milligram per liter (mg/L) concentrations. Regulatory-defined maximum concentration limits or allowable ranges of each constituent are presented with the analytical result summary tables in Addendum B.

II.A.1 Monitoring Results For Class III Water Quality Criteria

Laboratory analytical data are compiled from 15 monitoring wells that are sampled annually during the current monitoring regime. The monitoring well sample locations are shown on Exhibit 1. The number of samples obtained from these wells varies, based upon well installation dates and historic monitoring frequencies. Analytical result summaries are presented in tabular format numerically by aquifer and include life of well minimum, maximum and arithmetic mean concentrations for each of the targeted constituents (Addendum B, Tables B-1 through B-15). Figures B-1 through B-6 illustrate graphic constituent concentrations for those wells that have exceeded one or more Wyoming Class III quality criteria. Big Horn Coal Company did not analyze combined nitrogen compounds as nitrate plus nitrite from approximately 1982 to 1996; however there are sufficient data to assess this constituent.

II.A.1.a Groundwater Quality In Mine Spoils

The analytical results of historic groundwater sampling from nine well locations within the reclaimed spoils of Big Horn Coal Company's five pit disturbances are presented in well identification numeric sequence in Tables B-1 through B-8.

Pits 1 and 2 spoils

Analytical results obtained from monitoring wells 656-81, 819-84, and 823-84 are used to assess backfill water quality of Pits 1 and 2. Results of the analytical assessment for these wells are presented respectively as Tables B-1, B-5, and B-6.

The water quality at wells 656-81 and 819-84 reflects the major influence to the backfill materials from the high quality waters of Goose Creek and its alluvium. With exception of a single occurrence of chromium (0.08 mg/L in 1986 at 819-84), targeted Class III constituent concentrations from both wells have not been exceeded. Four individual analytical results from 656-81 are considered anomalous and are not utilized in the assessment. Out of 37 samples from 819-84, two analytical results are considered outliers. Concentrations of dissolved solids at both wells are typically on the order of 1000 mg/L. Concentrations of all of the Class III constituents from these wells are considered stable.

The analyses presented in Table B-6 from reclaimed spoils well 823-84 confirm overall very high quality backfill recharge. Readily dissolved ions were apparently flushed from the newly saturated backfill at this location by approximately 1986. Since 1987, dissolved solids have ranged from 42 to 710 mg/L. Although primary recharge to the aquifer at this location is from the Tongue River, the unusually low concentrations of dissolved solids at this location likely result from the influence of nearby Reservoir 14. Sulfate concentrations continue to fluctuate somewhat, but average less than 150 mg/L. Since 1987, of the eight-trace metals targeted, zinc was detected twice at 0.02 and 0.05 mg/L, and copper was detected once at 0.02 mg/L. Records indicate that, from 1987 through 1991, pH laboratory analyses of samples from this well consistently were above the Class III limit of 8.5, with a maximum pH measurement of 10 occurring in October 1990. Since 1992, three pH measurements have exceeded 8.5 while the life of well average pH from 37 samples is 7.6. These occurrences of elevated pH indicate not only the presence of soluble carbonate in the backfill matrix, but more importantly, these occurrences further confirm the nearly pristine backfill groundwater's initial lack of buffering capacity resulting from low concentrations of dissolved cations. Figure B-2 graphically illustrates the historical pH values of well 823-84.

Pit 3 spoils

Three additional backfill wells are situated in Pit 3 reclaimed spoils on the north side of the Tongue River. These include 745-82, 657-81 and the recently installed C-2001. Analytical results of Class III constituents for these three wells correspond respectively with Tables B-3, B-2, and B-8.

Analytical results from 745-82 have never exceeded any of the Class III constituent limits. Historically, TDS concentrations demonstrate a conclusive downward trend from 3760 mg/L in 1982 to approximately 1100 mg/L in recent years. The peak sulfate concentration has declined from 2230 to less than 600 mg/L since 1999. With exception to copper and zinc occurring near the detection limit on isolated occasions, Class III trace metals are generally no longer detected in well 745-82.

The analytical results presented in Table B-2 for spoils well 657-81 are atypical of those obtained from other wells in Big Horn Coal Company's Pits 1, 2, and 3 backfill. Several factors contribute to the delayed stabilization of groundwater quality at 657-81. These factors include localized low aquifer transmissivity and probable infiltration of low quality groundwater resulting from exposure to numerous active underground coal fires burning in the partially saturated areas of the adjacent Monarch coal seam to the northwest. The underground coal fires are located outside of Big Horn Coal's Pit 3 disturbance in areas of historical underground mine workings and are currently observed approximately 1,000 feet northwest of 657-81. Water temperature measurements during sampling of 657-81 have historically fluctuated and have exceeded 20° Celsius on several occasions. Elevated groundwater TDS concentrations potentially attributable to underground combustion of local coal aquifers is found in the results of baseline monitoring presented in Appendix D6 of the Welch No.1-North Mine's Permit 497-T3 (1999). The Welch Mine is located north and adjacent to Big Horn Mine property. There are documented, active burns in dry or partially saturated zones of the Dietz 2, Dietz 3, and Monarch seams within and adjacent to the Welch Mine that are believed to be associated with the abandoned Acme underground coal mine. One of the historic Welch Mine Dietz 3 monitoring wells (D3-M1), located within one half mile downdip (and hydraulically downgradient) from a documented active burn,

consistently yielded elevated TDS concentrations of approximately 5800 mg/L in the early and mid-1980's, prior to the well's abandonment. Other Dietz 3 monitoring wells closer to the burn were dry, however, down hole temperature measurements at these locations exceeded 70° C. Additionally, several Monarch coal wells located less than one mile downgradient from the burn contained elevated baseline TDS concentrations on the order of 2500 mg/L, over two times the concentration observed in Big Horn Mine's 825-84 Monarch monitoring well.

Since sampling commenced at 657-81, peak TDS concentrations (6440 mg/L in 1984) have declined to less than 6000 mg/L in recent years, but typically remain above target Class III limits. Several times throughout monitoring, concentrations of dissolved solids have shown dramatic fluctuations, apparently from subtle temporary shifts in the principal source of recharge or infiltration paths. In 1991, TDS concentrations abruptly fell to 546 mg/L with another significant temporary reduction in TDS occurring in 1999. Maximum sulfate concentrations of 3280 mg/L have fallen and continued to remain below Class III limits since 1996. Although chromium concentrations intermittently exceeded 0.05 mg/L from 1982 to 1989, since 1990 this element has not been detected at 657-81. Analytical results for pH, TDS, sulfate and chromium are provided in graphical format as Figures B-3 through B-5.

A single water sample (Table B-8) has been collected from the recently installed Pit 3 spoils monitoring well (C-2001) that was completed in the northern area of the backfill. Initial water quality testing confirmed all constituents to be below the targeted livestock criteria limits. Currently, sulfate concentrations are at 2100 mg/L and the TDS results are reported to be 3960 mg/L. With exception to zinc, which was found to be present at 0.02 mg/L, there were no detectable concentrations of the Class III trace metals present. Water quality in the adjacent spoils is expected to continue to improve quickly as a result of further influence from the new Pit 3 Reservoir.

Pit 4 spoils

Although there is insufficient quantity of water to develop for livestock use in the reclaimed Pit 4 backfill, sufficient volume is available to sample. Because of very limited

infiltration, the water quality at the single monitoring well (816-83, Table B-4) has been slow to stabilize. Water quality at the well has, however, shown significant improvement. Historically, the pH has fallen below the targeted range of 6.5 to 8.5 and TDS, sulfate and chromium have exceeded the targeted Class III limits. These constituent concentrations are presented in graphical format as Figures B-6 through B-8. Additionally, at one time or another, all of the other seven Class III trace metals have been detected. As of the most recent three samples collected since 1997, only TDS has exceeded target Class III limits from a single sample.

Pit 5 spoils

Due to the lack of groundwater in the Pit 5 area prior to mining, as anticipated, the backfill contains insufficient quantity of groundwater to develop for livestock use. Sufficient water is available to sample well 906-90 by purging slowly with a hand bailer. The well produced less than 10 gallons during the most recent sampling event. Analytical results for this well are summarized in Table B-7 and with some exceptions mentioned below, are generally within Class III limits. A single sample collected in April 1998 contained TDS concentrations above 5000 mg/L. Also, there have been three radical single sample spikes in nitrate and nitrite concentrations at the well occurring in 1998, 1999, and 2001 that have ranged from 113 to 338 mg/l. Figures B-9 and B-10 graphically show concentrations of TDS and nitrate and nitrite compounds from 1992 through the present. Ammonia concentrations show simultaneous spikes ranging from approximately 62 to 133 mg/L. Very low concentrations of aluminum, copper, selenium and zinc have been present on occasion in samples from well 906-90; however these trace metals are typically not detected. With exception to the occurrences of the three nutrient concentration spikes mentioned earlier, backfill water quality at Pit 5 appears relatively stable and the groundwater has otherwise consistently met livestock use limits.

Livestock grazing probably has not contributed to the intermittently elevated nitrogen compounds observed at 906-90, based upon the limited amount of seasonal unconfined grazing conducted within and above the reclaimed Pit 5 area. Although there is the potential for isolated remnants of nitrogen based blasting agents to occur within surface coal

mine backfill, in this case the source for the elevated concentrations of nitrogen compounds is more likely attributed to backfill recharge water that is exposed to the underground coal fires known to exist in the adjacent, abandoned underground Acme Mine workings. Baseline ammonia concentrations at the Welch No.1 Mine's historic D3-M1 monitoring well (discussed earlier in this section), intermittently exceeded 15 mg/L. During the same period of baseline groundwater monitoring, several other Welch Mine Dietz 3 and Monarch monitoring wells located within one mile downgradient from areas of the Acme Mine underground burn also demonstrated erratic low-level fluctuations in ammonia and combined nitrate and nitrite concentrations.

Tongue River alluvium

Groundwater quality of the Tongue River alluvium aquifer is monitored at a single downgradient well location from the Big Horn Mine (644-80, Table B-9). Groundwater quality of the alluvium at this location has been and continues to be of excellent livestock quality. With exception to a single anomalous occurrence of lead, Class III limits have not been exceeded in over twenty years of routine monitoring. For this assessment, one analytical result for nitrate and nitrite (1.22 mg/L) and one lead result (0.24 mg/L) are considered anomalies and were not included for the statistical assessment.

Dietz 2 coal

The analyses from two recent Dietz 2 coal aquifer water samples obtained downgradient from the Big Horn Mine at well 828-84 (Table B-10) confirm excellent livestock water quality. Sulfate is not a detectable constituent at this location and TDS averages 1250 mg/L. Trace metal concentration averages are below detectable levels.

Dietz 3 coal

Analytical results from wells 468-79 and 827-84 are assessed in Tables B-11 and B-12. These results characterize the water quality downgradient from the Big Horn Mine in the adjacent Dietz 3 coal aquifer. The data from both wells confirm excellent water quality for livestock use and indicate no degradation of water quality in approximately two decades of monitoring.

Monarch coal

Two downgradient Monarch coal aquifer wells (467-79 and 825-84) are located to the east and northeast of the Big Horn Mine. The analytical results obtained from over 15 years of monitoring both wells are presented in Tables B-13 and B-14. As with the water quality from the overlying Dietz 2 and Dietz 3 coal aquifers, groundwater quality from the Monarch coal continues to meet livestock use criteria. Class III constituents have never exceeded target limits to date, and there have been no apparent changes in constituent concentrations resulting from Big Horn Mine's operations.

Carney coal

The analytical results obtained from 35 samples collected since 1979 from monitoring well 465-79 are presented in Table B-15. The data represents historic water quality monitored from the Carney coal aquifer. As stated previously, Big Horn Coal did not physically or hydraulically impact the Carney coal. Water quality of the Carney aquifer has and continues to be suitable for livestock use.

III VERIFICATION OF POSTMINING PROBABLE HYDROLOGIC CONSEQUENCES

III.A Review Of Predicted Probable Hydrologic Consequences

As stated in Section 6.2.2 of the Reclamation Plan, the coal seams mined at Big Horn Coal, in descending order the Dietz 2, Dietz 3 and Monarch coals, together with the alluvium of Goose Creek and Tongue River valleys, were identified as the only strata physically mined that is capable of yielding enough groundwater to be classified as aquifers. The Carney coal seam, another aquifer found about 100 feet beneath the Monarch, was not physically or hydrologically affected by mining. Prior to mining, the Dietz and Monarch coal seams were locally recharged primarily by groundwater where the coals subcropped in saturated alluvium of Goose Creek and Tongue River valleys. Mining within Pits 1, 2 and 3 variously affected groundwater elevations in the coal seams depending upon the positions of the pits relative to the coals' alluvial subcrop zones. Potentiometric declines of 10 feet and more were recorded in the Dietz 2 and Dietz 3 seams up to about one mile downdip (southeast and east) of mining and up to about 1.5 miles downdip of the mine in Monarch coal (Section 6.2.2, Reclamation Plan). The coal seams were dry in Pits 4 and 5 and no aquifers were intercepted in these areas. The southern boundary of Pit 3 intercepted saturated alluvium of Tongue River along a length of about 2,000 feet. This caused the water table in the alluvium to decline over a portion of the valley floor between the river and the mine pit. Mining did not cause water table declines in alluvial wells monitored by the mine other than those proximate to the southern boundary of Pit 3 (Section 6.2.2, Reclamation Plan). No unnatural groundwater quality changes were observed in either the affected coal seam aquifers or in the alluvium of the stream valleys (Section 6.2.2, Reclamation Plan). The channel and alluvial deposits of Goose Creek were also mined in the 1950's and 1960's but hydrologic impacts were not predicted for this mining because it was pre-law.

With the creation of Pit 3 Reservoir, the postmining hydrology of Big Horn Mine will be significantly different than premining. Beyond the existence of the reservoir where none existed prior to mining, the changes will be rather limited with regard to postmining groundwater quantity and quality. The reservoir will be supplied primarily by the North

French Drain, which connects the reservoir to channel flows in Tongue River, and by the South French Drain, which connects the reservoir to saturated alluvium of Tongue River upstream of the North French Drain. Other, projected water supplies to Pit 3 Reservoir include groundwater sources from reclaimed saturated spoils and the Dietz 3 and Monarch coal seams but these sources will be minor relative to what will be provided by the two French drains (Section 7, Reclamation Plan). The average pool elevation of the reservoir will be below the floor of Tongue River alluvium where the alluvium connects to the South French Drain, meaning that the water table in the alluvium proximate to the drain will be permanently lower than premining. Permanent drawdown of the alluvial water table is projected to occur only proximate to the South French Drain where it will extend slightly less than half-way across Tongue River valley south from Pit 3 Reservoir to the river channel (see Exhibit RP-25 and Section 7.3.1.1.1, Reclamation Plan). The mined edges of the Dietz 3 and Monarch coal seams will be below the normal operating level of the reservoir and, although the edges of both seams were covered with backfill, the reservoir should act as a constant head recharge source to the coals similar to the natural subcrops of the coals in saturated alluvium of both Tongue River and Goose Creek (see Exhibits RP-15 and RP-16, Reclamation Plan).

III.A.1 Groundwater Elevations, Recharge And Infiltration Rates, Water Quality And Aquifer Yields

Groundwater elevations

Groundwater elevations in the affected coal seam aquifers and in the reclaimed spoils are projected to recover relatively rapidly to equilibrium conditions after final backfilling of the mine pits and after Pit 3 Reservoir fills (Section 6.2.2, Reclamation Plan). Groundwater elevations will recover quickly in the aquifers because of significant recharge in the form of seepage from perennial channel flows in Tongue River and Goose Creek, as well as by groundwater flow from the saturated alluvium of these valleys where the alluvium contacts the spoils and where the alluvium contacts remaining coal subcrops. Groundwater elevations in Dietz 2 coal are projected to fully recover within two years after final backfilling of Pit 1 (by year 1999). Groundwater elevations in the Dietz 3 and Monarch seams are predicted to fully recover within two to three years after filling of Pit 3 Reservoir. Postmining

groundwater elevations in the coal seam aquifers are expected to be similar to premining groundwater elevations. Groundwater elevations and gradients in the reclaimed spoils of Pits 1 through 3 were projected to be approximately the same as the premining Monarch coal. Attainment of hydrostatic equilibrium within the spoils is projected to occur within five years of final Pit 3 reclamation (Section 6.2.2, Reclamation Plan). Pit 3 Reservoir began filling in late 2000, and as of January 2002, it appears that the reservoir will reach its normal pool elevation (3560.5 feet) before the end of the first quarter 2002.

Infiltration and recharge rates

Section 6.1.5 of the Reclamation Plan describes how the reclaimed backfill will be recharged simultaneously with and by the same mechanisms as the coal aquifers since the backfill is physically connected to the same alluvial recharge sources and to the reconstructed Tongue River channel adjacent to Pit 2. Recharge to all affected aquifers and to the backfill of Pits 1 through 3 is projected to be relatively rapid, as described above. A backfill aquifer will not be restored in Pits 4 and 5 because these areas lie stratigraphically and topographically above the Tongue River valley where lateral groundwater recharge is inadequate to sustain significant groundwater saturation (Section 6.2.2, Reclamation Plan). Recharge to the Pits 4 and 5 spoils is predicted to be restricted to precipitation infiltration as opposed to the significant lateral groundwater recharge provided by the alluvium of Tongue River and Goose Creek valleys.

Postmining infiltration rates are qualitatively discussed in Section 6.2.2 of the Reclamation Plan in the context of referencing groundwater elevation recovery rates observed in coal monitoring wells. Postmining water table elevations in the backfill of Pits 1 through 3 are predicted to be hydraulically connected to the Monarch coal and to the saturated alluvium of Goose Creek and Tongue River. Based on these observations and conclusions, groundwater resaturation rates (groundwater infiltration rates) are projected to be relatively rapid for the affected coal and Tongue River alluvial aquifers as well as for the backfill itself.

Groundwater quality

The groundwater quality of the postmining spoils is predicted to be diverse but total dissolved solids concentrations are projected to decline over time as saturation levels and

groundwater flow patterns stabilize. Ultimately, the groundwater quality of the spoils is predicted to be suitable for the same uses that the coal aquifers had prior to mining (Section 6.2.2, Reclamation Plan).

Aquifer yields

Section 6.1.5 of the Reclamation Plan concludes that premining groundwater flow directions and gradients will be restored in the coal aquifers proximate to the reclaimed spoils of Pits 1 through 3; hence it can be inferred that the groundwater yields, transmissivities and storage characteristics of these aquifers will be restored. Section 6.2.2 of the Reclamation Plan concludes that the transmissivities of the resaturated spoils in Pits 1 through 3 appear to be at least that of the undisturbed coal aquifers; therefore it can be inferred that these spoils will yield sufficient groundwater for livestock watering as did the premining coal aquifers.

III.A.2 Projected Surface Water/Groundwater Interactions

In Section 6.2.3 of the Reclamation Plan, the most significant source of postmining coal recharge is stated to be Tongue River and its alluvium. The coal seams, particularly the Monarch, are projected to be the principal source of groundwater recharge to the backfill of Pits 1 through 3. Streamflow depletion in Tongue River associated with aquifer drawdown is described as minute, if any, and projected to cease after reclamation is complete and groundwater elevations in the coals and spoils aquifers have recovered. Section 7 of the Reclamation Plan describes the functions of the French drains on Pit 3 Reservoir to permanently connect the reservoir to the channel flow and alluvial groundwater flow of Tongue River. The South French Drain will permanently lower the water table in the alluvium of the river proximate to the drain. These projections taken together, it is clear that the Tongue River fluvial system is projected to remain a critical component in the surface and groundwater functions of Big Horn Mine.

III.B Demonstration Of Groundwater Restoration

This document has shown that the quantity of groundwater in the affected aquifers and backfill at Big Horn Mine has been essentially fully restored. Lateral groundwater flow from

the alluvium of Tongue River and Goose Creek valleys together with direct infiltration of streamflow in Tongue River over its reconstructed reach have been predominate recharge sources restoring subsurface flow and water storage in the backfill of Pits 1 through 3 and the affected coal aquifers. Resaturation (effective infiltration) rates in Pits 1 through 3 have been high while the backfill of Pits 4 and 5 remain essentially dry, as predicted. As of October 2001 or before, groundwater elevations and patterns of groundwater movement in the backfill and in the affected coal seams proximate to the backfill closely matched those predicted for equilibrium conditions in the Reclamation Plan. The storage characteristics of the coal seam aquifers have been restored with the recovery of the aquifers' potentiometric elevations. The backfill rapidly transmits water from surface sources as evidenced by groundwater elevations in the backfill changing seasonally in response to changes in stream stages and changes in alluvial water table elevations in Tongue River and Goose Creek valleys. Groundwater moving in to and out of storage in the backfill has been sufficient to provide a perennial pool in Reservoir 14 of Pit 1. Evidence obtained from test holes and most monitor wells indicates moderate to high rates of groundwater movement and storage in the spoils. Groundwater yields recorded from test holes and monitor wells completed in Pits 1 through 3 spoils are generally more than adequate to supply conventional livestock watering wells.

Water table elevations in the alluvium of Tongue River valley adjacent to the South French Drain on the Pit 3 Reservoir show permanent drawdown, as predicted. The alluvial groundwater will remain a principal supply source for the reservoir. Groundwater elevations and flow patterns now found within the alluvium near South French Drain agree with predictions made in the Reclamation Plan and appear to be in equilibrium with recharge provided by the Tongue River fluvial system.

With the exception of well 657-81 in Pit 3, groundwater quality data for Pits 1 through 3 spoils overwhelmingly indicate that the water is acceptable for livestock use per standards set forth by the WDEQ/WQD (Rules and Regulations, Chapter VIII, Section 5, Table 1). Solute concentrations exceeding the livestock use standards have been relatively rare in the backfill groundwater with the exception of well 657-81 in Pit 3 and well 823-84 in Pit 1. Over the past 20 years, total dissolved solids and sulfate concentrations in the groundwater of well 657 have frequently exceeded the livestock use standards, although the concentrations have diminished somewhat over time. High solute concentrations in well 657-81 are probably

due to the fact that the transmissivity (groundwater flow rate) of the spoils is known to be very small there. The elevated sulfate and TDS concentrations at well 657-81 will very likely continue to diminish over time as the spoils continue to be recharged and flushed, as has been observed at mines in the northern Powder River Basin (see Section II). The groundwater quality in well No. 823-84 in Pit 1 is uniquely different from all other spoil aquifer wells in that the solute concentrations there are very low but pH values frequently exceeded the livestock use standard prior to 1992. The high pH values in this well have diminished over time as the carbonate buffering capacity of the water increased with increasing solute concentrations. With the exception of the high pH values, the quality of the water at well 823-84 has otherwise frequently been excellent, meeting even the domestic use criteria of the Wyoming Department of Environmental Quality, Water Quality Division (R&R, Chapter VIII, 1993). The groundwater quality at both wells 657-81 and 823-84, while continuing to improve over time, is not indicative of Big Horn Mine's spoils aquifer as a whole having water quality suitable for livestock consumption.

Groundwater elevations in the backfill will continue to rise some two to four feet in areas proximate to Pit 3 Reservoir as the reservoir fills to its normal operating elevation. The patterns of groundwater flow will remain the same as shown in this document and water table elevations in the backfill and in the spoils proximate to the backfill will continue to fluctuate together in phase with seasonal changes in the stages of Tongue River and Goose Creek. Solute concentrations in groundwater of the Pit 1 through 3 spoils will continue to diminish and become more areally consistent as soluble mineral constituents are flushed out of the spoils.

IV REFERENCES

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REPORT TABLES

TABLE 1 DOUBLE RING INFILTRATION TEST RESULTS

SITE NO.	LOCATION COORDINATES				INFILTRATION RATE (INCHES/HOUR)
	MINE	AREA	NORTHING	EASTING	
BH1	*	PIT 1	1544320	595950	1.85
BH3		PIT 3	1548550	594850	1.42
BH4		PIT 3	1548590	594510	0.95
BH5		PIT 3	1549720	594940	0.77
BH6		PIT 3	1550550	594980	1.74
BH8	*	PIT 4	1550094	589195	0.42
BH9	*	PIT 4	1549922	589013	0.07
BH10	*	PIT 4	1549777	590248	0.14
BH11	*	PIT 4	1550106	589479	0.12
BH12	*	PIT 4	1549566	590512	0.15
BH13	*	PIT 4	1549508	590702	0.32
BH14		TONGUE RIVER	1545981	586156	0.62
BH15		TONGUE RIVER	1546581	585818	8.58
BH16		TONGUE RIVER	1545921	586765	0.96
BH17		TONGUE RIVER	1545527	585226	0.39
BH18		TONGUE RIVER	1545515	585819	1.09
BH23		TONGUE RIVER	1547182	594578	1.22
BH24		TONGUE RIVER	1547160	595008	3.06
BH25		TONGUE RIVER	1547164	595229	1.92
BH27		PIT 3	1548684	594249	3.67
BH32		PIT 3	1551117	594412	1.54
BH34		PIT 3	1547606	592807	0.28
BH35		PIT 1	1545466	593034	7.25
BH36		GOOSE CREEK	1541865	590222	3.74
BH37		GOOSE CREEK	1541806	590370	8.24
BH48	*	PIT 1	1543157	592479	0.10
BH49	*	PIT 1	1544349	592109	0.65
BH50	*	PIT 3	1549126	593083	0.46
BH51	*	PIT 3	1549902	593295	0.54
BH52	*	PIT 3	1542090	591965	1.15
BH53	*	PIT 3	1541715	592150	0.39
BH54	*	PIT 3	1544985	597378	4.35
BH55	*	PIT 4	1549520	590015	3.00
BH56	*	PIT 4	1549950	588045	1.41

* INDICATES THE TEST DATA/RESULTS ARE NOT INCLUDED IN APPENDICES D6 AND D11 OF PERMIT 213-T3.

Table 2 Spoil aquifer hydraulic properties - Big Horn Coal Area										
Aquifer	Spoils	Spoils	Spoils	Spoils		Spoils	Spoils	Spoils	Spoils	Spoils
Well #	Plachek Pit Wells	655	656	657		658	745 746	819	823	818
Date of Test	15-Jul-75	21-Jul-81	14-Jul-81	10-Aug-82	06-Oct-81	06-Oct-81	09-Jul-82	20-Mar-84	21-Mar-84	
Source	Rahn	KM&E	KM&E	KM&E		KM&E	KM&E	KM&E	KM&E	
TYPE OF TEST	Time-Drawdown; leaky type curves	Jacob Time - Drawdown Time-Calc. Recovery Theis Nonequilibrium	Jacob Time-Recovery	Jacob Time Drawdown/ Recovery	Slug Method	Slug Method	Jacob Time Drawdown/ Recovery; Theis Time-Calc Recovery	Jacob Time Drawdown/ Recovery	Jacob Time Drawdown/ Recovery; Theis Non-Leaky	
Length of Test (HRS)	46.30	26.00	5.83	3.25	1.58	1.92	6.32	4.08	22.20	
Discharge (GPM)	6.50	37.00	1.29	0.65	----	----	1.67	0.55	1.73	
Final Drawdown (FT)	19.12	0.82	25.78	5.28	10.35	12.82	2.72	51.97	100.90	
Specific Capacity (GPM / FT)	0.30	----	0.10	0.12	----	----	0.60	0.00	0.20	
Hydraulic Conductivity (GPD/FT ²)	4.00	1182?	0.85?	58?	7?	14.25?	930?	1.2?	10.1?	481.7? 509.0?
Transmissivity (GPD/FT)	172	22466	11	58	26	57	17662	5	191	9153 9671
Storage Coefficient	0.23	6.0x10 ⁻³	----	----	----	----	2.0x10 ⁻⁴	----	----	1.4x10 ⁻² 1.2x10 ⁻²
COMMENTS	From Rahn report (Gerlach Thesis)	Pumped well 654. Unable to measure its water level; all aquifer coefficients derived from observation well 655. Saturated thickness questionable	Saturated thickness is questionable	Two tests ran; Base of spoils not exactly known		Saturated thickness is questionable; base of spoils questionable	745 pumped well; 746 observation. Saturated thickness is questionable	Base of spoils questionable; good test	Pumped well, well efficiency poor; base of spoils questionable	Observation well; base of spoils questionable

This is reprinted Table RP-12 from Big Horn Coal Company's Reclamation Plan (Permit 213-T5).

Table 3 Effective Infiltration Rates In Backfill For Selected Areas Of Pits One And Two At Big Horn Mine ¹**Topsoil Application Area 1-1**

Sampled	May-85	Coal Thickness (ft)	22
Approved	02/20/1998	Porosity	20%
Area (ft ²)	1,370,094	Last Groundwater Sample	Oct-01
Saturated Spoils Volume (ft ³)	77,544,000	Recharge Starting Date	Jul-78
Water Volume (ft ³)	15,508,800		
Recharge Time (years)	23.2		
Groundwater Movement (ac-ft/day)	0.04		
Effective Infiltration Rate (in/yr)	5.9		

Topsoil Application Area 1-2

Sampled	Jun-87
Approved	07/14/1987
Area (ft ²)	2,031,313
Saturated Spoils Volume (ft ³)	117,126,000
Water Volume (ft ³)	23,425,200
Recharge Time (years)	23.2
Groundwater Movement (ac-ft/day)	0.06
Effective Infiltration Rate (in/yr)	6.0

Topsoil Application Area 1-3

Sampled	Apr-96
Approved	10/24/1996
Area (ft ²)	1,438,327
Saturated Spoils Volume (ft ³)	193,077,000
Water Volume (ft ³)	38,615,400
Recharge Time (years)	23.2
Groundwater Movement (ac-ft/day)	0.10
Effective Infiltration Rate (in/yr)	13.9

Topsoil Application Area 1-4

Sampled	3rd Qtr. 97
Approved	06/16/1998
Area (ft ²)	5,523,236
Saturated Spoils Volume (ft ³)	493,506,000
Water Volume (ft ³)	98,701,200
Recharge Time (years)	23.2
Groundwater Movement (ac-ft/day)	0.27
Effective Infiltration Rate (in/yr)	9.3

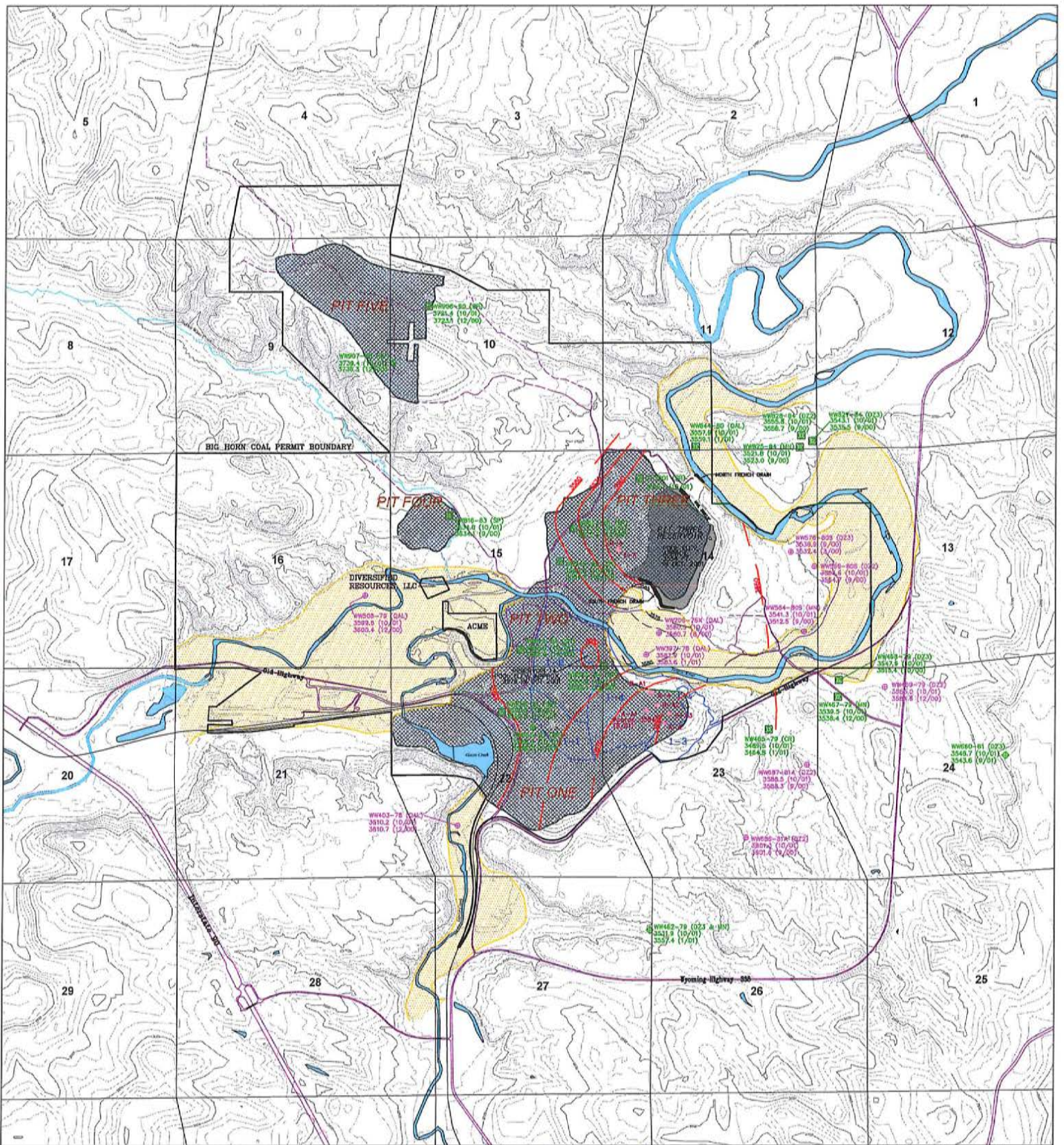
1. As used in this analysis, the effective infiltration rate is the rate at which the spoils resaturated from all surface water and groundwater sources expressed as inches per year of water applied over each respective topsoil application unit.

TABLE 4 UNDERGROUND WATER CLASS USE SUITABILITY

	I	II	III
	Domestic	Agriculture	Livestock
Constituent or Parameter	Concentration*	Concent.*	Concent.*
Aluminum (Al)	---	5.0	5.0
Ammonia (NH ₃ -N)	0.5 ⁸	---	---
Arsenic (AS)	0.05	0.1	0.2
Barium (Ba)	1.0	---	---
Beryllium (Be)	---	0.1	---
Boron (B)	0.75	0.75	5.0
Cadmium (Cd)	0.01	0.01	0.05
Chloride (Cl)	250.0	100.0	2000.0
Chromium (Cr)	0.05	0.1	0.05
Cobalt (Co)	---	0.05	1.0
Copper (Cu)	1.0	0.2	0.5
Cyanide (CN)	0.2	---	---
Fluoride (F)	1.4-2.4 ⁷	---	---
Hydrogen Sulfide (H ₂ S)	0.05	---	---
Iron (Fe)	0.3	5.0	---
Lead (Pb)	0.05	5.0	0.1
Lithium (Li)	---	2.5	---
Manganese (Mn)	0.05	0.2	
Mercury (Hg)	0.002	---	0.00005
Nickel (Ni)	---	0.2	---
Nitrate (NO ₃ -N)	10.0	---	---
Nitrite (NO ₂ -N)	1.0	---	10.0
(NO ₃ +NO ₂)-N	---	---	100.0
Oil & Grease	Virtually Free	10.0	10.0
Phenol	0.001	---	---
Selenium (Se)	0.01	0.02	0.05
Silver (Ag)	0.05	---	---
Sulfate (SO ₄)	250.0	200.0	3000.0
Total Dissolved Solids (TDS)	500.0	2000.0	5000.0
Uranium (U)	5.0	5.0	5.0
Vanadium (V)	---	0.1	0.1
Zinc (Zn)	5.0	2.0	25.0
pH	6.5-9.0s.u.	4.5-9.0s.u.	6.5-8.5s.u
SAR	---	8	---
RSC	---	1.25 meq/l	---
Combined Total Radium 226 and Radium 228 ⁹	5pCi/l	5pCi/l	5pCi/l
Total Strontium 90	8pCi/l	8pCi/l	8pCi/l
Gross alpha particle radioactivity (in- cluding Radium 226 but excluding Radon and Uranium) ⁹	15pCi/l	15pCi/l	15pCi/l

*mg/l, unless other wise indicated

This is reprinted from Table 1, Chapter VIII, Wyoming Water Quality Rules And Regulations, March 1993.



POTENTIOMETRIC SURFACE BY MINE BACKFILL AND ADJACENT MONARCH COAL OBSERVED OCTOBER 2001 IN FEET AGL. DASHED LINES BEHIND PIPES.

APPROXIMATE WATER TABLE SURFACE CONTOUR IN ALLUVIUM OF TENSKE RIVER OBSERVED OCTOBER 2001, FEET AGL.

WATER WELL OF APPROVED MONITORING PROGRAM SHOWING GROUNDWATER ELEVATIONS IN FEET AGL. OBSERVED IN MOST RECENT MONITORING EVENT. WELL COMPLETION ABREVIATIONS ARE: (P) MINE BACKFILL (OAL) ALLUVIUM (O2) DITE 2 (OAL) DITE 3 (OAL) (M) MONARCH COAL (O) GUNNEY COAL. LOCATION SHOWN WITH SYMBOL. NAME WATER QUALITY DATA USED IN GROUNDWATER RESTORATION CONSIDERATION REPORT.

WATER WELL NOT LOCATED BY APPROVED MONITORING PROGRAM DURING GROUNDWATER ELEVATIONS IN FEET AGL. OBSERVED IN MOST RECENT MONITORING EVENT. WELL COMPLETION ABREVIATIONS ARE AS LISTED ABOVE.

TEST AREA PIPED AND ABANDONED BY ADJUTANT BOSS IN ATTEMPT TO CONSTRUCT BACKFILL MONITORING WELL. THE APPROXIMATE GROUNDWATER ELEVATION, IN FEET AGL, IS SHOWN WHERE AVAILABLE.

TOPSOIL RESTRICTED AREA FORMERLY APPROVED BY ENCLASSED RESTORE TOPSOIL WAS APPLIED. THESE PITS SHOULD HAVE USED TOP COMPLYING APPROXIMATE GROUNDWATER RESTORE RATES.

TENSKE RIVER AND DOUGLASS CREEK ALLUVIUM

RELEASED BACKFILLED SPILLS

LOCATION MAP

Scale: 1" = 1000'

Big Horn Coal Company
PO Box 724, Sheridan, Wyoming 82801

Year 2001 Groundwater Monitoring Network with Potentiometric Surface in Mine Backfill, Alluvium and Adjacent Monarch Coal Observed October 2001

Prepared by: A.T. Tully, Inc.

Date: 12/20/01

North Arrow: 21.3

Map Scale: T5

Sheet #: 1

C-2 Objection Exhibit A

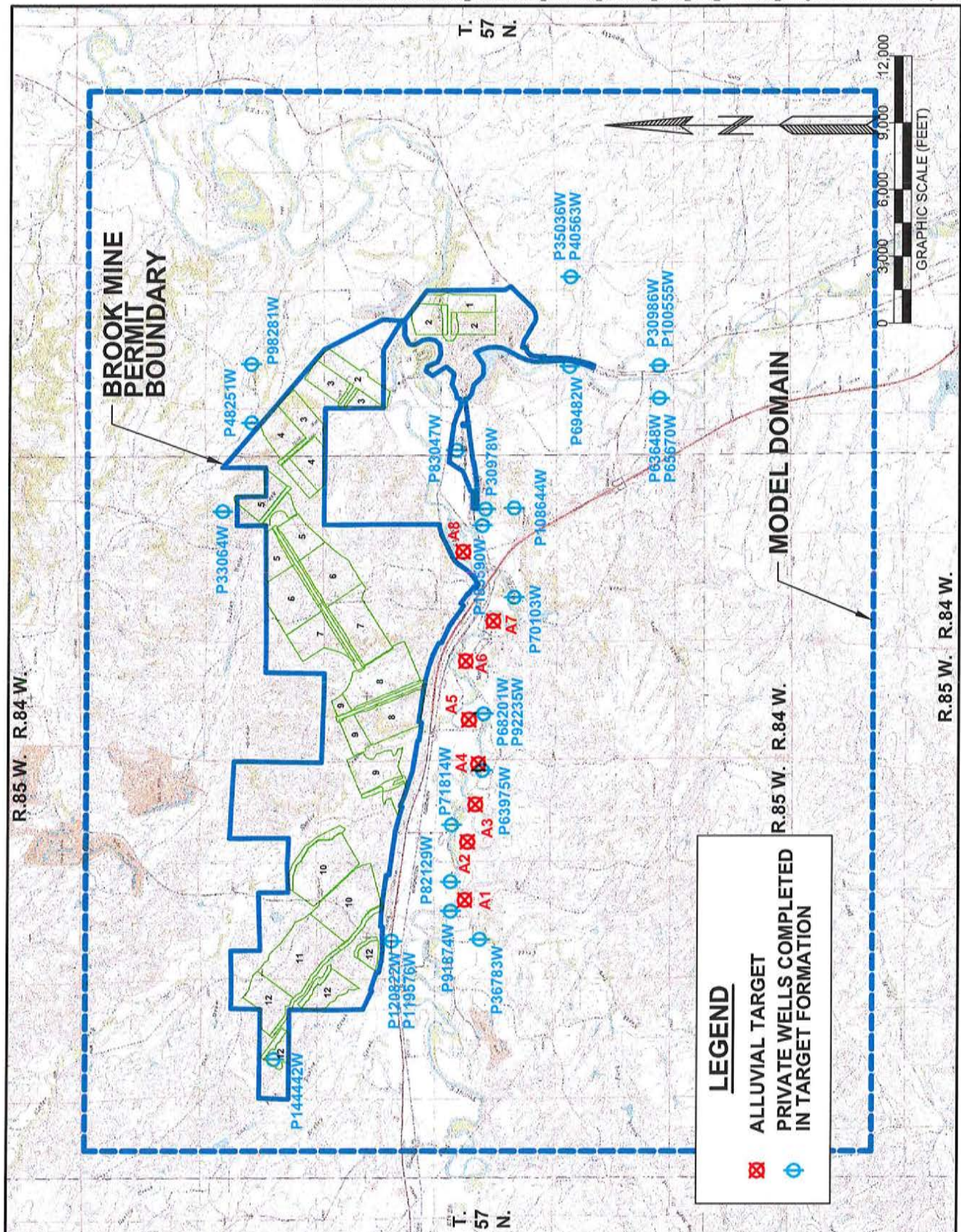


Figure 4.9-11. Domestic Well and Alluvial Target Locations.

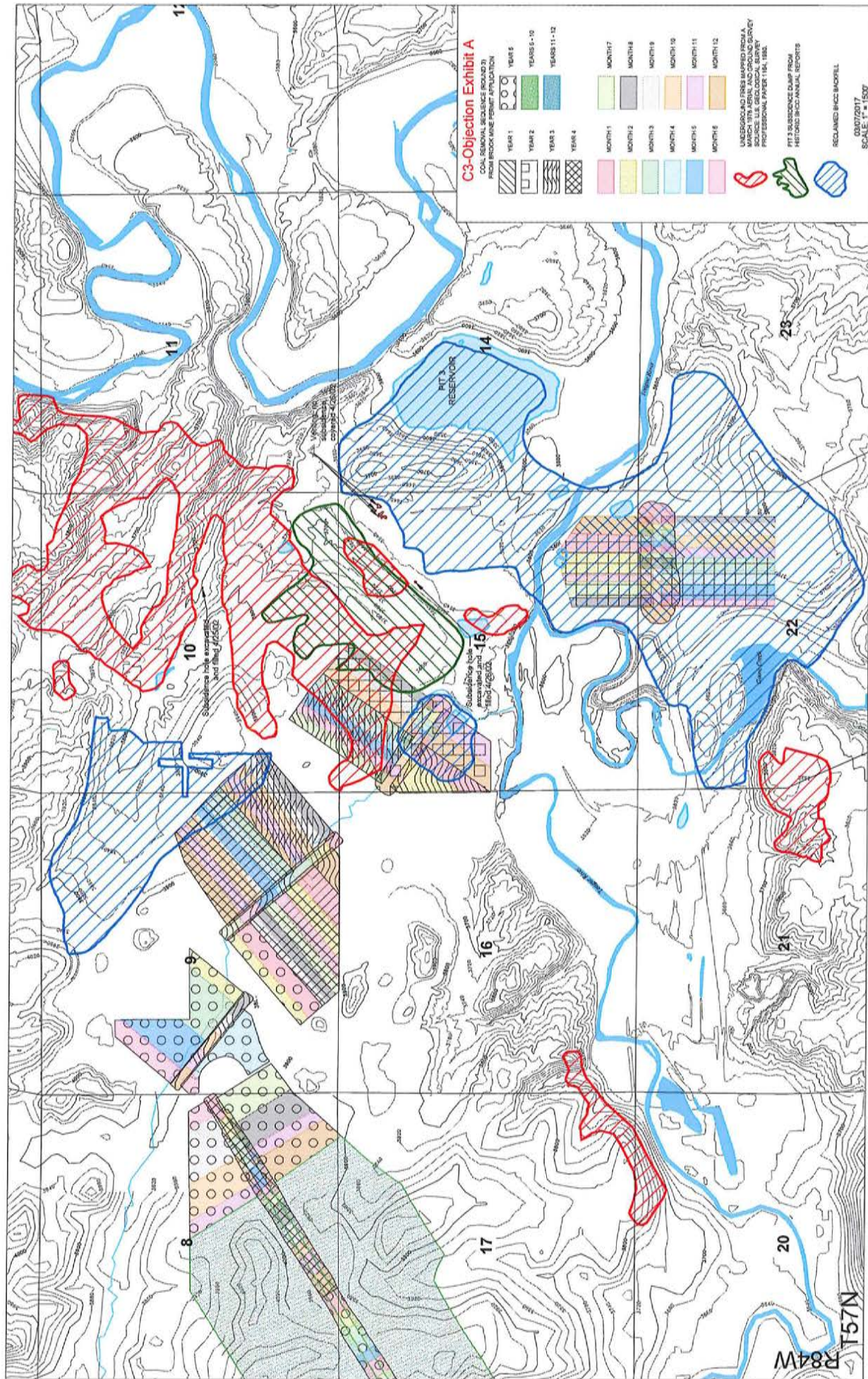
C-2 Objection Exhibit B

C2-Objection Exhibit B

Maximum Modeled Well Drawdown Relative to Well Completion Aquifers

Permit Number	Drill Date	Total Depth	Screen Interval (ft)	Aquifer Description	Model Layer	Model Maximum Drawdown
P82129W	10/01/1997	20	6-20	Sand and Gravel, Blue Shale	4	0.8
P120822W	10/10/2000	40	20-40	Gray shale and Alluvial Gravel	4	1.5
P91874W	03/08/1994	22	6-22	Sand Clay, Fine gravel, Dark Clay	4	0.5

C-3 Objection Exhibit A



1. Jason N. Todd

Mr. Todd is educated and trained in mining engineering with nearly twenty years of mining experience, which spans four continents and has primarily focused on coal mining. Mr. Todd will offer his opinions as to Brook Mining Co., LLC's surface coal mine application at issue in this contested case, particularly the submitted mine plan and its related documents, by evaluating the mining techniques, assumptions and parameters utilized in developing the mine plan, and the overall technical adequacy of the mine plan. A written designation of Mr. Todd's preliminary opinions, including the materials he has examined in developing his opinions, a statement of his qualifications, and his compensation for his work related to this matter are attached hereto as **Exhibit A**.

Mr. Todd will testify consistent with his statements and opinions as set forth in **Exhibit A** and reserves the right to expound upon and/or clarify those statements and opinions. Big Horn notes that discovery is yet to begin in this matter and Mr. Todd also reserves the right to supplement his opinions based upon the review of additional information and to provide testimony in rebuttal to any opinions offered by any expert witness designated by any other party to this action, provided that such rebuttal is within his areas of expertise.

Pursuant to the Order of Consolidation and Schedule of the EQC in this matter, dated March 13, 2017, all and any exhibits to be utilized or relied on by Mr. Todd will be disclosed on or before May 17, 2017. As a matter of good faith disclosure, at this time Mr. Todd does not intend to use any exhibits other than portions of Brook Mining Co., LLC's surface coal mine application, which is available to all parties in this matter.

2. Paul (Joe) Gerlach

Mr. Gerlach is a Professional Geologist, educated and trained in the fields of geology and hydrology with forty years of experience in these fields, including significant experience related to coal mining operations. Mr. Gerlach also has significant experience in preparing and assisting in the preparation of several mine and/or reclamation plans related to surface coal mining permit applications. Mr. Gerlach will offer his opinions as to Brook Mining Co., LLC's surface coal mine application at issue in this contested matter, particularly regarding the hydrologic, geologic, subsidence and safety analysis and related impacts associated with the proposed coal mining operations. A written designation of Mr. Gerlach's preliminary opinions, including the materials he has examined in developing his opinions, a statement of his qualifications and his fee schedule for his work related to this matter, are attached hereto as **Exhibit B**.

Mr. Gerlach will testify consistent with his statements and opinions as set forth in **Exhibit B** and reserves the right to expound upon and/or clarify those statements and opinions. Again, Big Horn notes that discovery is yet to begin in this matter and Mr. Gerlach also reserves the right to supplement his opinions based upon the review of additional information and to provide testimony in rebuttal to any opinions offered by any expert witness designated by any other party to this action, provided that such rebuttal is within his areas of expertise.

Pursuant to the Order of Consolidation and Schedule of the EQC in this matter, dated March 13, 2017, all and any exhibits to be utilized or relied on by Mr. Gerlach will be disclosed on or before May 17, 2017. As a matter of good faith disclosure, at this time

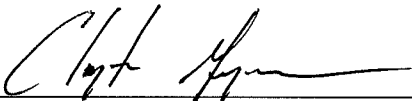
the exhibits Mr. Gerlach currently intends to utilize to support his opinions and testimony can be found included as part of **Exhibit B**. Mr. Gerlach also reserves the right to utilize any portion of Brook Mining Co., LLC's surface coal mine application as an exhibit to support his testimony, which is available to all parties in this matter.

Both Mr. Todd and Mr. Gerlach may also testify in support of any of the objections set forth in Big Horns Objections to Proposed Brook Mine Permit Application filed with the Wyoming Department of Environmental Quality, dated January 25, 2017, attached hereto as **Exhibit C**, provided the testimony is within their area of expertise.

Big Horn reserves the right to call any expert witness, whether retained or non-retained, designated by any other party to this action or identified in any manner pursuant to the Wyoming Rules of Civil Procedure, including those identified in written discovery responses and/or documents produced in response to discovery requests.

Big Horn also reserves the right to designate any and all witnesses necessary for rebuttal to any expert testimony offered by any other party to this matter.

DATED: April 3, 2017.

By 
Lynnette Boomgaarden (WSB # 5-2837)
Clayton H. Gregersen (WSB # 7-5677)
Crowley Fleck PLLP
237 Storey Boulevard, Suite 110
Cheyenne, WY 82009
(307) 426-4100

*Attorney for Objectors
Big Horn Coal Company*

CERTIFICATE OF SERVICE

I hereby certify that on April 3, 2017, a true and correct copy of the foregoing was served by email to the following:

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Handwritten signature of Clay M. [unclear] over a horizontal line.

EXHIBIT C



**BIG HORN COAL COMPANY
10980 SOUTH JORDAN GATEWAY
SOUTH JORDAN, UT 84095**

January 25, 2017

Wyoming Department of Environmental Quality
Land Quality Division
200 W. 17th Street
Cheyenne, WY 82002

ATTN: Mr. Alan Edwards, Assistant Administrator

**RE: Objections to Proposed Brook Mine Permit Application, Sheridan County,
Wyoming**

Dear Mr. Wendtland,

Big Horn Coal Company (BHCC) writes to provide objections to the Brook Mine permit application.

During the course of our review, we discovered that the information was inconsistent among the locations noted in the public notice. We advised Brook Mine's legal counsel of the inconsistency on December 20, 2016. We are not aware if the information was updated to correct the inconsistency between the locations.

Our objections are based upon what BHCC believes to be the most accurate, up-to-date information and relate primarily to the permit application's lack of adequately addressing hydrologic issues that could significantly affect existing and future water rights, the quantity and quality of surface water and groundwater within and adjacent to BHCC, the potential for coal seam fires to erupt in both the open pit and subsurface openings and the potential for miner safety and environmental harm proposed in the permit Mine Plan. The objections are referenced to text section headings, exhibits and addenda of the permit application Mine and Reclamation Plan.

Objection No. 1 – Mine Plan & Rec Plan Review

Big Horn Coal has reviewed the proposed mine and reclamation plan and is concerned with the general lack of detail contained in the proposed plan. It appears that no sampling, testing or analytical work of any sort has been performed to support the surface and highwall mine designs and plans. It is Big Horn Coal's opinion that excavating in the area, surrounding the Big Horn Mine will create a large safety concern and environmental

liability as the TR-1 trench cut could become inundated with water from the historic backfill of the BHCC spoils of Pit 1 and Pit 2.

BHCC would like to put on record that it is providing written notice of its concerns so Brook Mine and other affected parties have notice and are aware of these issues and that Big Horn Coal is not responsible for any personal, property or environmental damage or other loss due to the disturbance activities associated with the Brook Mine, its affiliated companies or successors in interest.

BHCC has not consented to overlapping permit boundaries nor has it been indemnified of any disturbance related to Brook Mine's proposed activities as it relates to the reclamation obligations and BHCC's reclamation liabilities.

Objection No. 2 – Section MP.4; Exhibit MP.4-1; Section MP.5; Section MP.13; Addendum MP-6

Section MP.4 and Exhibit MP.4-1 provide plans for the development of a highwall mining trench through and the development of highwall mining panels beneath reclaimed backfill of BHCC Pits 1 and 2 adjacent to Goose Creek and the Tongue River in the southeastern portion of the Brook Mine permit area. The trench would penetrate through the bottom of the backfill allowing mining of Carney coal found about 70 feet beneath the backfill. The backfill of the proposed trench area averages about 90 feet thick. The northeast corner of the highwall panel area appears on Exhibit MP.4-1 to be equivalent to the Brook Mine permit boundary, and would be less than 100 feet from the bank of the Tongue River. On Figure MP-6.1-1 of Addendum MP-6, the highwall mining panels are shown even closer to the Tongue River channel, and the reason for the disparity between the figure and Exhibit MP.4-1 is unexplained. BHCC is very concerned over and objects to the permit's disturbance, affected and permit boundaries all being equivalent to the mining panel boundary in this most environmentally sensitive area adjacent to the bank of the Tongue River. The affected area boundary shown on Exhibit MP.4-1 around the other proposed mining panels typically extends well beyond the disturbance boundary for reasons unexplained in the Mine Plan.

Mine Plan Section MP.4, together with all Mine Plan text inclusive of Section MP.13 and Addendum MP-6, are silent on the subject of the special textural and hydrologic characteristics of the proposed southeastern highwall mining area in Sections 15 and 22, T57N, R84W. The area is unique in that the strata overlying the coal to be mined includes a thick layer of unconsolidated, saturated backfill exhibiting shallow groundwater elevations of 20 feet or less below ground surface where existing ground elevations are 3600 feet and lower. The water surface in BHCC's postmining Reservoir 14 in the SESE Sec. 15 is an expression of the groundwater table. The groundwater throughout Pits 1 and 2 is directly connected to and recharged by Goose Creek and the Tongue River, as documented in the Big Horn Mine's Reclamation History, Groundwater Restoration Demonstration (GRD) approved by the WDEQ/LQD as Change No. 9 to Permit 213-T5 in August 2002. The GRD verifies that the Pits 1 and 2 backfill resaturated very rapidly, indicative of unconsolidated, porous material connected to perennial stream recharge sources nearby. Mine Plan Section MP.4 is silent on the subject of managing massive sloughing that may occur in the saturated and nonsaturated backfill of the southeastern highwall mining area as the highwall mining trenches are excavated through the backfill to the base of Carney coal. Section MP-5 of the Mine Plan also fails to present an

alternative water management and treatment plan to be followed should groundwater inflow volumes exceed infrastructure design capacities.

BHCC finds the assessment of potential land subsidence and the remediation plan presented for land subsidence in Addendum MP-6 to be inadequate relative to protecting the value and function of its lands, particularly for protecting the stability of the Tongue River and the quality of shallow groundwater connected to the river. Addendum MP-6 does not absolutely discount the possibility of land subsidence above the highwall miner holes, nor does it provide a plan for the discontinuation of any southeastern area highwall mining should subsidence occur in the lowlands contiguous to Tongue River or Goose Creek. The environmental implications of subsidence developing adjacent to Tongue River and Goose Creek are so severe as to warrant, at a minimum, a permit commitment to temporarily or permanently cease all mining throughout all of the southeastern highway mining area should any subsidence develop in any of the area at any time. The permit's plan for "backfilling will commence within 12 months of a subsidence location being identified if self-healing is not providing sufficient remediation" (Section MP-6.4, Addendum MP-6) is environmentally unacceptable for the southeastern highwall mining area because: 1) the stability and alignment of Goose Creek and Tongue River could be jeopardized should subsidence occur, and; 2) any groundwater quality impacts associated with underground coal fires developing in mine openings would have direct and essentially immediate access to Goose Creek and Tongue River via the shallow groundwater table.

The subsidence control plan presented in Addendum MP-6 is inadequate. It appears that no analytical work of any sort (sampling, material testing, etc.) has been performed in support of the highwall mining design presented in the mine plan. Additionally, it also appears that no geotechnical work of any sort has been performed. Addendum MP-6 discusses general assumptions for highwall mining penetration depths, entry widths, cutting heights and support pillars. This information is presented somewhat anecdotally and in the case of the support pillars, it states that "Support pillars will be designed to have a width equal to or exceeding the maximum extraction thickness anticipated in a highwall mining hole based on the mine's geologic model. This width-to-height ratio of at least 1:1 results in pillar stability factors that exceed recommended values suggested by National Institute for Occupational Safety and Health's (NIOSH) ARMPs-HWM stability program for the overburden thicknesses expected. Pillar dimension will also be in accordance with Brook Mine's Ground Control Plan approved by MSHA."

No material strength data (coal strength, overburden strength, interburden strength, etc.) is provided in the mine plan document. BHCC suspects that no material strength information has been gathered or determined. Can the NIOSH stability factors actually be achieved? This is unknown at this point as no definitive geotechnical and material strength data has been presented in the mine plan. The coals present in this area are of a younger age. Younger age coals have much weaker strengths than older age, deeper coals and it is quite possible that the safety and stability factors needed to safely and effectively execute the highwall mining approach presented in the mine plan cannot be achieved. BHCC insists that further analysis be performed to definitively prove that the web and barrier pillars dimensions are appropriate and that they will meet NIOSH's minimum stability factor of 1.3.

Very little highwall mining has been performed in Wyoming. Highwall mining has been performed relatively recently at the Bridger Mine, which is located in Southwest Wyoming.

While the exact details are unknown, BHCC is aware of at least one “cascading pillar failure” at that operation and fortunately, there were no injuries. It is suspected that this failure was caused by improper pillar layout and design. BHCC is concerned that the anecdotal mine design presented in this document is inadequate and must be performed with proper analytical data.

Objection No. 3 – Section MP.5.9; Section MP.6.2; Addendum MP-3; Section MP.8

The groundwater model of Addendum MP-3 was improperly constructed and executed because the model does not recognize the unique textural and hydraulic characteristics of saturated backfill in BHCC’s Pits 1 and 2, but instead simulates the backfill in the same fashion as native overburden strata (see Section 4.0 of Addendum MP-3). Section 2.5.1 of Addendum MP-3 states “no site-specific hydraulic conductivity information is available for the over/interburden (model) layers”. In fact, hydraulic conductivity data are available for the backfill from former monitor wells in the Pit 1 and Pit 2 area and for the Plachek Pit backfill. That data are provided in the GRD referenced under Objection No. 1 above. Hydraulic conductivity values assigned to the spoils together with all other “overburden” strata in the model are very small (less than one tenth) relative to those shown for backfill in the GRD. The groundwater model ignores determination of the spatial extent of drawdown in the water table of Pit 1 and Pit 2 backfill that is connected to the water table in Tongue River and Goose Creek alluvium, which in turn is supplied by flows in both streams. The text of Section MP.6.2.3 states “Drawdowns of the overburden were not modeled and only isolated sands where encountered are expected to be affected”.

Section 4.9 and Figure 4.9-11 of Addendum MP-3 shows where the groundwater model was used to predict water table drawdown in Tongue River valley alluvium at “alluvial target” points distributed over nearly a six-mile reach of the valley floor. Section 4.9 states that “the maximum impact to the Tongue River alluvium is conservatively estimated to reach 2.5 feet of drawdown near the river”. Addendum MP-3 and Section MP.6.2 provide no description or drawing of the spatial distribution of drawdown during mining in BHCC’s saturated backfill or in the alluvium of Tongue River and Goose Creek that is hydraulically connected to the backfill. Neither does the groundwater model explore potential permanent groundwater elevation changes associated with the highwall mining panels acting as drains to the backfill and alluvial water table via the highwall trench pits. Water table drawdown approaching 2.5 feet in the alluvium of Tongue River valley over a valley distance of nearly six miles would in fact represent a very large volume water loss that would likely cause stream flow losses.

The groundwater model of Addendum MP-3 fails to report groundwater inflow rates to any of the proposed mine excavations. Section MP.8 of the Mine Plan states “It is estimated that the total water use will be approximately 400 million gallons per year.” This is equivalent to an average daily use rate of 760 gallons per minute, about 3.36 acre-feet per day, or about 1,226 acre-feet per year. The Mine Plan does not identify the specific source(s) of the water beyond mentioning that “Industrial water will be obtained from groundwater wells or from water collected in sediment and flood control reservoirs”. The groundwater model of Addendum MP-3 does not include the effects of withdrawing any groundwater from wells for industrial or other uses, nor does it include the effects of dewatering wells mentioned in Section MP.5.9. In short, the Mine Plan is devoid of a hydrologic budget identifying specific groundwater sources, the quantity of industrial

water projected to be available from flood control reservoirs and sediment ponds, and the determination of what would remain of groundwater and surface water supplies while supplying the industrial water needs. BHCC is concerned that the value of its surface estate and future options for developing its surface estate could be marginalized by such a large water use demand, especially considering that water demands at Wyoming coal mines are primarily consumptive.

Objection No. 4 – Section MP.11; Addendum MP-5

The fire control plan referenced in Section MP.11 and presented in Addendum MP-5 describes measures to be taken to prevent and control fires in the mine pits, fires in the mine's processing and shop facilities, equipment fires and rangeland fires. BHCC objects, however to the Mine Plan and Addendum MP-5 not providing plans to control and extinguish new subsurface coal fires that may develop or existing subsurface coal fires that may become rekindled or enlarged as a result of the highwall mining panels that will be opened outboard of the highwall trench openings.

Attachment 1 provided with this Objection No. 4 is a drawing showing the approximate extent of underground coal mine fires in the area of proposed highwall mining in Sections 10 and 15, T57N, R84W, as reported by the U.S. Geological Survey in 1980. The fires in this particular area originated with mining of the Monarch coal. This and other nearby historic underground mines have long been known to exhibit numerous subsidence features and underground coal mine fires, and in the late 1980s BHCC received approval from the WDEQ/LQD to permanently place nearly 10 million bank cubic yards of overburden over the area shown on Attachment 1 in an attempt to reclaim the subsidence and control the fire. That unique reclamation feature is known as the Pit 3 Subsidence Dump in Big Horn Mine's reclamation history. The proposed highwall mining will develop mine openings in the Carney and Masters coal seams beneath the Monarch seam in areas that are known to still exhibit evidence of underground coal fires. Plumes of steam and smoke have been observed again over the general area of Sections 10 and 15 this winter of 2016-2017. These observations indicate that, in places, the perimeter of the historic subsurface coal seam fires has expanded notable distances from the referenced 1980 boundary delineation.

The subsidence control plan of Addendum MP-6 does little to guarantee the long-term protection of BHCC's surface estate especially where highwall mining panels will be driven beneath underground coal mine fires having a long history of activity. Section MP-6.2 of Addendum MP-6 provides numerical calculations for subsidence chimney heights, but there is no investigation of the potential that the historic mine fires may have compromised the structural integrity of strata underlying the fires and overlying the coals targeted for highwall panel mining (the interburden), leaving the interburden more prone to subside than normal. BHCC is particularly concerned and objects to highwall mining beneath or adjacent to pre-existing underground mine fires because of the potential for oxygen and water to be transmitted from the highwall mining openings to "hotspots" in the seams already burning via highwall trenches or via fractured or subsided interburden above the panel openings. BHCC strongly disagrees with the legitimacy of the plan stated in Section MP-6.4 of Addendum MP-6 which states "Backfilling will also be performed if it is determined that the introduction of water and oxygen could contribute to spontaneous ignition of the remaining coal not extracted from the highwall mining operations". BHCC

contends it to be common knowledge in the mining industry that oxygen and water are key catalysts in causing spontaneous combustion in coal, whether the coal be in mine openings or in stockpiles. BHCC also believes that the introduction of additional water and air to a coal seam already on fire is especially problematic.

Section MP-6.3 of Addendum MP-6 commits to maintaining highwall mining mapping and subsidence documentation in a subsidence report that will be available for inspection. BHCC objects to the Mine Plan not committing to freely submitting the highwall mining mapping and subsidence documentation report to all owners of surface estate within the Brook Mine permit area. BHCC also objects to the fact that the Subsidence Monitoring and Assessment reporting of Section MP-6.3 does not include mapping, photographing and describing all evidence of surface or underground coal fires occurring within the Brook Mine permit area whenever such evidence becomes available throughout the life of the mining and post-mining periods.

Objection No. 5 – Section MP.1.3; Exhibit MP.1-1

The mine plan on Page MP-5, identifies the “disturbance boundary includes all lands that will be physically and directly disturbed during mining.” Exhibit MP.1-1 shows the disturbance boundary as a dashed orange symbol that outlines an entire pink hatched polygon, identified as “DISTURBANCE FOR YEAR 2016,” located in Sections 15, 21, 22 and 27 of Township 57 North, Range 84 West.

Within the pink hatched polygon, there are existing assets to Big Horn Coal Company. These assets include a rail spur, water tank, pump house, access roads, fences and land owned by BHCC. Also within the pink hatch polygon is the mainline of the Burlington Northern Railroad and associated lands owned by Burlington Northern.

Based on the definition of Disturbance Boundary as indicated on page MP-5, does Brook Mine indeed have the rights to physically and directly disturb these lands within the pink hatched polygon? From the public record, BHCC has not been able to determine whether Brook Mine has secured surface owner consent from all surface owners, including the railroad, for these activities

Objection No. 6 – Section MP.1.5

The mine plan states on Pages MP-5 and continue onto page MP-6 that “Coal will either be temporarily stored in the pit or directly hauled off site.”

There is no mention in the permit as to where the coal will be hauled off site. Additionally there is no known agreement with the County of Sheridan, indicating approval to haul mineral across county roads.

Objection No. 7 – Section MP.1.9

The mine plan states on Pages MP-7 that “The Brook Mine will operate in conjunction with Taylor Quarry (Permit No. SP-757)... The Mine will work with Taylor Quarry to minimize impacts on Taylor Quarry’s operation.”

The following paragraph states “The Brook Mine will not obstruct Big Horn Coal’s (Permit 231-T8) Shop, Bridge, and Rail Road Siding as they exist in Big Horn Coal’s 2015 Annual Report. An access road equivalent to the existing improved road will be provided if proposed stockpiles or pits should restrict the existing access as shown on Exhibit MP.1-1.

To remain consistent with the statements made in regards to the Taylor Quarry, Big Horn Coal requests that the paragraph referencing Big Horn to be replaced and restated as follows:

“The Brook Mine will operate in conjunction with the Big Horn Mine and that the Brook Mine will work with Big Horn Coal to minimize impacts to Big Horn Coal operations. Specifically, Brook Mine will not obstruct Big Horn Coal’s (Permit 213-T8) Shop, Bridge, and Rail Road Siding as they exist in Big Horn Coal’s 2015 Annual Report. An access road equivalent to the existing improved road will be provided if proposed stockpiles or pits should restrict the existing access as shown on Exhibit MP.1-1.”

Big Horn Coal requests that the text be updated in the previous paragraph to reference the correct permit number for Big Horn Coal Company as (Permit 213-T8).

Objection No. 8 – Section MP.3.1, Section MP.3.1.3 – Roads; Exhibit MP.3-1

As stated in the mine plan on Page MP-11, “Primary roads are any road used for transporting mineral or spoil, or frequently used for access or other purposes for a period in excess of six months, or roads to be retained for postmining use.”

WDQ/LQD Rules and Regulations (R&R) Chapter 4, Section 2(j)(vii):

Primary roads.

(A) Certification. The construction or reconstruction of primary roads shall be certified in a report to the Administrator by a registered professional engineer. The report shall indicate that the primary road has been constructed or reconstructed as designed and in accordance with the approved plan. The report shall be available for review at the mine site within 30 days following the completion of construction of each primary road.

Mine plan Exhibit MP.3-1, titled Transportation Network identifies proposed primary haulroads as a solid black line, for the use of transporting mineral or spoil. Yet, there are no haulroads identified in the SE quarter of Section 15, Sections 21, 22 or 27. If the Brook Mine plans to haul mineral or spoil materials from the proposed Trench Cut (TR-1), there should be indication of a primary haul road leaving TR-1, accompanied by a certification of the road design. Unless there are no plans of transporting mineral or spoil from the TR-1 area.

Objection No. 9 – Section MP.4.2.3 – Stockpiles; Exhibit MP.4-3

The mine plan states on Page MP-16, “Stockpiles will not be constructed on unsuitable backfill.”

Mine plan Exhibit MP.4-3, Stockpile Locations identifies Topsoil Stockpile TS-1B proposed location within an area known as the Placheck Pit. This area was mined by Big Horn Coal from 1956 through 1963. It is Big Horn Coal's understanding that the proposed area beneath TS-1B is indeed unsuitable material and that topsoil should not be placed in the area as proposed on Exhibit MP.4-3. Additionally, Big Horn Coal is not aware of a surface owner consent document between Brook Mining Company and the Burlington Northern Railroad that would allow the crossing of the mainline with loaded haul trucks.

Objection No. 10 – Section MP.6.1; Exhibit MP.7-1

Exhibit MP.7-1 represents the operational Surface Water and Groundwater Monitoring Program. There are only two downstream surface water monitoring sites, identified as Big Horn No. 2 Reservoir and Big Horn No. 14 Reservoir. The text on page MP-41 of the Mine Plan states "However, the Big Horn No. 2 Reservoir and Big Horn No. 14 Reservoir will be disturbed by facilities disturbance."

Big Horn Coal believes there is inadequate downstream monitoring in the proposed plan. Upon disturbing of Big Horn No. 2 Reservoir and Big Horn No. 14 Reservoir, there will be no sites downstream of the Brook Mine to collect adequate surface and groundwater data to prove that there are no off site environmental impacts from the proposed operation.

Objection No. 11 - Addendum MP-2, Exhibit MP-2

The proposed Sediment Pond SP-8 is located within the current postmine approved Reservoir 14 constructed by BHCC. The bottom elevation of Reservoir 14 is currently at 3575 with a peak elevation at 3589. Sediment Pond SP-8 bottom elevation is proposed at 3585 with a high water elevation proposed at 3590. It is noted below the area capacity table on Exhibit 13, "1. Pond is entirely incised. No Spillway hydraulics are provided."

These elevations lead BHCC to believe the plan for construction of SP-8 will require Reservoir 14 to be completely backfilled prior to construction of SP-8. BHCC requests that the reconstruction and the water quality within Reservoir 14 be restored to pre-mining conditions before final bond release is allowed.

Objection No. 12 – Exhibit MP.4-1; Exhibit MP.4-2; Exhibit MP.4-5; Exhibit RP.5-1

The proposed mine plan indicates that topsoil and overburden removal will occur upon the BHCC Property and within the TR-1 area in years 1 and 2 of operation. Exhibit MP.4-1 shows coal removal to occur over the same first two years of operation. Exhibit MP.4-5 shows the overburden backfill sequence within TR-1 will occur in year 2. Exhibit RP.5-1 shows the topsoil replacement sequence within the BHCC Property occurring in years 12-16.

BHCC objects to this timeline of topsoil replacement upon its property. The BHCC property is the first to be disturbed and the last to be reclaimed. BHCC asks the question as to why every other proposed disturbance area is backfilled and topsoiled within a 2 to 3 year time frame except around the BHCC facilities area. The topsoil replacement timeframe is unacceptable and not contemporaneous in accordance with the Surface Mining Control and Reclamation Act, (SMCRA) and it is requested that the final

reclamation around the BHCC Property be within the 2 to 3 year time frame, similar to all other areas around the mine.

Objection No. 13 – Section MP.1.2.1; Figure MP.1-2.

Section MP.1.2.1 discusses the work that will be done to “prepare for highwall mining” and describes how the “trenches” will be constructed to “create working areas for highwall mining equipment”. This section of the mine plan states that “The highwalls will have a 65-degree bench slope to provide a stable trench environment. Where the trench intersects the burnt Monarch coal seam, a 35-foot wide safety bench will be added. Where the Carney and Masters coal seams come close to convergence, a vertical wall will be used to maintain the desired pit width.” Earlier, under Objection No. 2, BHCC discussed the presence of saturated backfill where trench TR-1 is planned to be excavated. Section MP.1.2.1 does not address in any fashion the fact that trench TR-1 will be constructed in an area containing a significant amount of saturated backfill material. In our opinion, utilizing a 65-degree bench slope in this material will be impossible as the saturated backfill will not safely stand at this angle. Furthermore, no geotechnical information (sampling, testing or analysis) supporting slope stability assumptions for the surface mining or highwall mining operations have been provided in the mine plan. BHCC finds the information regarding highwall bench slope angles presented in MP.1.2.1 to be inadequate given the variability of non-coal material that will be encountered during excavation of trenches in support of the highwall mining operation.

Objection No. 13 – Section MP.1.2.1; Figure MP.1-2.

Section MP.1.2.1 discusses the work that will be done to “prepare for highwall mining” and describes how the “trenches” will be constructed to “create working areas for highwall mining equipment”. This section of the mine plan states that “The highwalls will have a 65-degree bench slope to provide a stable trench environment. Where the trench intersects the burnt Monarch coal seam, a 35-foot wide safety bench will be added. Where the Carney and Masters coal seams come close to convergence, a vertical wall will be used to maintain the desired pit width.” Earlier, under Objection No. 2, BHCC discussed the presence of saturated backfill where trench TR-1 is planned to be excavated. Section MP.1.2.1 does not address in any fashion the fact that trench TR-1 will be constructed in an area containing a significant amount of saturated backfill material. In our opinion, utilizing a 65-degree bench slope in this material will be impossible as the saturated backfill will not safely stand at this angle. Furthermore, no geotechnical information (sampling, testing or analysis) supporting slope stability assumptions for the surface mining or highwall mining operations have been provided in the mine plan. BHCC finds the information regarding highwall bench slope angles presented in MP.1.2.1 to be inadequate given the variability of non-coal material that will be encountered during excavation of trenches in support of the highwall mining operation.

Objection No. 14 – Section MP.4.4.1

It is a well-known fact within the mining industry that the term “Reserves” connotes that the mineral being extracted can be done so economically. BHCC opines that the mining approach presented in the mine plan cannot be done economically. Based on our internal

knowledge; the operating cost for a contractor to perform highwall mining is in the \$8/Ton to \$12/Ton range, which is very close to the domestic spot price for this type of coal. By the time the other costs for the surface mining to develop the highwall mining, transportation, G&A, etc. are taken into consideration, this operation appears to be completely uneconomical.

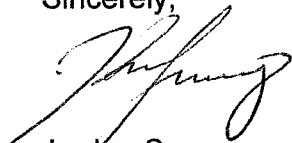
The market for this coal is unclear. The two closest coal mines, Decker and Spring Creek, serve the domestic and international market. Port capacity to the international market is constrained and it is unlikely that Brook Mine will secure access. Domestic demand has been in decline and is significantly oversupplied. Without a definitive market, the Brook Mine is at risk of commencing operations, producing product it cannot sell economically, and reclamation obligations that it cannot fund.

Objection No. 15 – Section MP.15

Objection No. 4 above introduces the fact that the underground mine fires in this area are still burning and have expanded. Section MP.15 does not, in any way, address that the burned areas have expanded. A surface mine excavation that comes in contact with a historic mine fire could be catastrophic in many ways, including: impacting the safety of mine workers, damage to equipment, wildfire initiation, etc. BHCC believes this mine plan has not adequately addressed surface mining activities that will occur near underground mines and insists that the Brook Mine operators must perform the necessary testing and analysis to prove that the proposed mine plan will not be impacted by historic mine fires. Specifically, attachment 1 provided with Objection No. 3 above shows that trench TR-2 is planned very near an area that was burning and is likely still burning. Given that the burned area has likely expanded, this area should not be disturbed at all.

In conclusion, Big Horn Coal Company feels strongly that the Brook Mine permit application should not be approved or deemed technically complete. The mine and reclamation plan lack a significant amount of detail that is required for a technical completeness determination, as stated in the above mentioned objections.

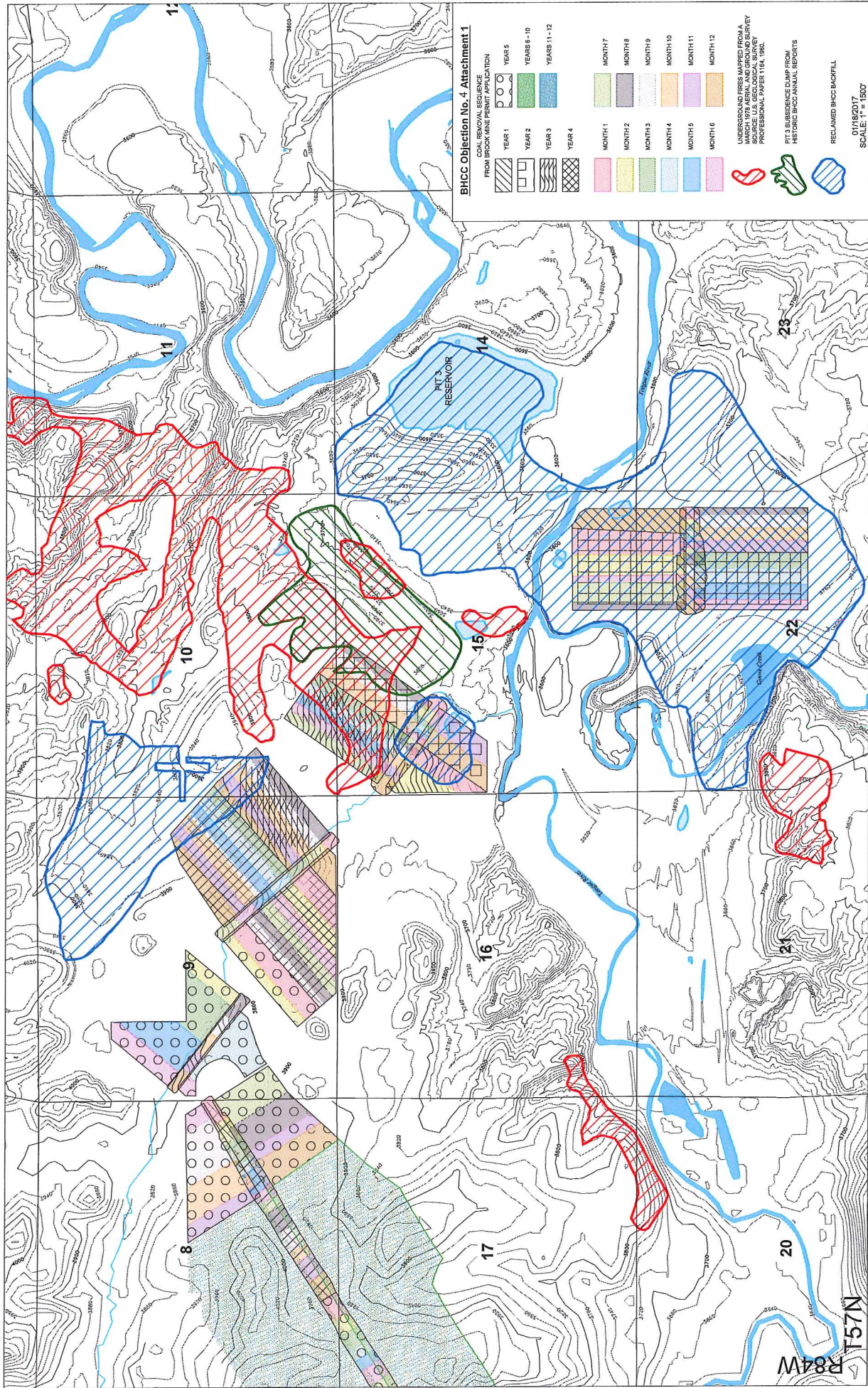
Sincerely,

A handwritten signature in black ink, appearing to read 'Jordan Sweeney', written in a cursive style.

Jordan Sweeney

General Manager
Big Horn Coal Company

Attachment: BHCC Objection No.4 Attachment 1



From: Shannon Anderson
To: andrew.kuhlmann@wyo.gov; james.larock@wyo.gov; jgilbertz@yonkeetoner.com; tlsansonetti@hollandhart.com; insutphin@hollandhart.com; jspope@hollandhart.com; [Clayton Gregersen](#); [Lynne Boomgaarden](#)
Cc: [Jim Ruby](#); todd.parfitt@wyo.gov
Subject: EQC Docket No. 17-4802, Resource Council Expert Disclosures
Date: Monday, April 03, 2017 12:50:35 PM
Attachments: [2017 4-3 expert witness disclosures.pdf](#)
[CVs.pdf](#)
[WiremanReport.pdf](#)

Counsel: Please see the attached.

And I apologize for having to use Dropbox – I tried unsuccessfully for quite some time to divide Dr. Marino's report into smaller portions but some of the individual pages are greater than the 25 MB limit for EQC electronic filing. Please let me know if you have any difficulty retrieving the report from Dropbox. The report was filed as part of our objections and was an exhibit to our petition, but the original version may be better, so I wanted to be sure to provide that to you.

And while I have you, thanks to Andrew for the CD with the permit application.

Thank you,
Shannon

Shannon Anderson
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**BEFORE THE ENVIRONMENTAL QUALITY COUNCIL
STATE OF WYOMING**

IN RE BROOK MINE APPLICATION)
) **DOCKET 17-4802**
TFN 6 2-025)

EXPERT WITNESS DISCLOSURES

Pursuant to the March 13, 2017 scheduling order, the Powder River Basin Resource Council (“Resource Council”) hereby provides the following disclosures regarding expert witnesses who will appear in the above-captioned proceedings. These disclosures are made in accordance with Wyoming Rule of Civil Procedure 26(a)(2). All final exhibits and witnesses will be named no later than noon on May 17, 2017.

1. Gennaro G. Marino Ph.D., P.E., D.GE

Dr. Marino will present testimony on the subsidence risk presented by the mine and reclamation plan and will identify deficiencies in the permit application related to subsidence evaluation and prevention. A copy of Dr. Marino's report was originally attached to the Resource Council's objections and filed with DEQ at that time. Given the size of some of the exhibits to the report, it is unable to be attached to these disclosures but a complete version of his report is available for downloading via Dropbox at:

<https://www.dropbox.com/s/80ctznf4mcau8uc/RAMBM%20Report%20012317.pdf?dl=0>

Dr. Marino will present the opinions discussed in the report and other opinions related to subsidence he has drawn from reviewing the permit application.

Dr. Marino is the President of Marino Engineering Associates, Inc. with an office at 1370 McCausland Ave, St. Louis, MO 63117. Dr. Marino is a registered Professional Engineer in Wyoming. Dr. Marino's bio and list of professional qualifications is available at <http://www.meacorporation.com/leadership.php>. This information states, in part, that Dr. Marino has given expert testimony on numerous occasions within his range of engineering experience. Also during the course of his career he has authored over 90 articles and research publications on advanced engineering projects and authored a textbook: Earthquake Damage: Inspection, Evaluation and Repair. A copy of Dr. Marino's *curriculum vitae* is attached to these disclosures.

Dr. Marino will be compensated by the Resource Council for his time and travel expenses.

2. Mickel Wireman M.S., P.G.

Mr. Wireman will provide opinions related to the hydrology aspects of the permit application, including the sufficiency of the water monitoring plan, impacts to the hydrologic balance within and outside the permit area, and impacts to alluvium and alluvial valley floors. A copy of the report he has prepared is provided with these disclosures.

Mr. Wireman is the President of Granite Ridge Groundwater, LLC in Boulder, Colorado, and he is a former hydrogeologist and National Groundwater Expert with the Environmental Protection Agency's Region VIII Office in Denver. A copy of his *curriculum vitae* is attached.

Mr. Wireman has let his Wyoming geologist registration lapse, but he has associated with Wyoming professional geologist Sue Ann Spencer for the purposes of his testimony. Ms.

Spencer has provided a certification that she has reviewed Mr. Wireman's findings and that she finds them compliant with the standards of a professional geologist in Wyoming.

Mr. Wireman will be compensated by the Resource Council for his time and travel expenses.

3. Stu Levit, M.S.

Mr. Levit will present testimony on the inadequacies in the reclamation bond amount. Mr. Levit does not have an expert report; however, his opinions related to the reclamation bond amount were incorporated into the Resource Council's objections.

Mr. Levit is an employee of Center for Science in Public Participation with an office at 224 North Church Avenue, Bozeman, MT 59715. Mr. Levit formerly worked for the Montana Department of State Lands, Abandoned Mine Reclamation Bureau as a Land Reclamation Specialist, where he designed mine reclamation project plans. Mr. Levit's professional qualifications are available for review at <http://www.csp2.org/expertise>.

Dated this 3rd day of April, 2017.

/s/ Shannon Anderson
Shannon Anderson
Powder River Basin Resource Council
934 N. Main St., Sheridan, WY 82801
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sanderson@powderriverbasin.org

CERTIFICATE OF SERVICE

I hereby certify that on April 3, 2017, I served a copy of the foregoing **EXPERT WITNESS DISCLOSURES** on the following parties by electronic mail, and through the EQC's electronic filing system, which will send a notice of electronic filing to all counsel and parties of record.

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/s/Shannon Anderson
Shannon Anderson

Professional Curriculum Vitae

Gennaro Gerald Marino, Ph.D., P.E., D.GE

September, 2016

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Education

- Ph.D. University of Illinois at Urbana-Champaign, 1985
Civil (Geotechnical) Engineering
- M.S. Rutgers University, 1975
Civil (Soil Mechanics and Foundations) Engineering
- B.S. University of Dayton, 1972
Civil Engineering

Honors and Professional Credentials

Civil and Environmental Engineering Alumni Association Distinguished Alumnus Award from the University of Illinois, 2015

American Bar Association (ABA), Expert Witness Committee, Chairman of Civil Engineering Subcommittee, 2014 to present

Geo-Diplomate Award from ASCE, 2013

Registered Professional Engineer in Alabama, Arkansas, Colorado, Florida, Illinois, Indiana, Iowa, Kentucky, Louisiana, Maine, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, North Dakota, Ohio, Oklahoma, Pennsylvania, Tennessee, Utah, Virginia, West Virginia, Wyoming, and National Accreditation.

Central Illinois Civil Engineer of the Year, American Society of Civil Engineers, 2011

Semi-Finalist for the Regional Outstanding Civil Engineering Achievement Award, American Society of Civil Engineers, 2010

Elected Member of the Geotechnical Advisory Committee for the Illinois Mine Subsidence Insurance Fund, 2008-2011

Chairman and Founder of Geotechnical Engineering Division, American Society of Surface Mining and Reclamation to 2003

Selected onto the Board of Consultants by the National Academy of Science for the study of Slurry Impoundment Failures, 2001

Selected by the U.S. Bureau of Mines to be an In-House Geotechnical Consultant at the

Minneapolis Research Center

Selected to a National Committee on Training of adjustors, contractors and engineers on reconstruction technologies for earthquake damage

Member on American Standard for Testing of Materials Committee on Soil and Rock (D18)

Registered Professional Engineer with the National Council of Examiners for Engineering and Surveying

Engineering Open House Award for Development of a Foundation Retrofit Methodology

Member of Society of Mining Engineers, American Society of Civil Engineers, American Society of Testing Materials, National Association of County Engineers

Professional Experience

7/97-Present	President and Senior Geotechnical/Civil Engineer for Marino Engineering Associates, Inc., Urbana, Illinois
1985-Present	Expert Witness on numerous Geotechnical/ Civil Engineering subjects
1/80 to 7/97	Geotechnical and Civil Engineering Consultant (research and practice)
1/88 to 5/93	Consultant to the Civil Engineering Department at the University of Illinois
3/86 to 3/88	In-House Geotechnical Consultant on U.S. Bureau of Mines research projects
6/85 to 5/87	Research Engineer and Principal Investigator in Civil Engineering at the University of Illinois
10/76 to 9/78	Geotechnical Research Engineer, Ensco, Inc., Port Royal Rd, Springfield, VA 33100
10/75 to 9/76	Project Engineer, ECB Engineers, Inc., Broad St. Falls Church, VA 22000
6/74 to 10/75	Soils Engineer, Haller and ShimeI Consulting Engineers, Leland Ave., Plainfield, NJ 07000
1/73 to 8/73	Soils Engineer, Joseph S. Ward and Assoc., Roseland Ave., Caldwell, NJ 07006

Geotechnical Engineering Experience

- Foundation feasibility studies and designs for various types of structures
- Foundation evaluation and design over shallow abandoned coal workings
- Field feasibility study and inspection of caissons for a high-rise building
- Analysis of ground conditions and construction difficulties for deep foundation projects
- Design and field supervision of grouting in soil and rock
- Evaluation of the cyclic or dynamic behavior of soils
- Slope stability and stabilization
- Pavement design
- Earth retaining system design
- Canal and berm seepage analysis
- Field mapping and analysis of ground conditions for rock excavations
- Field instrumentation work for underground openings
- Investigation of tunneling conditions and ground support in rock and soft ground
- Evaluation of the long-term stability of room and pillar mines
- Evaluation of mine permits for surface, room and pillar, and longwall mining
- Mine subsidence potential prediction
- Subsidence engineering investigations
- Evaluation of pipeline response to subsidence
- On-site supervision and inspection
- Laboratory testing

Forensic Engineering

- Analysis of groundwater seepage
- Investigation of damage to earth retaining systems
- Investigation of earth and concrete dam failures
- Rock hardness evaluation
- Analysis of the ground effects on failed plastic and large diameter steel pipeline systems
- Investigation and evaluation of earthquake and ground vibration damage
- Investigation and evaluation of damage to structures from ground movement (e.g. settlement, frost, and heaving) and other causes
- Investigation of slope failures
- Evaluation of pavement failures
- Evaluation of stability of underground openings and mines
- Evaluation of subsidence damage from underground mines
- Evaluation of subsidence damage from salt mining
- Evaluation of mine backfilling or grouting conditions

Construction & Structural Analysis

- Pre-bid analysis of ground conditions for installation of a slurry wall and a pipeline
- Evaluation of pipeline response to subsidence
- Foundation evaluation and design over shallow abandoned coal workings
- Estimation of subsidence damage cost from longwall mining
- Design of foundations to mitigate structural damage
- Repair methodology for earthquake damage
- Repair methodology for ground movement damage

Research Experience

2013 Principal investigator of development of a sinkhole warning system under a building using TDR technology.

1993 Analytical modeling of the response of transmission pipelines to ground movement for the U.S. Bureau of Mines.

9/79 to 9/93 Involved as Technical Director in funded research on mine subsidence related projects. Most of this work is in cooperation with The University of Illinois. The scope of the projects range from analysis of: the short- and long-term stability of the mine structures and overburdens; the nature and magnitude of subsidence movements in the overburden and on the surface; the behavior of surface and underground structures to subsidence; subsidence damage prediction; design and implementation of abatement procedures against hazards from subsidence as well as development of advanced reconstruction procedures for homes damaged by subsidence.

10/76 to 9/78 As a Research Engineer involved in the evaluation of geophysical data for assessment of geologic and geotechnical site conditions. The geophysical data was collected from field test sites by using borehole radar and acoustic sensors.

Technical Training Activities

- Researched and developed a detailed course for insurance adjusters on inspection and evaluation of earthquake damage claims.
- Instructor of workshop for architects: Approaching Earthquake Design and Damage Repair of Residential Structures, Jackson, Tennessee, 1992
- Developed "Research News" for the Illinois Mine Subsidence Fund. This is a periodic newsletter which was to disseminate research results in the area of mine subsidence.
- Developed general specifications for a number of advanced schemes for repairing mine subsidence damage in residential structures.
- Researched and developed a detailed course on repair of earthquake damage for insurance adjusters.
- Developed training course on logging Rock Core of Sedimentary Rocks.
- Developed workshop on Mine Subsidence, Damage and Remediation for Walmart, 2012

Published Books

EARTHQUAKE DAMAGE: Inspection, Evaluation and Repair, 1997, L & J Publishing, Tucson, Arizona, 400 pp.

Professional Articles, Papers and Reports

Marino, G. G., 1977, Acoustic- Geotechnical Correlations, Appendix C of FHWA Phase I Report titled, "Acoustic Sensing System for Mapping the Soil-Rock Interface and for Detecting and Identifying Objects Under a Water Table", ENSCO, Inc. publication.

Marino, G. G., 1977, Bulletin of Geological, Geotechnical and Geophysical Data for the Proposed Forest Glen Station, FHWA Report, ENSCO publication, 34 pp.

Rubin, L. A., Fowler, J., and Marino, G. G., 1978, Application of Prototype Borehole Ground-Probing Radar at the Forest Glen Research Site, Conf. on Site Exploration in Rock for Underground Design and Construction, Washington, D. C., 33 pp.

Fowler, J., Rubin, L. A., Marino, G. G., 1978, A Study of Sensing Systems for Various Phases of Chemical Grouting: Task A Report, Prepared for Hayward Baker Company, ENSCO, Inc., 48 pp.

Rubin, L. A., and Marino, G. G., 1978, Recorded Signatures of Actual 'Exposed' Discontinuities, NSF Workshop on Future Challenges of Site Characterization, Illinois, 21 pp.

Rubin, L. A., Fowler, J., and Marino, G. G., 1978, Research in Subsurface Site Investigation by Ground-Probing Sensors -- Phase II -- Multiple Borehole Radar, NSF (Interim and Final) Report, 110 pp. plus appendices.

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Professional Presentations

- 1981 *Building Response and Mitigation Measures for Building Damages in Illinois* at a workshop for surface subsidence due to underground mining in West Virginia.
- 1984 *Response of Homes to Sag-Subsidence over Illinois Abandoned Coal Mines* at the Annual AIME Meeting in Los Angeles, California.
- 1984 *Mine Subsidence and Damage State Briefing* at the Illinois State Capitol Building in Springfield, Illinois.
- 1985 *Geotechnical Aspects of Subsidence over Room and Pillar Mines in Illinois* at the 4th Conference on Ground Control in Mining in Morgantown, West Virginia.
- 1986 *Interactions between Building and Subsidence Movements* at the 2nd Workshop on Mine Subsidence at the West Virginia University in Morgantown, West Virginia.
- 1986 *Long-term Stability of Overburden above Room and Pillar Mines* at the AIME Annual Meeting in St. Louis, Missouri.
- 1988 *Analysis of the Initial Collapse of the Overburden over Longwall panels Using Subsidence Data* at the 7th International Conference on Ground Control in Mining at the West Virginia University in Morgantown, West Virginia.
- 1988 *Developments in Advanced Reconstruction Methodologies for Subsidence-Damaged Homes* at the

ASCE Spring Convention in Nashville, Tennessee.

- 1989 *Behavior of Abandoned Room and Pillar Mines in Illinois* at the SME Annual Spring Convention in Las Vegas, Nevada.
- 1990 *Engineering Ethics in Education* at the ASCE 1990 National Forum on Education and Continuing Development for the Civil Engineer in Las Vegas, Nevada.
- 1990 *Subsidence Damage and Remedies* at the AEG Subsidence Symposium in Pittsburgh, Pennsylvania.
- 1990 *Progressive Failure of the V-Day Mine and a Comparison with Other Similar Failures in Illinois* at the 9th International Conference on Ground Control in Mining, Morgantown, West Virginia.
- 1991 Presented a one day workshop for Allstate for insurance adjusters on the inspection and evaluation of earthquake damage claims, Northern California.
- 1991 *Foundation Design in a Subsidence Prone Area in Indiana* at the 34th Annual Meeting of the Association of Engineering Geologists, "Environmental and Geotechnical Challenges for the Decade", Chicago, Illinois.
- 1991 *A Retrofit Technique for Residential Foundations Damaged by Mine Subsidence* at the 34th Annual Meeting of the Association of Engineering Geologists, "Environmental and Geotechnical Challenges for the Decade", Chicago, Illinois.
- 1991 *Developing Technical Training Programs* at the 1991 Frontiers in Education Conference at Purdue University, West Lafayette, Indiana.
- 1992 *Innovative Repair of Subsidence Damage* at the Third Workshop on Surface Subsidence Due to Underground Mining, Morgantown, West Virginia.
- 1992 Bending of Retrofitted Test Foundation Walls at the Conference on Composite Construction II, Engineering Foundation Conferences, Potosi, Missouri.
- 1992 *Approaching Earthquake Design and Repair of Residential Structures* at the National Earthquake Training Conference and Seismic Product Exhibit by the Masonry Institute of Tennessee, Jackson, Tennessee.
- 1993 *Response of House Foundations During the Loma Preita Earthquake* at the Third International Conference on Case Histories in Geotechnical Engineering, St. Louis, Missouri.
- 1994 *Remote Sensing of Abandoned Mine Works Using Downhole Radio Imaging Techniques* at the American Society for Surface Mining and Reclamation International Conference, Pittsburgh, Pennsylvania.
- 1995 *Deep Mine Backfilling at the Wabash Valley Correctional Institution in Carlisle, Indiana* at the 12th Annual Meeting of the American Society for Surface Mining and Reclamation, Gillette, Wyoming.
- 1996 *Releveling and Behavior of Strap Retrofitted Damaged Test Foundations Exposed to Mine*

- Subsidence* at the 13th Annual Meeting of the American Society for Surface Mining and Reclamation, Knoxville, Tennessee.
- 1997 *The Siting of a Prison Complex above an Abandoned Underground Coal Mine* at the 14th Annual National Meeting of the American Society for Surface Mining and Reclamation, Austin, Texas.
- 1998 *Subsidence Resistant Repair of a Block Basement* at the 15th Annual National Meeting of the American Society for Surface Mining and Reclamation, St. Louis, Missouri.
- 1998 *The Effect of Softening on the Bearing Capacity of Mine Floors* at the 15th Annual National Meeting of the American Society for Surface Mining and Reclamation, St. Louis, Missouri.
- 1999 *Absolute Horizontal and Vertical Movements Measured from a Sag Subsidence* at the 3rd National Conference of the Geo-Institute of ASCE, Urbana-Champaign, Illinois.
- 1999 *Salt Mine Subsidence and Associated Damage: A Case History* at the 16th Annual National Meeting of the American Society for Surface Mining and Reclamation, Scottsdale, Arizona.
- 1999 *Long Term Subsidence Movements and Behavior of Subsidence- Damaged Structures* at the 16th Annual National Meeting of the American Society for Surface Mining and Reclamation, Scottsdale, Arizona.
- 2000 *Protection Measures Against Mine Subsidence Taken at a Building Site* at the 17th Annual National Meeting of the American Society for Surface Mining and Reclamation, Tampa, Florida.
- 2001 *Long-Term Stability of an Indiana Coal Mine* at the 18th Annual National Meeting of the American Society for Surface Mining and Reclamation, Albuquerque, New Mexico.
- 2001 *Road Subgrade Properties of Loessal Soil in the Memphis Area* at the 81st Annual Meeting of the Transportation Research Board, Washington, D.C.
- 2002 *A Subsidence Engineering Investigation at the Wildlife Prairie Park* at the 19th Annual National Meeting of the American Society for Surface Mining and Reclamation, Lexington, Kentucky.
- 2003 *Borehole Radar Determines Solid Coal and Mined-out Areas for a Construction Site* at the 88th Annual Meeting of the Society for Mining, Metallurgy, and Exploration, Denver, Colorado.
- 2006 *Compaction and Engineering Properties of a Weathered Rock Roadway Fill* at the 4th International ASCE Engineering & Construction Conference, Los Angeles, California.
- 2007 *The Interrelationship of Design and Constructability of Soft Clay Slopes: A Case History* at the 18th Engineering Mechanics Division Conference of the ASCE, Blacksburg, Virginia.
- 2010 *Mine Subsidence Damage during Construction of Medical Center and Remedial Measures Taken* at the 10th Annual Technical Forum on Geohazards Impacting Transportation in the Appalachia Region, Columbus, Ohio.
- 2010 *The Influence of Softening on the Mine Floor Bearing Capacity: A Case History* 10th Annual

- Technical Forum on Geohazards Impacting Transportation in the Appalachia Region, Columbus, Ohio.
- 2011 *Failure Investigation of Olympic-Sized Swimming Pool* at the International Conference on Sustainable Design and Construction, Kansas City, Missouri.
 - 2011 *Mine Subsidence Engineering: An Overview* at the 11th Annual Technical Forum on Geohazards Impacting Transportation in the Appalachia Region, Chattanooga, Tennessee.
 - 2011 *What Architects Need To Know About Mine Subsidence* at the AIA Southern Illinois Product Showcase and Meeting, Southern Illinois University, Carbondale, Illinois.
 - 2012 *Coal Mine Subsidence: Myths, Facts & Solutions* at the Boonville-Warrick Public Library (sponsored by the Museum of the Coal Industry in Lynnville, Indiana), Boonville, Indiana.
 - 2012 Presented a one-day workshop on mine subsidence and associated damage and remediation for Walmart Stores, Inc., Bentonville, Arkansas.
 - 2012 *Grouting of Mine Voids at the Proposed Site of Elementary School* for the National Association of Abandoned Mine Land Programs, Des Moines, Iowa.
 - 2012 *What Structural Engineers Should Know About Building above Mines* for the Structural Engineers Association of Ohio, Cincinnati, Ohio.
 - 2012 *What Structural Engineers Should Know About Building Above Mines* for the Structural Engineers Association of Ohio, Columbus, Ohio.
 - 2012 *Analysis of Subsidence and Resulting Damage Over an Area for 3 Decades* at the 6th Congress on Forensic Engineering Conference, San Francisco, California.
 - 2013 *Mine Stabilization at an Elementary School Site in Gillespie, Illinois* at the February American Society of Civil Engineers Luncheon (ASCE), Champaign, Illinois.
 - 2013 *Mine Subsidence Engineering - An Overview* at the 11th Annual Summer Technical Conference, Fairmont State University Campus, Fairmont, West Virginia.
 - 2013 *Mine Subsidence Engineering - An Overview* at the June American Society of Civil Engineers Luncheon, Peoria, Illinois.
 - 2013 *Stability Analyses and Remediation of Two Mined-Out Coal Seams Adjacent to a Building* at the 32nd International Conference on Ground Control in Mining, Morgantown, West Virginia.
 - 2013 *Mine Stability and Subsidence of a Retirement Facility* at the 13th Annual Joint Forum: Geohazards Impacting Transportation in Appalachia & Interstate Technical Group on Abandoned Underground Mines, Harrisonburg, Virginia.
 - 2013 *Mine Subsidence Engineering: Cause, Response and Mitigation* at IDOT Central Office Building luncheon, Springfield, Illinois.
 - 2014 *Mine Subsidence Engineering: an Overview* at Indiana Department of Transportation (INDOT), Indianapolis, Indiana.
 - 2014 *Group Behavior of a Deep Foundation in Swelling Rock* at the 14th Annual Geohazards Technical

Forum: Geohazards Impacting Transportation in Appalachia, Lexington, Kentucky.

- 2014 *Progressive Mine Instability and Subsidence Response: A Case Study* at National Association of Abandoned Mine Land Program (NAAML) 2014 Conference, Columbus, Ohio.
- 2014 *Mine Subsidence Engineering: an Overview* at Indiana Department of Natural Resources, Jasonville, Indiana.
- 2014 *Mine Subsidence Engineering: an Overview* at the Kentucky Engineering Center, Prestonsburg, Kentucky.
- 2014 *What Structural Engineers Should Know About Mine Subsidence* at the ISPE Structural Engineering Boot Camp, Springfield, Illinois.
- 2014 *Mine Subsidence Engineering: an Overview* at the Kentucky Engineering Center, Paducah, Kentucky.
- 2014 *Dealing with Construction over Sinkhole-Prone Karst Terrain*, at the November American Society of Civil Engineers (ASCE) Luncheon, South Bend, Indiana.
- 2015 *Mine Subsidence Engineering: an Overview* at the Illinois Mine Subsidence Insurance Fund, Caseyville, Illinois.
- 2015 *Dealing With Construction over a Subsidence-Prone Karst Terrain*, at the February American Society of Civil Engineers (ASCE) Luncheon, Mechanicsburg, Pennsylvania.
- 2015 *Mine Subsidence Engineering: an Overview*, at the 2015 Illinois Society of Professional Engineers (ISPE) Convention, Lisle, Illinois.
- 2015 *Response of Petro Pipelines to Longwall Subsidence*, at the 2015 Annual Meeting of the Illinois Mining Institute (IMI), Marion, Illinois.
- 2015 *What Structural Engineers Should Know About Building Above Underground Mines*, at the Structural Engineers Association of Illinois 2015 Central Chapter Trade Show, Springfield, Illinois
- 2015 *Response of Petro Pipelines to Longwall Subsidence*, at the 15th Annual Technical Forum of Interstate Technical Group on Abandoned Underground Mines, Huntington, West Virginia.
- 2015 *Mine Subsidence Engineering: an Overview*, at Kinder Morgan, Houston, Texas.
- 2015 *Mine Subsidence Engineering: an Overview*, at the Missouri Department of Natural Resources, Jefferson City, Missouri.
- 2015 *Mine Subsidence Engineering: an Overview*, at the Society of Mining, Metallurgy, and Exploration (SME) September Meeting, Saint Louis, Missouri.
- 2015 *Dealing With Construction over a Subsidence-Prone Karst Terrain*, at the 79th Annual Illinois Association of Highway Engineers Conference, Fairview Heights, Illinois.
- 2015 *What Structural Engineers Should Know About Building Above Underground Mines* at the Structural Engineering Institute of St. Louis' SEI Day, Saint Louis, Missouri

- 2015 *Mine Subsidence Engineering: an Overview*, at the Illinois Society of Professional Engineers – Central Illinois Chapter’s December Meeting, Decatur, Illinois
- 2016 *Dealing With Construction over a Subsidence-Prone Karst Terrain*, at the Structural Engineer’s Association of Iowa January Meeting, Des Moines, Iowa
- 2016 *Mine Subsidence Engineering: Response, Damage, and Repair* at the Illinois Mine Subsidence Insurance Fund – Collinsville, Illinois
- 2016 *Dealing with Construction over a Subsidence-Prone Karst Terrain*, at the 16th Annual Technical Forum on Geohazards Impacting Transportation in Appalachia – Knoxville, Tennessee
- 2016 *Mine Subsidence Engineering: An Overview*, at the 2016 Pennsylvania Professional Engineers Conference – King of Prussia, PA
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EDUCATION

Bachelor of Science, Geology, 1976, Western Michigan University, Kalamazoo, MI

Master of Science, Hydrogeology, 1987, Western Michigan University, Kalamazoo, MI

Post MS: Advanced Ground-Water Hydrology, Colorado School of Mines, Geochemistry of Ground-Water Systems (USGS advanced short course), numerous ground-water related classes and seminars on various aspects of hydrogeology, ground-water protection, remediation and management

PROFESSIONAL EMPLOYMENT RECORD

2014 – present

President – Granite Ridge Groundwater, LLC

Provides scientific / technical consultation to a variety of clients

Active member of Sub-Committee on Groundwater (DOI Advisory Committee on Water Information)

Director – GWPC Ground Water Research and Education Foundation

Member – Western Michigan University Geosciences Department Advisory Council

Adjunct Instructor – Metropolitan State University, Global Water Concerns

Past consultant to The World Bank - Worked on hydrologic restoration project in lower Yangzi River basin and mine closure in Romania

Past President – US Chapter of International Association of Hydrogeologists

Past Director – NGWA Science and Engineering Division

1987 to 2014

National Ground-Water Expert, US EPA Region VIII. Provided scientific and technical support to EPA programs (including Superfund, RCRA, Enforcement, NEPA and Water programs), other Federal agencies, International programs and ground-water protection / management programs in several western states. Extensive experience in hydrogeologic characterization and remediation of hardrock mine sites, hydrogeologic aspects of uranium mining and oil and gas development, hydrology of mountain watersheds, DNAPL sites, fractured rock settings, nutrients in ground water, ground-water monitoring, ground-water sensitivity / vulnerability assessments, source-water / wellhead protection. Position included working closely with policy makers, decision makers and attorneys.

Teaching – Currently teaching Basic Principles of Groundwater and Contaminant Transport for Ground- Water Protection Council. Has served as adjunct professor at Metropolitan State College in Denver where he taught a class in Contaminant hydrology. Founder and co-instructor of EPA class entitled Basic Principles of Hydrogeology and Contaminant Hydrology. This class was offered to State DEQ and Environmental protection staff and was delivered 12 times in eight states. He also teaches classes for the National Ground -Water Association and Geological Society of America. Has developed and taught workshops in Eastern Europe and Middle East.

Expert testimony - Has provided expert testimony numerous times in federal court, State court, State Water Quality Control Commission and State Water court and before the Nuclear Regulatory Commission. Cases involved water rights issues, violations of State and Federal environmental laws / permits and re-licensing of in-situ uranium mining operations.

International Experience – Has worked extensively in Eastern Europe (Estonia, Ukraine, Romania, and the Republic of Georgia), Russia, the Middle East (Oman, Bahrain and Iraq), and China as a Technical Expert with EPA Office of External Affairs, EPA Office of Research and Development, US AID and The World Bank.

1981-1986

Hydrogeologist, Leonard Rice Consulting Water Engineers, Inc. Responsible for ground-water geology studies including interpretation and evaluation of hydrogeologic systems, aquifer testing, water supply development, water well drilling, ground-water contamination and monitoring and western water rights. Duties required collection and analyses of data, report preparation and expert testimony.

AFFILIATIONS

Colorado Ground-Water Association

Geological Society of America
National Ground Water Association
International Association of Hydrogeologists – Past Chair US National Chapter
Member of the Subcommittee on Ground Water – Advisory Committee on Water Information
Member, Board of Directors, NGWA Science and Engineering Division
Member – Board of Directors – Groundwater Research and Education Foundation (Ground Water Protection Council)

PUBLICATIONS

2015 – Wireman, Mike, Development and Implementation of a National Groundwater Monitoring Network, Guest editorial - Groundwater Monitoring and Remediation, NGWA

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1982, Wireman, Mike, Hydrogeology of the Western Upper Peninsula of Michigan, Western Michigan university Geology Department, EPA Underground Injection Control Program

**SUE ANN SPENCER, P.G.
9 STATE HIGHWAY 10
JELM, WY 82063**

March 31, 2017

Shannon Anderson
Powder River Basin Resources Council
Sheridan, WY

RE: Wireman Comments on the Revised RAMACO Brook Mine Permit Application

Dear Ms. Anderson:

As a current Wyoming registered Professional Geologist (P.G. 238), I am familiar with Mr. Mike Wireman's credentials and know him to be of good moral character, based on his work. I have also reviewed Mr. Wireman's comments on the Revised RAMACO Brook Mine Permit Application and find that his work meets the standards of a professional geologist registered in the State of Wyoming.

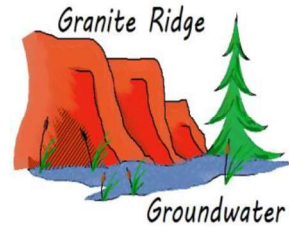
Thank you for this opportunity to be of service to your organization.

Respectfully Submitted,



Sue Ann Spencer, P.G.





March 13, 2017

MEMORANDUM REPORT

TO: Shannon Anderson
Powder River Basin Resources Council
Sheridan, WY

FROM: Mike Wireman
Granite Ridge Groundwater
Boulder, CO

SUBJECT: Review of Revised RAMACO Brook Mine permit application

Shannon,

I have completed a review of the Brook Mining Co., LLC Coal Mining Permit Application. The permit application proposes a highwall-auger / open pit coal mining project in north - central Sheridan County, Wyoming. I have reviewed the following documents related to the revised permit application:

- Appendix D6 –Hydrology
- Appendix D11 - Alluvial Valley Floors
- Appendix D5 –Topography, Geology And Overburden Assessment
- Revised mine plan
- Objections to the mine permit
- WY Administrative Rules - WDEQ / LQD - Chapters 2, 12, 19, 4 and 3
- WDEQ review comments on revised permit application

This memorandum provides my technical / scientific comments on the Revised Permit Application.

GENERAL FINDINGS

1. There is significant uncertainty / speculation re: annual and total coal production. Estimates presented by Brook Mine representatives have varied significantly and differ from what is presented in the Revised Mine Plan. Accurate estimates of annual production are essential to allow WDEQ to review the mine permit application and to evaluate potential impacts to land, air and water resources.
2. Appendix D6 and Section M.5 of the Revised Mine Plan present a very incomplete characterization of the hydrogeology and surface water hydrology. It is my opinion that as a result the permit application is not sufficient to meet the requirements included in WS 35-11 – 406 (b) (xvii) or WS 35-11 406 (n) (iii). The sparse hydrologic data (spatially and temporally), the absence of a conceptual model that explains the limited data and the very large uncertainties associated with the groundwater modeling (Addendum MP.3) severely constrains the ability to develop and implement an adequate *“plan to minimize disturbances to the prevailing hydrologic balance at the mine site and in associated offsite areas ..”* or to design and operate the coal mining operation to *“prevent material damage to the hydrologic balance outside permit area”*. Detailed comments on Appendix D6 are presented below.
3. There is insufficient data and understanding to allow determination of probable cumulative hydrologic impacts to surface and groundwater systems as required per WDEQ LQD rules {Chapter 19 - Section 2(a) (1)}, which states that such determination is required to consider impacts from the proposed Brook mine and *“their interaction with the impacts of all anticipated mining upon all affected hydrologic systems.”* Section MP.6 of the revised Mine Plan presents a highly qualitative discussion of probable hydrologic impacts that is based on a number of questionable assumptions and does not include an assessment of cumulative impacts. This is important because of the large drawdowns that were caused by extensive coal bed methane development from 2000-2012 which reportedly lowered the groundwater levels in the coal seams from 40-80 feet in the eastern part of the Brook mine permit area. Impacts to hydrologic balance that result from lowering the water table /potentiometric surface include reduction (or drying up) of domestic well yields (there are 357 permitted wells within the permit area that are permitted for domestic and /or stock watering) and degradation of riparian / fish ecologies that rely on groundwater discharge. Detailed comments on Section MP.6 are presented below.
4. The proposed water management plan is inadequate. The analyses presented in the application regarding estimates of peak flow / runoff volume (flood) water that will need to be managed during mining operations is based on old (1973) precipitation data and did not consider extreme precipitation events. Given the occurrence of extreme events across the US and in Wyoming in recent years, it is important to model these events. Even without modeling extreme events, as discussed on page D6-3, the

peak flows on Tongue River, Goose Creek, and Slater Creek are an order of magnitude higher than mean flows. Will water management structures be designed to handle mean flows or peak flows? There is a significant concern that Brook mine will not maintain /operate all of the hydrologic control structures and that the hydrologic control plan will not be maintained and effective because it relies on many structures working.

5. The permit application does not adequately address air quality issues. The revised mine plan (Section MP.16.3) only states that the Brook mine will “incorporate air pollution control equipment” and apply for an Air Quality Permit from WDEQ / AQD. There is no discussion of sources or types of air contaminants that will need to be managed. There is no discussion of the air quality monitoring program that will need to be designed and implemented to assure compliance with applicable standards.
6. Appendix D6 (page D6-9) states that reaches of the Tongue River are on the CWA 303(d) list and that a TMDL has been established for Goose Creek. However there is no discussion regarding how the proposed mining operations will be affect the listings and be in compliance with the TMDL.
7. Brook mine proposes that – any surface water right that is disturbed or affected by their mining operations shall have that water right replaced with a similar water source until *“such time that the original water right’s functionality is restored”*. Who determines if functionality is restored? Is there a maximum time limit for providing replacement water? Also -Brook mine only agrees to replace impacted wells if they are adjudicated. This is not appropriate or sufficient since most domestic /stock wells are not adjudicated.
8. The bond estimate included with the revised mine permit is insufficient. The bond amount is only for minor reclamation activities. There is no bond amount included for remediation or mitigation of environmental impacts, including hydrologic impacts. This is a serious omission.
9. Subsidence associated with trench / highwall mining could significantly perturb the shallow groundwater flow system which delivers water to Slater Creek. Hydraulic conductivities of subsidence deposits can be much lower than the undisturbed formation. This could alter groundwater flow paths and the “hydrologic balance”. This would also affect the quality of water in Slater Creek.

HYDROLOGY - APPENDIX D6 and D5

The following detailed comments are provided in support of Major Issues 2, 3, 4 and 5 above. The comments are intended to address the adequacy of the pre-mining hydrologic / hydrogeologic characterization completed in 2013 – 2014.

1. Overall the hydrogeologic characterization presented in Appendix D6 is very poor. The discussion is incomplete and based on extremely limited empirical data. There is no discussion or explanation for the apparently variably saturated conditions in the coal seams and the significant variability of water quality within and between water bearing units (coal seams and Ft. Union Formation above the coal). No conceptual model has been developed to describe the ground water flow systems in the Tongue River Member (including coal seams); the alluvial aquifer adjacent to the Tongue River; and the valley fill deposits in the Slater Creek valley.
2. No water quality data for the Tongue River above Goose Creek confluence or within the permit area is presented or discussed in Appendix D6. Water quality sampling stations should be established on the Tongue River upstream and downstream of the permit area (within ½ mile of permit boundaries). Appendix D6 should include a discussion of Tongue River water quality using data from the USGS station at Monarch WY (station 06299980) and the SCCD 2012 report. The data for the Tongue River at Decker is not representative of conditions near the mine permit area.
3. It is my opinion that the permit application is incomplete because there are no data for the USGS gage on Goose Creek after 1984. Pre-1984 data are not representative of present day.
4. There is a huge uncertainty re: temporal /spatial groundwater recharge. A sensitivity analysis included in Addendum MP-3 indicates that a change of 10-15% makes the model unstable.
5. The Tongue River Member of the Ft. Union Formation. is used extensively for water supply. As indicated on Table D6.2 -18 there are approximately 357 wells within the permit area and the adjacent 3 miles that are permitted for stock /domestic use. Section D6 .2 is deficient because it does not include a discussion on local aquifers within the Fort Union Tongue River Member including a discussion about which aquifer(s) are being used by domestic /stock wells and how vulnerable this important aquifer is to impacts from coal mining.
6. There is no discussion or data for the alluvial deposits along the Tongue River. As indicated on Exhibits D6.2-2 and D6.2-3, groundwater flow in the Masters and Carney coal seams is towards the Tongue River and likely discharges to the alluvial deposits along the north side of the River. However there are no monitoring wells in Tongue River alluvium and there is no water level, saturated thickness, or water quality data. No aquifer tests were conducted in the alluvium of Tongue River. This is a serious omission.
7. Appendix D6 contains very little site specific hydraulic conductivity data –only one value for each coal seam and only in the eastern part of the mine permit area. There is no site specific hydraulic conductivity data for the alluvial aquifers, overburden or interburden. A single storage co-efficient / specific yield value and a single porosity value were used for the entire formation. This significantly increases the error associated with the model predictions.

8. Groundwater flow in the coal seams is poorly characterized. This constrains the ability to estimate dewatering rates and volumes and to assess probable cumulative hydrologic impacts.
 - a. The potentiometric contours in Exhibits D6.2-2 and 6.2-3 indicate steep groundwater flow gradients – $i = .02$ – $.04$ ft/ft. Steep gradients result in higher flow velocities and higher discharge rates.
 - b. The potentiometric surface maps were made using average values –this limits interpretation and does not allow for seasonal comparisons.
 - c. Groundwater velocity estimates presented on page D6-19 (2-4 ft/yr for the Masters and 1-2.5 ft/yr for the Carney) are low. Using a k value of 0.55 ft/day from Table D6-4 (addendum D6-8) and a gradient of $.08 / .09$, velocity is calculated to be 10-19 ft/yr.
 - d. Appendix D6 should include a discussion of why the transmissivities vary so much for the coal seams.
 - e. On page D6-19 states that water level drawdowns from mining by Bighorn Coal are “superceded” by CBNG drawdowns, however there is no discussion about what this means. There should be a discussion of the cumulative drawdown impact from coal mining and production of CBNG. This baseline analysis is necessary before analysis of the probable hydrologic cumulative impacts of new mining can occur.
 - f. Page D6-19 -20 says that groundwater flow in 2 coal seams is NW-SE “although interrupted frequently” by faults. However the potentiometric surface maps (Exhibits D6.2-2 and D6.2-3) don’t show any change or alteration of contour lines as they cross faults.
 - g. The application contains a very poor discussion of coal seam discharge. On page D6-20 it says that there is no discharge from coal aquifers within the permit area and that there is no discharge from the Masters and Carney seams to Tongue River. This may be true –discharge is likely to Tongue River alluvium, which is not monitored.
 - h. Groundwater is stored and released from coal units (scoria) and is a source of recharge to Slater Creek alluvium. High water levels in Slater Creek alluvial wells occur in late winter indicating lag time or pulse flow. The permit application fails to properly analyze and disclose how this recharge will be affected by the intense mining in Slater Creek drainage.
9. While basin structure and topography exert some control on groundwater flow, lithology and secondary permeability features exert far greater control on flow.
10. It does not appear that Brook mine has data to support conclusion that the reach of Slater Creek that flows across the permit is a losing reach.
11. I concur with Big Horn Coal Company’s concern that proposed mining operations could cause drainage of saturated backfill in BHCC pits 1 and 2 located near the Tongue River / Goose Creek confluence. The bond to be posted by RAMACO should specifically identify this risk and the appropriate amount for remediation.
12. P D5-15 – Overburden chemistry (regulated analyte concentrations) data indicates significant exceedance of applicable standards. The mitigation presented in Appendix

- D5 for managing overburden with unacceptable concentrations of regulated analytes is vague and relies on in-situ methods. Post-closure monitoring should be conducted to help determine if there will be legacy sources of contaminants available to leach into groundwater, and such monitoring should be factored into the bond calculation.
13. There is inadequate monitoring of the underburden. There is only one monitoring well (409) in the east end of permit area screened in underburden. This is likely not representative of the underburden on the west end of the mine.
 14. Why were piezometers 578417 and 578408 constructed as 2 inch wells? It is very difficult to collect water quality samples from 2 inch wells.
 15. BHCC monitoring station HWC1-79 indicates that flow in Hidden Water Creek occurs primarily in late winter –yet there was no monitoring (flow rate / water quality sample) in late winter.
 16. Aquifer tests – Appendix D6 - Addendum D-8
 - a. It is unclear how the discharge rate of 0.33 gpm was determined as there was no step drawdown test.
 - b. The wells chosen for the aquifer testing are located in the far east end of the permit area and, given the variability in saturated conditions and water quality in the coal seams, it is unknown if the results from these wells are representative of hydraulic properties of the coal seams to the west.
 - c. The Slater Creek alluvial monitoring wells were not monitored during the aquifer tests. This was a serious omission. As determined by WDEQ there are AVF lands within the Slater Creek valley which might be impacted.
 - d. There should have been aquifer tests conducted using wells closer to Slater Creek alluvium or Tongue River alluvium to provide a more representative sample.
 17. Groundwater quality – there is considerable variation in ion chemistry between the alluvial wells and the coal wells and among the alluvial wells and coal wells. The baseline characterization provided in Appendix D6 (page D6-23, 24) does not provide any credible discussion or explanation of the geochemical processes and conditions that cause the variation. For instance, there is not sufficient data or analysis to support the conclusion that sulfate concentrations are higher in alluvial groundwater than in coal groundwater.
 18. The discussion on surface water –groundwater interaction (page D6-23) is wholly inadequate and inaccurate. The conclusion that there is no interaction is based on a highly qualitative comparison of ion chemistry between a single Slater Creek sample and a single Carney seam sample.

GROUNDWATER MODEL - ADDENDUM MP-3

1. Addendum MP-3 (page MP-3-2) lists two primary goals for the modeling effort: *(1) identify potential impact (if any) to adjacent water rights and (2) estimate long term impacts from mining operations*". The first goal was addressed. The model was developed exclusively to look at the radial extent of drawdown associated with mine

related dewatering and the potential decline of water levels in nearby domestic /stock wells. However, the modeling effort did not address the 2nd goal.

2. The groundwater model simulations and predictions were derived based on extremely limited site specific data. As stated in Addendum MP-3 (page MP-3-10) the data *“provide a limited understanding of the location, continuity and hydrology of the coal seams”*. Hydraulic properties were obtained from only one location and for some parameters, average values or literature derived values were used for all nodes.
3. A sensitivity analysis presented in Addendum MP-3 -Section 4.8 concludes that the model is sensitive to changes in hydraulic conductivity –yet only one hydraulic conductivity value was obtained from each coal seam (at a single location) and this value was used for the coals across the entire model domain. There was no empirical hydraulic conductivity data for the other 4 layers in the model including the water bearing alluvial deposits.
4. The lack of sufficient field data meant that simplifying assumptions were made – especially with regard to groundwater flow in the Ft. Union Fm. above and below the coal seams and the alluvial aquifer along the Tongue River. The model did not benefit from a well developed conceptual model aimed at characterizing groundwater flow in and between the coal seams, the overlying and underlying Ft Union Fm. and the alluvial deposits along Slater Creek and the Tongue River. This is a critical constraint since most of the domestic / stock wells in the area are completed in the non-coal parts of the Ft. Union Fm. and the alluvial aquifer along the Tongue River. The modeling effort was limited to estimating drawdowns in the coal seams and did not include an assessment of hydrologic changes in the non-coal parts of the Ft. Union Fm, the Tongue River alluvium or the alluvium along Slater Creek. Modeling the coal seams as hydrologically isolated is not based on real data and is far too simplistic.
5. There is no data to help determine the hydraulic relationship (recharge –discharge) between the Ft. Union Fm (and / or the coal seams) and the alluvial aquifer and the Tongue River. There is no discussion or data regarding water levels /saturated thickness of the Tongue River alluvial aquifer. There is no data to determine losing /gaining reaches of the Tongue River. The model assumed some discharge from Carney coal to Tongue River alluvium –but also assumed some recharge of Masters coal via loss from the Tongue River, however there is no data to verify these assumed relationships.
6. No data or information was presented regarding water level trends in nearby CBM wells. Modeling the current CBM affected coal seam water levels as static is far too simplistic. If the drawdowns from CBM production have caused the coals to be partially saturated what will happen if the water levels recover in areas where coal has been removed? The modeling indicates groundwater level recovery of 90% after 10 years for the Carney and 20 years for the Masters. This does not account for water level fluctuations due to CBM production.
7. As stated on page MP-3-10 the model was *“constructed to provide a general understanding of regional impacts”*. Using model results to make predictions at the scale of the mine permit area results in large uncertainties associated with the estimates of groundwater level drawdowns. This is especially true for potential water level declines in the Tongue River alluvial aquifer.

8. The Section on **Impacts** (p MP3-4) in the Executive Summary of Addendum MP-3 is very confusing – *“To assess the impacts on water levels for all users within the region, water levels were monitored during the mining simulation at the locations of wells completed within specific aquifers, and along the Tongue River. The maximum modeled drawdown within one existing domestic well was 25.8 ft. However, the maximum drawdown observed at most wells was less than 2 ft. with almost no drawdown predicted at many wells. The maximum estimated drawdown due to mining at additional targets along the Tongue River alluvium is 0.5 feet.* This is apparently the only place in the mine plan or Appendix D6 where there is a discussion of the impacts predicted by the modeling effort. Where are the *locations of wells completed within specific aquifers*? Where is the *existing domestic well with the predicted drawdown of 25.8 ft.*? Where are the *additional targets along the Tongue River alluvium*? *The data is insufficient to draw appropriate conclusions.*

ALLUVIAL VALLEY FLOORS - APPENDIX D11

The analysis presented in Appendix 11 is intended to satisfy requirements pursuant to WS 35-11 406 9n) (v) including a requirement that a coal mining operation *“not materially damage the quantity or quality of water in surface water or underground water systems that supply these alluvial valley floors”*. As discussed in Appendix 11, Brook mine has concluded that there are no AVFs in the Slater Creek drainage and therefore did provide information to satisfy the above requirement. However the WDEQ- LQD determined that there are AVFs in the Slater creek drainage within the permit area and that there may be additional AVFs on Slater Creek within ½ mile of the permit boundary (February 24, 2016 letter to Randall Atkins -WWC Engineering - from B. Kristiansen - WDEQ). This finding is supported by past subirrigation / flood irrigation agricultural activities. Limited subirrigation occurs on years with above average precipitation. Section D11.4.2 should discuss how many of past 50 years has been above average precipitation. Brook Mine should now submit a revised Appendix 11 that includes a plan to demonstrate how the mining operation will comply with WS 35-11 406 9n) (v).

Significant areas along the north and south sides of the Tongue River are underlain by AVFs. The Revised Mine Plan (section MP.25) states that there will be no direct mining on AVFs along the Tongue River or Goose Creek and therefore *“the essential hydrologic functions within Tongue River and Goose Creek AVFs shall be maintained”*. There is no discussion of potential impact that could occur from trench / highwall mining to the north of the Tongue River, which could reduce / alter discharge from the Tongue River Member of the Ft. Union Fm., (including the coal seams) to the Tongue River or Tongue River alluvium. This is directly related to one of the three “essential hydrologic functions” established by the WDEQ – *“ability to transmit groundwaters of suitable quality and quantity, to support subirrigation of certain areas”*. Brook mine should provide a discussion / assessment of the potential risk of reduced /altered discharge to alluvial valley floors along the Tongue River from trench/highwall mining on adjacent lands.

Detailed Comments – Appendix 11

1. The conclusion that map unit entitled -Stream Terrace Deposits Uncorrelated does not meet criteria for designation as an AVF needs to be explained and supported by data /analysis.
2. The decision to not designate surficial deposits that meet the criteria for AVFs in lower Slater Creek is not supported by data.
3. Section MP.25 of the Revised Mine Plan states that a monitoring system will be established to *“ensure that essential hydrologic functions of the AVFs are maintained.”* The monitoring system will consist of analysis of periodic infrared aerial photography and alluvial monitoring wells located along the Tongue River and Goose Creek. Details of this monitoring program should be presented and a discussion of a contingency plan if the data show impacts to AVFs from coal mining.

WATER RESOURCE MONITORING

1. An adequate water resource monitoring program should be based on a well developed conceptual model, which has not been completed. Pre-mining monitoring was focused on hydraulic testing of the two coal seams to be mined. Very limited data was obtained from four surface water monitoring stations and three non-coal groundwater monitoring wells. These data were not sufficient to develop a sound conceptual model that describes the hydrogeology, surface water hydrology and surface water-groundwater interaction.
2. Only four surface water monitoring locations were established for background characterization; two on Slater Creek and two on Hidden Water Creek. There were / are no pump samplers on the Hidden Water Creek locations so there is no water quality data to establish baseline conditions. No flow data for Slater Creek or Hidden Water Creek was obtained from Oct-March (6 months) – because the monitoring equipment was removed for winter.
3. The baseline monitoring period was too short for all four baseline locations – only one month in fall and one summer season. The lack of seasonal data precludes the establishment of annual hydrograph.
4. There were no monitoring stations established by Brook mine on the Tongue River. Both Appendix D6 and the Revised Mine Plan reference and provide data from two USGS stations on the Tongue River – one at Monarch and one near the Montana state line. While the station at Monarch will provide useful data, it is critical to establish monitoring stations upstream and downstream of the permit boundary to detect impacts from the proposed Brook mine.
5. Pre-mining groundwater monitoring did not include any monitoring wells in the alluvial deposits along the north side of the Tongue River. These deposits comprise a very important aquifer and are overlain by significant AVFs.
6. The discussion of the proposed operational monitoring network described in Section MP.7 is somewhat confusing:

- a. On page MP.47 it states that the operational surface water monitoring will be a continuation of pre- mining, baseline program. As discussed above this is inadequate. Section MP.7 includes information on how the location of any new surface water monitoring stations will be determined, however there is no discussion or commitment to establish additional surface water monitoring stations nor any discussion of potential locations.
 - b. Section MP.47 also states that the operational ground water monitoring will be a continuation of pre- mining, baseline program. Again, this is inadequate.
 - c. Ex. MP 7-1 depicts the three pre-mining alluvial monitoring wells along Slater Creek. On Table MP 7-4 five existing alluvial monitoring wells are listed. Two monitoring wells (578433 and 578434) are listed as being located in Sections 33 and 34 of T57NR84W. These two wells are not depicted on Ex. MP 7-1, nor is there any information about these two wells in Appendix D6 or the Revised Mine Plan. Table MP.7-4 also lists four proposed new alluvial wells. However there is no discussion of which geologic unit these wells are intended to monitor. Based on the locations given in Table MP.7-4 it appears these four wells are intended to monitor the alluvial deposits along Goose Creek and the Tongue River, but there is not analysis to support this conclusion. More information should be provided on these proposed wells and the permit should disclose whether WDEQ will require these wells to be installed.
 - d. Two observation wells (P62333.OW and 106680.OW) are shown on Figure 2.3-1 of Addendum MP-3. These wells appear to be located in the Tongue River alluvium. However there is no discussion of these wells in Appendix D6 or the Revised Mine Plan. Water level and water quality data from these wells should be presented and discussed.
7. The post-mining monitoring program that is discussed in Section RP.8.4 of the Reclamation Plan is very general and does not include any details on locations of proposed replacement monitoring wells or new monitoring wells. Brook mine proposes to continue the use of existing monitoring wells if they still exist after mining concludes.
- a. On Table RP.8-7 Monitoring well 578434 AI2 is listed as existing with a location and well construction information. However as indicated above on Table MP.7-4 this wells is listed as proposed.
 - b. Section RP.8.4 indicates that the pump tests will be conducted in the backfilled spoil to determine transmissivity and storage coefficient. There is no discussion of acceptable values for these parameters and what mitigation would be required if these values are not obtained.
 - c. Section RP.8.4 sates that groundwater monitoring will consist of annual water level monitoring and water quality sampling until a *“definite trend is established”* Establishing a trend with only annual monitoring could take many years. There is a real concern that Brook mine /RAMACO will not monitor long enough to establish trends. There is also a concern that water levels in the monitoring wells

will not recover for many years – so conducting the pump tests may not be possible.

8. There is no discussion or plan provided for “post-event inspections”
9. There should be a plan for monitoring quality of groundwater from dewatering that will be used for dust suppression.
10. The bond calculation should reflect all monitoring costs.

Detailed comments – Section MP.7

1. Depth to water data should be included for ground water monitoring wells listed in Table D6.2-1.
2. Screened intervals in groundwater monitoring wells (Masters, Carney, alluvium) vary a lot – many are 20 feet, which is too long and results in dilution of groundwater samples.
3. There needs to be a citation for the low flow sampling method referred to on page D6.22.

REVISED MINE PLAN

1. The mine plan does not discuss the risk of groundwater contamination (nitrate contamination) that may result from extensive blasting.
2. On page MP-4 it states that the height of tunnel associated with auger-highwall mining ranges from 2.5 to 28 ft. This is a large range and is unlikely to be correct. If it is a typo, it should be corrected.
3. Allowing placement of unsuitable overburden beneath ephemeral channel and spoil backfill in trenches or pits may create a legacy problem. The Reclamation plan (Section MP.8.4 indicates that pump tests /slug tests will be conducted post mining to demonstrate that there will be no major alteration of groundwater flow or chemistry. However there is no discussion of mitigation if post mine monitoring indicates unwanted changes.
4. Page MP-25 – there is no explanation of what “undisturbed” portions of Slater Creek means.
5. MP -25 says that Ex MP 5-1 shows ASCM areas and 9 trenches, however these are not depicted on EX MP 5-1. There should be a discussion /description of the ASCMs.
6. Page MP 26 – there is no discussion of why ASCMs greater than ½ mile from Tongue River / Goose Creek will not to be monitored per WDEQ/LQD Guideline Number 15.
7. Page MP-27 -waste water ponds need to be monitored for discharge to groundwater.

8. Description of flood control structures and plan to manage flood flows is weak. There is no disclosed basis for assuming that no flood waters will be received from lands disturbed by mining activities.
9. The mine plan will not follow WDEQ/LQD Guideline # 8 re: minimum flow for diversions. There is inadequate information on how the mine will prevent diversion discharges from having velocities that exceed permissible velocities.
10. There is no detailed information on pit dewatering – only gross estimates of the total required discharge. Also there is no discussion of treatment method for pit inflow if treatment is necessary.
11. MP.6 – PHI – numerous trenches will be aligned parallel to the Slater Creek channel plus surface pit mine–capture runoff, backfill will have different hydraulic properties than original material.
12. Stockpiles of overburden (40-75 ft high - 1.4 -13 acres) are potential point sources of contaminants. In years 6-12 all overburden stockpile locations are filled. There is a potential for leachate from these piles to migrate to groundwater or surface water. However there is no discussion of how this be mitigated.
13. The mine plan (MP.3.1) says roads will be reclaimed “unless retention is part of approved post mining land use.” It is important to make sure the roads are reclaimed and there is a concern that WDEQ will allow Brook mine to avoid road reclamation.
14. All wastewater ponds should be lined and monitored and costs should be appropriately considered in the bond calculation.

From: Jan Kelley
To: lboomgaarden@crowleyfleck.com; todd.parfitt@wyo.gov; cgregersen@crowleyfleck.com; andrew.kuhlmann@wyo.gov; sanderson@powderriverbasin.org; alan.edwards@wyo.gov; jgilbertz@yonkeetoner.com; bpcharlie@wbaccess.net; mayor@ranchesterwyoming.com; [Jim Ruby](#)
Cc: [Thomas Sansonetti](#); [Isaac Sutphin](#); [Jeffrey S. Pope](#); [Carri Svec](#)
Subject: Brook Mine - Reply in Support of Brook's Motion to Dismiss BHC's Petition for a Contested Case Hearing
Date: Tuesday, March 21, 2017 5:00:41 PM
Attachments: [Reply in Support of Brook's Motion to Dismiss BHC's Petition.pdf](#)
[Exhibits A-F.PDF](#)

Attached please find Reply in Support of Brook Mine's Motion to Dismiss Big Horn Coal Company's Petition for a Contested Case Hearing.

Jan Kelley

*Assistant to Isaac Sutphin, JoAnna DeWald,
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ATTORNEYS FOR PERMIT APPLICANT
BROOK MINING COMPANY, LLC

**BEFORE THE ENVIRONMENTAL QUALITY COUNCIL
STATE OF WYOMING**

IN RE BROOK MINE APPLICATION)	
	)	Civil Action No. 17-4802
TFN 6 2-025)	

**REPLY IN SUPPORT OF BROOK MINE'S MOTION TO DISMISS BIG HORN COAL
COMPANY'S PETITION FOR A CONTESTED CASE HEARING**

INTRODUCTION

Brook agrees with Big Horn that other than the deadline to file permit objections, the Environmental Quality Act (Act) does not explicitly impose a deadline to request a contested case for objections to a permit application. But that misses the point of Brook's argument. The Act does not set an additional deadline because the permit objection deadline applies universally and because the Act requires an informal conference or contested case occur within 20 days of the final date for filing objections. Wyo. Stat. Ann. § 35-11-406(j), (k); DEQ Rules of Practice and Procedure Ch. 3 § 3. An objector does not have to request a contested case. But this Council found otherwise. While Brook disagreed with the Council's decision insisting on a request for a contested case, Brook's motion merely argues the consequences of that ruling, namely that a logical deadline must exist to request a contested case. Under the plain language of the Act, the

only appropriate deadline is 30 days following the last date of publication. Big Horn's response simply asserts that it has a right to make the request. Nevertheless, the right to make such a request does not set a deadline or prove this Council has jurisdiction to hear Big Horn's objection. Nor does it somehow breathe life into an otherwise untimely request.

I. A logical reading of the Council's ruling makes Big Horn's request untimely.

This Council's authority comes from the Act. *Amoco Production Co. v. State Bd. of Equalization*, 12 P.3d 668, 673 (Wyo. 2000) (explaining an agency's power depends upon statutes, so "they must find within the statute warrant for the exercise of any authority which they claim.") To avoid exceeding its authority, the Council can impose only deadlines the legislature prescribed. *See id.* So if an objector must request a contested case, that request should have a deadline set forth in the Act, which is the deadline to object and request an informal conference. *See* Wyo. Stat. Ann. § 35-11-406(j), (k); DEQ Rules of Practice and Procedure Ch. 3 § 3. (Brook's Mot. 2-3.) Therefore, the logical deadline to request a contested case was January 27, 2017, making Big Horn's request untimely.

Nonetheless, Big Horn asserts Brook stipulated to an extended deadline and waived its objections. (Big Horn's Resp. 8.) Brook did neither. Brook agreed to a March date for the originally docketed 20-day hearing. But Brook never agreed to a deadline for Big Horn to request a contested case hearing. Brook has also objected to extending deadlines and the current procedure in its brief in support of the Council's jurisdiction and during the scheduling conference in this case and case 17-4801.¹

¹ The Fishers and Powder River Basin Resource Council's responses made the same arguments about timeliness and objections. To avoid duplication, Brook's arguments here apply to the Fishers and PRBRC's responses.

II. Big Horn's defense of the 1983 Release Agreement proves why the Council should dismiss.

Big Horn argues that the Council does not have authority to interpret or enforce the 1983 Release Agreement. (Big Horn's Resp. 10.) Brook's Motion does not require the Council to interpret the 1983 Agreement. Instead, Brook asks the Council to apply undisputed facts to decide if Big Horn has engaged in "contemptuous conduct" and "dilatory tactics." Wyo. Admin. Code § ENV PP Ch. 1 Sec. 13.

Big Horn agrees the 1983 Agreement is a valid contract. At the Order in Lieu of Consent Hearing conducted before this Council in August 2016, Big Horn's Mine Manager, Jordan Sweeney, said the 1983 Agreement controlled the extent of the rights between Big Horn and Brook in certain sections of land. (Transcript of Hearing Proceedings, Vol. II of II, p. 30, attached as Ex. A.) Big Horn agrees that the 1983 Agreement requires it not oppose Brook's mine plan before a governmental agency or take steps to get a state agency to disapprove of the mine plan. (Ex. B, 1983 Agreement, 2.) Big Horn also agrees it has objected to Brook's permit application, stating it "feels strongly that the Brook Mine permit application should not be approved or deemed technically complete." (Ex. C, Big Horn Objection, 10.)

Despite this consensus, Big Horn argues only a court should decide issues related to the 1983 Agreement. (Big Horn's Resp. 11-12.) This continues Big Horn's pattern. When Brook asked a court to declare its rights to mine coal, Big Horn moved to dismiss the case, arguing "the Wyoming Department of Environmental Quality is the **only entity** that can give Ramaco and Brook the right to start mining on Big Horn Coal's property." (Ex. D, excerpt from Hearing Transcript on Big Horn's Mot. to Dismiss, 5.) When Brook petitioned this Council for an order in lieu of consent, Big Horn asserted the district court had jurisdiction to decide the issue before

the relevant agencies acted. (Ex. E, Big Horn's Resp. to Brook's Req. for Ord in Lieu, 5.) After the Council decided to hear Brook's petition, Big Horn asked the Council to enforce the 1983 Agreement and find it precluded Brook from "accessing certain surface lands to extract coal by surface mining methods." (Ex. F, Big Horn's Memo and Proposed Findings, 10.) Now that Brook argues the 1983 Agreement affects this case, Big Horn contends the Council cannot consider or enforce it. (Big Horn's Resp. 11-12.)

No matter where Brook has turned to enforce its rights, Big Horn has argued the proper decision-maker is someone else, even if inconsistent with Big Horn's previous statements. That amounts to a delay tactic, which shows contempt for Brook, Brook's rights, and the permitting process.

CONCLUSION

Big Horn's response ascribes bad motives to Brook. But that is merely a smokescreen to obscure two realities: 1) a deadline must exist that complies with statutory deadlines; and 2) Big Horn contracted away its right to object 34 years ago. Big Horn's name-calling does not change this conclusion. Therefore, Brook requests the Council dismiss Big Horn's February 15, 2017 Petition for a contested case hearing.

DATED: March 21, 2017.



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BROOK MINING COMPANY, LLC

CERTIFICATE OF SERVICE

I hereby certify that on March 21, 2017, I served a true and correct copy of the foregoing by email to the following:

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Exhibit A

1 BEFORE THE ENVIRONMENTAL QUALITY COUNCIL

2 STATE OF WYOMING

3 IN RE: BROOK MINE APPLICATION)
4) Civil Action No. 16-1601
5)

TRANSCRIPT OF HEARING PROCEEDINGS
VOLUME II OF II

8 PURSUANT TO NOTICE, duly given to all parties
9 in interest, this matter came on for hearing on the
10 18th day of August, 2016, at the hour of 9:00 a.m., in
11 the Elk Room, Game and Fish Commission, 5400 Bishop
12 Boulevard, Cheyenne, Wyoming, before the Wyoming
13 Environmental Quality Council. Council members present
14 were Mr. Aaron Clark, presiding, with Dr. David Bagley,
15 Mr. Rich Fairservis, Mr. Tim Flitner, Mr. Nick Agopian,
16 and Ms. Meghan Lally.

17 Mr. Ryan Schelhaas, Attorney for the council;
18 Mr. Jim Ruby, Executive Director to the council; Mr.
19 Joe Girardin, Business Office Coordinator, were also in
20 attendance.

1 Q. Can I please call your attention to Big Horn
2 Coal Exhibit 2. Is that the 1983 release agreement
3 that you just referenced?

4 A. Yes, this is the May 6, 1983 release
5 agreement.

6 Q. And you're personally familiar with this
7 agreement?

8 A. I am.

9 Q. And are you personally familiar with this
10 agreement because it does control the extent of the
11 rights which Big Horn Coal and Ramaco/Brook Mine have
12 to those areas in Section 15 and the north half of 22
13 that we have been discussing?

14 A. Yes, it does.

15 Q. And is this an agreement between the same
16 parties as who were parties to the 1954 deed?

17 A. Yes, Sheridan, Wyoming Coal Company, a
18 Delaware corporation, and Big Horn Coal Company, a
19 Wyoming corporation.

20 Q. You testified yesterday that there had been a
21 change with regard to Big Horn Coal surface use of
22 Section 15 and the north half of Section 22 between
23 1954 and 1982. Can you please just summarize what that
24 change of surface use was?

25 A. Between 1954 and 1982, the area here, it was

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C E R T I F I C A T E

I, JACKIE GALLO, a Registered Professional
Reporter and a Notary Public of the State of Colorado,
do hereby certify that I reported by machine shorthand
the foregoing proceedings contained herein,
constituting a full, true and correct transcript.

Dated this 14th day of September, 2017

Jackie Gallo



Jackie Gallo
JACKIE GALLO
Registered Professional Reporter

My Commission expires November 24, 2019.

Exhibit B

RELEASE AGREEMENT

THIS RELEASE, made this 6th day of May, 1983, is by and between SHERIDAN-WYOMING COAL COMPANY, INC., a Delaware corporation, whose address for purposes of this Release is c/o Kennedy, Connor and Healy, P.O. Box 607, Sheridan, Wyoming 82801 (hereinafter called the "Lessor"), and BIG HORN COAL COMPANY, a Wyoming corporation, of Sheridan, Wyoming, whose address for purposes hereof is One Thousand Kiewit Plaza, Omaha, Nebraska 68131 (hereinafter called the "Lessee").

WITNESSETH:

WHEREAS, Lessor and Lessee entered into a certain Coal Mining Lease on June 28, 1954, and Supplemental Coal Mining Lease Agreements dated February 15, 1956, October 1, 1957, and September 9, 1977, and entered into a certain Coal Mining Lease dated June 12, 1979, to lease certain property situate in Sheridan County, Wyoming, and more particularly described in Schedule "A" attached hereto and by this reference incorporated herein; and

WHEREAS, Lessee exercised by letter on September 5, 1968, the option provision in the Coal Mining Lease dated June 28, 1954, to extend the lease term for fifteen years, which subsequently provided for that lease to terminate on June 30, 1984; and

WHEREAS, Lessor and Lessee desire to settle certain claims with respect to the Leases and to mutually terminate certain obligations thereunder;

NOW, THEREFORE, in consideration of the mutual covenants and agreements of the parties herein contained, the Lessor and Lessee agree as follows:

1. Lessee agrees to release, relinquish, and surrender unto Lessor all right, title, interest, claim and demand in and to the Leases insofar as they cover certain coal ("Released Coal") situate in Sheridan County, Wyoming, and more particularly described in Schedule "B" attached hereto and by this reference incorporated herein. Lessee will release its interest in the Released Coal to the Lessor by executing and recording this Release, as provided by Section 34-2-130, Wyoming Statutes (1977).

2. Lessee agrees that its obligations under the Leases with respect to property covered by the present Pits 1, 4, and 5 and more particularly described by Schedule "C" attached hereto and by this reference incorporated herein, will continue in force and effect until June 30, 1984.

3. Lessee agrees to quit, vacate, and surrender possession of the property covered by the present Pit 5 to Peter Kiewit Sons' Co. on June 30, 1984.

4. Lessor shall be entitled to retake possession of any of the above-described Released Coal which is not currently in Lessor's possession immediately upon execution of this Agreement, and shall be relieved from further duties and obligations under the aforementioned lease with respect to the Released Coal.

5. Lessor expressly consents and agrees to allow Lessee to leave intact any and all permanent structures, stockpiles, or spoil materials (referred to herein collectively as "structures and stockpiles") currently located in Sections 9, 10, 14, 15, 21, and the N $\frac{1}{2}$ of Section 22 of T. 57N., R. 84W., 6th P.M., as more specifically identified in Schedule D attached hereto. Unless Lessor's express written consent is received, any temporary or permanent structures or stockpiles located south of old Wyoming State Highway 338 in the SE $\frac{1}{4}$ of Section 22 or the N $\frac{1}{2}$ NE $\frac{1}{4}$ and NE $\frac{1}{2}$ NW $\frac{1}{4}$ of Section 27 shall be located at Lessee's sole risk and expense, and shall be subject to the following express conditions: The placement of any temporary or permanent structures or stockpiles in that part of Section 22 south of old Wyoming State Highway 338 and in Section 27 shall be subject to the terms and conditions of the Road Relocation Agreement, dated August 7, 1981, between Big Horn Coal Company and Sheridan-Wyoming Coal Company. In addition, Lessee agrees to move any structures and stockpiles, including the relocation of Wyoming State Highway 338, as necessary, at its sole cost and expense, at such time as the Lessor, or its successors in interest, presents to Lessee a mine plan approved by all applicable governmental agencies to mine the coal in either Section 22 or 27. If the Lessor makes application for approval of a plan to mine any of the coal in the pertinent portions of these two sections, its application shall in no way be prejudiced by the existence of any structures or stockpiles or the location of State Highway 338 in these sections. Lessee will not oppose any such mine plan before any governmental agency and will take no action, direct or indirect, to induce any federal, state, or local agency to disapprove or otherwise object to such mine plan. If approval is conditioned upon Lessee's consent to remove or relocate the road or any structures or stockpiles, Lessee shall not withhold such consent. Lessor reserves the right to seek specific performance of this obligation in addition to any and all remedies available to Lessor including all remedies provided under the Road Relocation Agreement. The parties recognize that the payment of monetary damages will not adequately and sufficiently compensate Lessor in the event Lessee breaches its obligation to move the highway and any structures or stockpiles located on Section 27 and south of old Wyoming State Highway 338 in Section 22. Lessee expressly waives, and shall be estopped from asserting any defenses to Lessor's claim for specific performance of these obligations. If Lessee breaches

8/7/81 Road Re-
location Agrmt.

its obligation, Lessor may, at its option, undertake to relocate the highway and move any structures or stockpiles located on said parts or Sections 22 and 27, and Lessee agrees to reimburse Lessor for any and all costs and expenses resulting from such action.

6. With respect to the coal in those areas described in Schedule B that is to be released, Lessee agrees that it will, upon execution of this Agreement, continue to perform within eighteen months thereafter all abandonment, reclamation, and related procedures required by any applicable law or regulation subject to Paragraph 7 of this Release Agreement. With respect to the coal in those areas described in Schedule C that is to be released on June 30, 1984, Lessee agrees that it will, "by no later than December 31, 1985, perform all abandonment, reclamation and related procedures required by any applicable law or regulation. It is understood, however, that the final reclamation for the identified portion of Section 15 which involves the Pit 3 extension out-of-pit stockpile area, will not necessarily be completed until June of 1987 and that that portion identified in the N $\frac{1}{4}$ of Section 22, and north of old Wyoming State Highway 338 in the SE $\frac{1}{4}$ of Section 22 will need to be redisturbed in the early 1990's with placement of out-of-pit soil from the Pit 1 southeast extension. Such reclamation and restoration activities shall be conducted diligently and in compliance with all applicable federal, state or local laws and regulations, as the same may exist or be enacted or amended from time to time.

7. Lessee agrees to apply for transfer to Lessor, at the option of the Lessor, of those permits and governmental authorizations identified in Schedule E attached hereto and incorporated by this reference with respect to the Released Coal within thirty (30) days from the date of execution of this Release Agreement. Lessee also agrees to transfer, at the option of the Lessor, to the Lessor any and all permits and governmental authorizations with respect to the property covered by the present Pits 1 and 4 by June 30, 1984.

8. Lessee hereby agrees to and does hereby assume all liability for and indemnify, protect, save, and hold harmless Lessor and Lessor's assigns and successors from and against any and all losses, costs, expenses, attorneys' fees, claims, demands, suit, and actions of any character whatsoever (hereinafter referred to collectively as "Liabilities") imposed upon or incurred by the Lessor on account of or arising directly or indirectly out of or in connection with the operations of Lessee with respect to the Released Coal. In the event that any Liabilities arise or are contributed to by the negligence of the Lessor, Lessee's liability for payment of such Liabilities shall be reduced in proportion to the amount of Lessor's negligence.

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By:

Title:

By:

Title:

BHC00188

Exhibit C



**BIG HORN COAL COMPANY
10980 SOUTH JORDAN GATEWAY
SOUTH JORDAN, UT 84095**

January 25, 2017

Wyoming Department of Environmental Quality
Land Quality Division
200 W. 17th Street
Cheyenne, WY 82002

ATTN: Mr. Alan Edwards, Assistant Administrator

RE: Objections to Proposed Brook Mine Permit Application, Sheridan County, Wyoming

Dear Mr. Wendtland,

Big Horn Coal Company (BHCC) writes to provide objections to the Brook Mine permit application.

During the course of our review, we discovered that the information was inconsistent among the locations noted in the public notice. We advised Brook Mine's legal counsel of the inconsistency on December 20, 2016. We are not aware if the information was updated to correct the inconsistency between the locations.

Our objections are based upon what BHCC believes to be the most accurate, up-to-date information and relate primarily to the permit application's lack of adequately addressing hydrologic issues that could significantly affect existing and future water rights, the quantity and quality of surface water and groundwater within and adjacent to BHCC, the potential for coal seam fires to erupt in both the open pit and subsurface openings and the potential for miner safety and environmental harm proposed in the permit Mine Plan. The objections are referenced to text section headings, exhibits and addenda of the permit application Mine and Reclamation Plan.

Objection No. 1 – Mine Plan & Rec Plan Review

Big Horn Coal has reviewed the proposed mine and reclamation plan and is concerned with the general lack of detail contained in the proposed plan. It appears that no sampling, testing or analytical work of any sort has been performed to support the surface and highwall mine designs and plans. It is Big Horn Coal's opinion that excavating in the area, surrounding the Big Horn Mine will create a large safety concern and environmental

liability as the TR-1 trench cut could become inundated with water from the historic backfill of the BHCC spoils of Pit 1 and Pit 2.

BHCC would like to put on record that it is providing written notice of its concerns so Brook Mine and other affected parties have notice and are aware of these issues and that Big Horn Coal is not responsible for any personal, property or environmental damage or other loss due to the disturbance activities associated with the Brook Mine, its affiliated companies or successors in interest.

BHCC has not consented to overlapping permit boundaries nor has it been indemnified of any disturbance related to Brook Mine's proposed activities as it relates to the reclamation obligations and BHCC's reclamation liabilities.

Objection No. 2 – Section MP.4; Exhibit MP.4-1; Section MP.5; Section MP.13; Addendum MP-6

Section MP.4 and Exhibit MP.4-1 provide plans for the development of a highwall mining trench through and the development of highwall mining panels beneath reclaimed backfill of BHCC Pits 1 and 2 adjacent to Goose Creek and the Tongue River in the southeastern portion of the Brook Mine permit area. The trench would penetrate through the bottom of the backfill allowing mining of Carney coal found about 70 feet beneath the backfill. The backfill of the proposed trench area averages about 90 feet thick. The northeast corner of the highwall panel area appears on Exhibit MP.4-1 to be equivalent to the Brook Mine permit boundary, and would be less than 100 feet from the bank of the Tongue River. On Figure MP-6.1-1 of Addendum MP-6, the highwall mining panels are shown even closer to the Tongue River channel, and the reason for the disparity between the figure and Exhibit MP.4-1 is unexplained. BHCC is very concerned over and objects to the permit's disturbance, affected and permit boundaries all being equivalent to the mining panel boundary in this most environmentally sensitive area adjacent to the bank of the Tongue River. The affected area boundary shown on Exhibit MP.4-1 around the other proposed mining panels typically extends well beyond the disturbance boundary for reasons unexplained in the Mine Plan.

Mine Plan Section MP.4, together with all Mine Plan text inclusive of Section MP.13 and Addendum MP-6, are silent on the subject of the special textural and hydrologic characteristics of the proposed southeastern highwall mining area in Sections 15 and 22, T57N, R84W. The area is unique in that the strata overlying the coal to be mined includes a thick layer of unconsolidated, saturated backfill exhibiting shallow groundwater elevations of 20 feet or less below ground surface where existing ground elevations are 3600 feet and lower. The water surface in BHCC's postmining Reservoir 14 in the SESE Sec. 15 is an expression of the groundwater table. The groundwater throughout Pits 1 and 2 is directly connected to and recharged by Goose Creek and the Tongue River, as documented in the Big Horn Mine's Reclamation History, Groundwater Restoration Demonstration (GRD) approved by the WDEQ/LQD as Change No. 9 to Permit 213-T5 in August 2002. The GRD verifies that the Pits 1 and 2 backfill resaturated very rapidly, indicative of unconsolidated, porous material connected to perennial stream recharge sources nearby. Mine Plan Section MP.4 is silent on the subject of managing massive sloughing that may occur in the saturated and nonsaturated backfill of the southeastern highwall mining area as the highwall mining trenches are excavated through the backfill to the base of Carney coal. Section MP-5 of the Mine Plan also fails to present an

alternative water management and treatment plan to be followed should groundwater inflow volumes exceed infrastructure design capacities.

BHCC finds the assessment of potential land subsidence and the remediation plan presented for land subsidence in Addendum MP-6 to be inadequate relative to protecting the value and function of its lands, particularly for protecting the stability of the Tongue River and the quality of shallow groundwater connected to the river. Addendum MP-6 does not absolutely discount the possibility of land subsidence above the highwall miner holes, nor does it provide a plan for the discontinuation of any southeastern area highwall mining should subsidence occur in the lowlands contiguous to Tongue River or Goose Creek. The environmental implications of subsidence developing adjacent to Tongue River and Goose Creek are so severe as to warrant, at a minimum, a permit commitment to temporarily or permanently cease all mining throughout all of the southeastern highway mining area should any subsidence develop in any of the area at any time. The permit's plan for "backfilling will commence within 12 months of a subsidence location being identified if self-healing is not providing sufficient remediation" (Section MP-6.4, Addendum MP-6) is environmentally unacceptable for the southeastern highwall mining area because: 1) the stability and alignment of Goose Creek and Tongue River could be jeopardized should subsidence occur, and; 2) any groundwater quality impacts associated with underground coal fires developing in mine openings would have direct and essentially immediate access to Goose Creek and Tongue River via the shallow groundwater table.

The subsidence control plan presented in Addendum MP-6 is inadequate. It appears that no analytical work of any sort (sampling, material testing, etc.) has been performed in support of the highwall mining design presented in the mine plan. Additionally, it also appears that no geotechnical work of any sort has been performed. Addendum MP-6 discusses general assumptions for highwall mining penetration depths, entry widths, cutting heights and support pillars. This information is presented somewhat anecdotally and in the case of the support pillars, it states that "Support pillars will be designed to have a width equal to or exceeding the maximum extraction thickness anticipated in a highwall mining hole based on the mine's geologic model. This width-to-height ratio of at least 1:1 results in pillar stability factors that exceed recommended values suggested by National Institute for Occupational Safety and Health's (NIOSH) ARMPS-HWM stability program for the overburden thicknesses expected. Pillar dimension will also be in accordance with Brook Mine's Ground Control Plan approved by MSHA."

No material strength data (coal strength, overburden strength, interburden strength, etc.) is provided in the mine plan document. BHCC suspects that no material strength information has been gathered or determined. Can the NIOSH stability factors actually be achieved? This is unknown at this point as no definitive geotechnical and material strength data has been presented in the mine plan. The coals present in this area are of a younger age. Younger age coals have much weaker strengths than older age, deeper coals and it is quite possible that the safety and stability factors needed to safely and effectively execute the highwall mining approach presented in the mine plan cannot be achieved. BHCC insists that further analysis be performed to definitively prove that the web and barrier pillars dimensions are appropriate and that they will meet NIOSH's minimum stability factor of 1.3.

Very little highwall mining has been performed in Wyoming. Highwall mining has been performed relatively recently at the Bridger Mine, which is located in Southwest Wyoming.

While the exact details are unknown, BHCC is aware of at least one “cascading pillar failure” at that operation and fortunately, there were no injuries. It is suspected that this failure was caused by improper pillar layout and design. BHCC is concerned that the anecdotal mine design presented in this document is inadequate and must be performed with proper analytical data.

Objection No. 3 – Section MP.5.9; Section MP.6.2; Addendum MP-3; Section MP.8

The groundwater model of Addendum MP-3 was improperly constructed and executed because the model does not recognize the unique textural and hydraulic characteristics of saturated backfill in BHCC’s Pits 1 and 2, but instead simulates the backfill in the same fashion as native overburden strata (see Section 4.0 of Addendum MP-3). Section 2.5.1 of Addendum MP-3 states “no site-specific hydraulic conductivity information is available for the over/interburden (model) layers”. In fact, hydraulic conductivity data are available for the backfill from former monitor wells in the Pit 1 and Pit 2 area and for the Plachek Pit backfill. That data are provided in the GRD referenced under Objection No. 1 above. Hydraulic conductivity values assigned to the spoils together with all other “overburden” strata in the model are very small (less than one tenth) relative to those shown for backfill in the GRD. The groundwater model ignores determination of the spatial extent of drawdown in the water table of Pit 1 and Pit 2 backfill that is connected to the water table in Tongue River and Goose Creek alluvium, which in turn is supplied by flows in both streams. The text of Section MP.6.2.3 states “Drawdowns of the overburden were not modeled and only isolated sands where encountered are expected to be affected”.

Section 4.9 and Figure 4.9-11 of Addendum MP-3 shows where the groundwater model was used to predict water table drawdown in Tongue River valley alluvium at “alluvial target” points distributed over nearly a six-mile reach of the valley floor. Section 4.9 states that “the maximum impact to the Tongue River alluvium is conservatively estimated to reach 2.5 feet of drawdown near the river”. Addendum MP-3 and Section MP.6.2 provide no description or drawing of the spatial distribution of drawdown during mining in BHCC’s saturated backfill or in the alluvium of Tongue River and Goose Creek that is hydraulically connected to the backfill. Neither does the groundwater model explore potential permanent groundwater elevation changes associated with the highwall mining panels acting as drains to the backfill and alluvial water table via the highwall trench pits. Water table drawdown approaching 2.5 feet in the alluvium of Tongue River valley over a valley distance of nearly six miles would in fact represent a very large volume water loss that would likely cause stream flow losses.

The groundwater model of Addendum MP-3 fails to report groundwater inflow rates to any of the proposed mine excavations. Section MP.8 of the Mine Plan states “It is estimated that the total water use will be approximately 400 million gallons per year.” This is equivalent to an average daily use rate of 760 gallons per minute, about 3.36 acre-feet per day, or about 1,226 acre-feet per year. The Mine Plan does not identify the specific source(s) of the water beyond mentioning that “Industrial water will be obtained from groundwater wells or from water collected in sediment and flood control reservoirs”. The groundwater model of Addendum MP-3 does not include the effects of withdrawing any groundwater from wells for industrial or other uses, nor does it include the effects of dewatering wells mentioned in Section MP.5.9. In short, the Mine Plan is devoid of a hydrologic budget identifying specific groundwater sources, the quantity of industrial

water projected to be available from flood control reservoirs and sediment ponds, and the determination of what would remain of groundwater and surface water supplies while supplying the industrial water needs. BHCC is concerned that the value of its surface estate and future options for developing its surface estate could be marginalized by such a large water use demand, especially considering that water demands at Wyoming coal mines are primarily consumptive.

Objection No. 4 – Section MP.11; Addendum MP-5

The fire control plan referenced in Section MP.11 and presented in Addendum MP-5 describes measures to be taken to prevent and control fires in the mine pits, fires in the mine's processing and shop facilities, equipment fires and rangeland fires. BHCC objects, however to the Mine Plan and Addendum MP-5 not providing plans to control and extinguish new subsurface coal fires that may develop or existing subsurface coal fires that may become rekindled or enlarged as a result of the highwall mining panels that will be opened outboard of the highwall trench openings.

Attachment 1 provided with this Objection No. 4 is a drawing showing the approximate extent of underground coal mine fires in the area of proposed highwall mining in Sections 10 and 15, T57N, R84W, as reported by the U.S. Geological Survey in 1980. The fires in this particular area originated with mining of the Monarch coal. This and other nearby historic underground mines have long been known to exhibit numerous subsidence features and underground coal mine fires, and in the late 1980s BHCC received approval from the WDEQ/LQD to permanently place nearly 10 million bank cubic yards of overburden over the area shown on Attachment 1 in an attempt to reclaim the subsidence and control the fire. That unique reclamation feature is known as the Pit 3 Subsidence Dump in Big Horn Mine's reclamation history. The proposed highwall mining will develop mine openings in the Carney and Masters coal seams beneath the Monarch seam in areas that are known to still exhibit evidence of underground coal fires. Plumes of steam and smoke have been observed again over the general area of Sections 10 and 15 this winter of 2016-2017. These observations indicate that, in places, the perimeter of the historic subsurface coal seam fires has expanded notable distances from the referenced 1980 boundary delineation.

The subsidence control plan of Addendum MP-6 does little to guarantee the long-term protection of BHCC's surface estate especially where highwall mining panels will be driven beneath underground coal mine fires having a long history of activity. Section MP-6.2 of Addendum MP-6 provides numerical calculations for subsidence chimney heights, but there is no investigation of the potential that the historic mine fires may have compromised the structural integrity of strata underlying the fires and overlying the coals targeted for highwall panel mining (the interburden), leaving the interburden more prone to subside than normal. BHCC is particularly concerned and objects to highwall mining beneath or adjacent to pre-existing underground mine fires because of the potential for oxygen and water to be transmitted from the highwall mining openings to "hotspots" in the seams already burning via highwall trenches or via fractured or subsided interburden above the panel openings. BHCC strongly disagrees with the legitimacy of the plan stated in Section MP-6.4 of Addendum MP-6 which states "Backfilling will also be performed if it is determined that the introduction of water and oxygen could contribute to spontaneous ignition of the remaining coal not extracted from the highwall mining operations". BHCC

contends it to be common knowledge in the mining industry that oxygen and water are key catalysts in causing spontaneous combustion in coal, whether the coal be in mine openings or in stockpiles. BHCC also believes that the introduction of additional water and air to a coal seam already on fire is especially problematic.

Section MP-6.3 of Addendum MP-6 commits to maintaining highwall mining mapping and subsidence documentation in a subsidence report that will be available for inspection. BHCC objects to the Mine Plan not committing to freely submitting the highwall mining mapping and subsidence documentation report to all owners of surface estate within the Brook Mine permit area. BHCC also objects to the fact that the Subsidence Monitoring and Assessment reporting of Section MP-6.3 does not include mapping, photographing and describing all evidence of surface or underground coal fires occurring within the Brook Mine permit area whenever such evidence becomes available throughout the life of the mining and post-mining periods.

Objection No. 5 – Section MP.1.3; Exhibit MP.1-1

The mine plan on Page MP-5, identifies the “disturbance boundary includes all lands that will be physically and directly disturbed during mining.” Exhibit MP.1-1 shows the disturbance boundary as a dashed orange symbol that outlines an entire pink hatched polygon, identified as “DISTURBANCE FOR YEAR 2016,” located in Sections 15, 21, 22 and 27 of Township 57 North, Range 84 West.

Within the pink hatched polygon, there are existing assets to Big Horn Coal Company. These assets include a rail spur, water tank, pump house, access roads, fences and land owned by BHCC. Also within the pink hatch polygon is the mainline of the Burlington Northern Railroad and associated lands owned by Burlington Northern.

Based on the definition of Disturbance Boundary as indicated on page MP-5, does Brook Mine indeed have the rights to physically and directly disturb these lands within the pink hatched polygon? From the public record, BHCC has not been able to determine whether Brook Mine has secured surface owner consent from all surface owners, including the railroad, for these activities

Objection No. 6 – Section MP.1.5

The mine plan states on Pages MP-5 and continue onto page MP-6 that “Coal will either be temporarily stored in the pit or directly hauled off site.”

There is no mention in the permit as to where the coal will be hauled off site. Additionally there is no known agreement with the County of Sheridan, indicating approval to haul mineral across county roads.

Objection No. 7 – Section MP.1.9

The mine plan states on Pages MP-7 that “The Brook Mine will operate in conjunction with Taylor Quarry (Permit No. SP-757)... The Mine will work with Taylor Quarry to minimize impacts on Taylor Quarry’s operation.”

The following paragraph states “The Brook Mine will not obstruct Big Horn Coal’s (Permit 231-T8) Shop, Bridge, and Rail Road Siding as they exist in Big Horn Coal’s 2015 Annual Report. An access road equivalent to the existing improved road will be provided if proposed stockpiles or pits should restrict the existing access as shown on Exhibit MP.1-1.

To remain consistent with the statements made in regards to the Taylor Quarry, Big Horn Coal requests that the paragraph referencing Big Horn to be replaced and restated as follows:

“The Brook Mine will operate in conjunction with the Big Horn Mine and that the Brook Mine will work with Big Horn Coal to minimize impacts to Big Horn Coal operations. Specifically, Brook Mine will not obstruct Big Horn Coal’s (Permit 213-T8) Shop, Bridge, and Rail Road Siding as they exist in Big Horn Coal’s 2015 Annual Report. An access road equivalent to the existing improved road will be provided if proposed stockpiles or pits should restrict the existing access as shown on Exhibit MP.1-1.”

Big Horn Coal requests that the text be updated in the previous paragraph to reference the correct permit number for Big Horn Coal Company as (Permit 213-T8).

Objection No. 8 – Section MP.3.1, Section MP.3.1.3 – Roads; Exhibit MP.3-1

As stated in the mine plan on Page MP-11, “Primary roads are any road used for transporting mineral or spoil, or frequently used for access or other purposes for a period in excess of six months, or roads to be retained for postmining use.”

WDQ/LQD Rules and Regulations (R&R) Chapter 4, Section 2(j)(vii):

Primary roads.

(A) Certification. The construction or reconstruction of primary roads shall be certified in a report to the Administrator by a registered professional engineer. The report shall indicate that the primary road has been constructed or reconstructed as designed and in accordance with the approved plan. The report shall be available for review at the mine site within 30 days following the completion of construction of each primary road.

Mine plan Exhibit MP.3-1, titled Transportation Network identifies proposed primary haulroads as a solid black line, for the use of transporting mineral or spoil. Yet, there are no haulroads identified in the SE quarter of Section 15, Sections 21, 22 or 27. If the Brook Mine plans to haul mineral or spoil materials from the proposed Trench Cut (TR-1), there should be indication of a primary haul road leaving TR-1, accompanied by a certification of the road design. Unless there are no plans of transporting mineral or spoil from the TR-1 area.

Objection No. 9 – Section MP.4.2.3 – Stockpiles; Exhibit MP.4-3

The mine plan states on Page MP-16, “Stockpiles will not be constructed on unsuitable backfill.”

Mine plan Exhibit MP.4-3, Stockpile Locations identifies Topsoil Stockpile TS-1B proposed location within an area known as the Placheck Pit. This area was mined by Big Horn Coal from 1956 through 1963. It is Big Horn Coal's understanding that the proposed area beneath TS-1B is indeed unsuitable material and that topsoil should not be placed in the area as proposed on Exhibit MP.4-3. Additionally, Big Horn Coal is not aware of a surface owner consent document between Brook Mining Company and the Burlington Northern Railroad that would allow the crossing of the mainline with loaded haul trucks.

Objection No. 10 – Section MP.6.1; Exhibit MP.7-1

Exhibit MP.7-1 represents the operational Surface Water and Groundwater Monitoring Program. There are only two downstream surface water monitoring sites, identified as Big Horn No. 2 Reservoir and Big Horn No. 14 Reservoir. The text on page MP-41 of the Mine Plan states "However, the Big Horn No. 2 Reservoir and Big Horn No. 14 Reservoir will be disturbed by facilities disturbance."

Big Horn Coal believes there is inadequate downstream monitoring in the proposed plan. Upon disturbing of Big Horn No. 2 Reservoir and Big Horn No. 14 Reservoir, there will be no sites downstream of the Brook Mine to collect adequate surface and groundwater data to prove that there are no off site environmental impacts from the proposed operation.

Objection No. 11 - Addendum MP-2, Exhibit MP-2

The proposed Sediment Pond SP-8 is located within the current postmine approved Reservoir 14 constructed by BHCC. The bottom elevation of Reservoir 14 is currently at 3575 with a peak elevation at 3589. Sediment Pond SP-8 bottom elevation is proposed at 3585 with a high water elevation proposed at 3590. It is noted below the area capacity table on Exhibit 13, "1. Pond is entirely incised. No Spillway hydraulics are provided."

These elevations lead BHCC to believe the plan for construction of SP-8 will require Reservoir 14 to be completely backfilled prior to construction of SP-8. BHCC requests that the reconstruction and the water quality within Reservoir 14 be restored to pre-mining conditions before final bond release is allowed.

Objection No. 12 – Exhibit MP.4-1; Exhibit MP.4-2; Exhibit MP.4-5; Exhibit RP.5-1

The proposed mine plan indicates that topsoil and overburden removal will occur upon the BHCC Property and within the TR-1 area in years 1 and 2 of operation. Exhibit MP.4-1 shows coal removal to occur over the same first two years of operation. Exhibit MP.4-5 shows the overburden backfill sequence within TR-1 will occur in year 2. Exhibit RP.5-1 shows the topsoil replacement sequence within the BHCC Property occurring in years 12-16.

BHCC objects to this timeline of topsoil replacement upon its property. The BHCC property is the first to be disturbed and the last to be reclaimed. BHCC asks the question as to why every other proposed disturbance area is backfilled and topsoiled within a 2 to 3 year time frame except around the BHCC facilities area. The topsoil replacement timeframe is unacceptable and not contemporaneous in accordance with the Surface Mining Control and Reclamation Act, (SMCRA) and it is requested that the final

reclamation around the BHCC Property be within the 2 to 3 year time frame, similar to all other areas around the mine.

Objection No. 13 – Section MP.1.2.1; Figure MP.1-2.

Section MP.1.2.1 discusses the work that will be done to “prepare for highwall mining” and describes how the “trenches” will be constructed to “create working areas for highwall mining equipment”. This section of the mine plan states that “The highwalls will have a 65-degree bench slope to provide a stable trench environment. Where the trench intersects the burnt Monarch coal seam, a 35-foot wide safety bench will be added. Where the Carney and Masters coal seams come close to convergence, a vertical wall will be used to maintain the desired pit width.” Earlier, under Objection No. 2, BHCC discussed the presence of saturated backfill where trench TR-1 is planned to be excavated. Section MP.1.2.1 does not address in any fashion the fact that trench TR-1 will be constructed in an area containing a significant amount of saturated backfill material. In our opinion, utilizing a 65-degree bench slope in this material will be impossible as the saturated backfill will not safely stand at this angle. Furthermore, no geotechnical information (sampling, testing or analysis) supporting slope stability assumptions for the surface mining or highwall mining operations have been provided in the mine plan. BHCC finds the information regarding highwall bench slope angles presented in MP.1.2.1 to be inadequate given the variability of non-coal material that will be encountered during excavation of trenches in support of the highwall mining operation.

Objection No. 13 – Section MP.1.2.1; Figure MP.1-2.

Section MP.1.2.1 discusses the work that will be done to “prepare for highwall mining” and describes how the “trenches” will be constructed to “create working areas for highwall mining equipment”. This section of the mine plan states that “The highwalls will have a 65-degree bench slope to provide a stable trench environment. Where the trench intersects the burnt Monarch coal seam, a 35-foot wide safety bench will be added. Where the Carney and Masters coal seams come close to convergence, a vertical wall will be used to maintain the desired pit width.” Earlier, under Objection No. 2, BHCC discussed the presence of saturated backfill where trench TR-1 is planned to be excavated. Section MP.1.2.1 does not address in any fashion the fact that trench TR-1 will be constructed in an area containing a significant amount of saturated backfill material. In our opinion, utilizing a 65-degree bench slope in this material will be impossible as the saturated backfill will not safely stand at this angle. Furthermore, no geotechnical information (sampling, testing or analysis) supporting slope stability assumptions for the surface mining or highwall mining operations have been provided in the mine plan. BHCC finds the information regarding highwall bench slope angles presented in MP.1.2.1 to be inadequate given the variability of non-coal material that will be encountered during excavation of trenches in support of the highwall mining operation.

Objection No. 14 – Section MP.4.4.1

It is a well-known fact within the mining industry that the term “Reserves” connotes that the mineral being extracted can be done so economically. BHCC opines that the mining approach presented in the mine plan cannot be done economically. Based on our internal

knowledge; the operating cost for a contractor to perform highwall mining is in the \$8/Ton to \$12/Ton range, which is very close to the domestic spot price for this type of coal. By the time the other costs for the surface mining to develop the highwall mining, transportation, G&A, etc. are taken into consideration, this operation appears to be completely uneconomical.

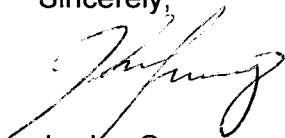
The market for this coal is unclear. The two closest coal mines, Decker and Spring Creek, serve the domestic and international market. Port capacity to the international market is constrained and it is unlikely that Brook Mine will secure access. Domestic demand has been in decline and is significantly oversupplied. Without a definitive market, the Brook Mine is at risk of commencing operations, producing product it cannot sell economically, and reclamation obligations that it cannot fund.

Objection No. 15 – Section MP.15

Objection No. 4 above introduces the fact that the underground mine fires in this area are still burning and have expanded. Section MP.15 does not, in any way, address that the burned areas have expanded. A surface mine excavation that comes in contact with a historic mine fire could be catastrophic in many ways, including: impacting the safety of mine workers, damage to equipment, wildfire initiation, etc. BHCC believes this mine plan has not adequately addressed surface mining activities that will occur near underground mines and insists that the Brook Mine operators must perform the necessary testing and analysis to prove that the proposed mine plan will not be impacted by historic mine fires. Specifically, attachment 1 provided with Objection No. 3 above shows that trench TR-2 is planned very near an area that was burning and is likely still burning. Given that the burned area has likely expanded, this area should not be disturbed at all.

In conclusion, Big Horn Coal Company feels strongly that the Brook Mine permit application should not be approved or deemed technically complete. The mine and reclamation plan lack a significant amount of detail that is required for a technical completeness determination, as stated in the above mentioned objections.

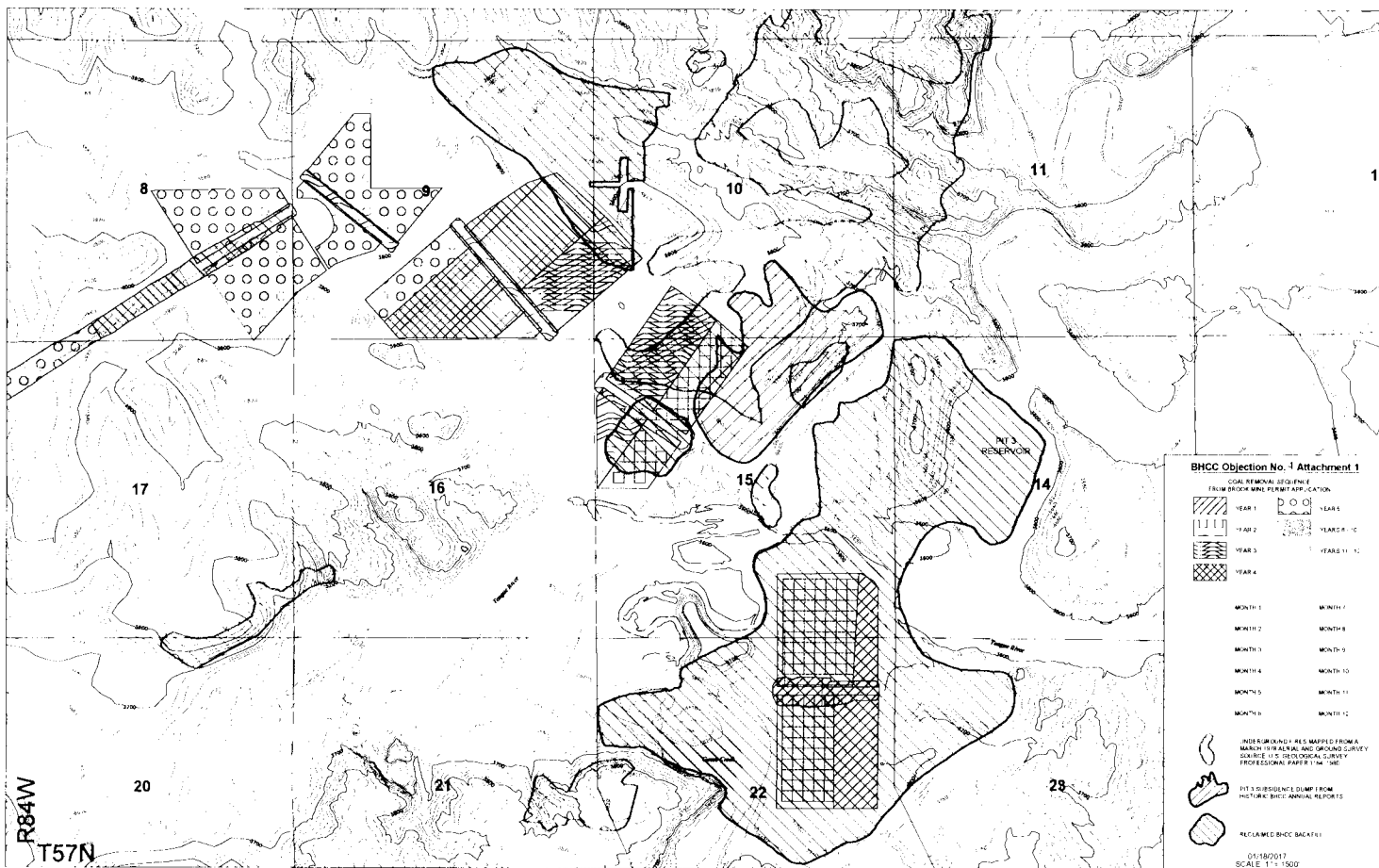
Sincerely,

A handwritten signature in black ink, appearing to read 'Jordan Sweeney', written over a horizontal line.

Jordan Sweeney

General Manager
Big Horn Coal Company

Attachment: BHCC Objection No.4 Attachment 1



BHCC Objection No. 4 Attachment 1

COAL REMOVAL SCHEDULE
FOLLOW BROCK MINE PERMIT APPLICATION

YEAR 1	YEAR 5
YEAR 2	YEARS 9 - 10
YEAR 3	YEARS 11 - 12
YEAR 4	

MONTH 1	MONTH 7
MONTH 2	MONTH 8
MONTH 3	MONTH 9
MONTH 4	MONTH 10
MONTH 5	MONTH 11
MONTH 6	MONTH 12

INTERMEDIATE PITS MAPPED FROM A MARCH 1916 AERIAL AND GROUND SURVEY SOURCE: U.S. GEOLOGICAL SURVEY PROFESSIONAL PAPER 1714A-14B

PIT 3 RESERVOIR DUMP FROM HISTORIC BHCC ANNUAL REPORTS

RECLAIMED BHCC BACKFILL

01/18/2017
SCALE 1" = 1500'

Exhibit D

CASE NO. CR-2014-372

BROOK MINING COMPANY,

Plaintiff,

VS.

MOTION TO DISMISS

BIG HORN COAL COMPANY,

Defendants.

The above-entitled matter came on for hearing before the Honorable William J. Edelman, Judge of the Fourth Judicial District of Wyoming, on January 8, 2015 at Sheridan, Wyoming.

The proceedings were reported by Jeff S. Eaton,
Official Court Reporter for the Fourth Judicial District, as
hereinafter certified.

A P P E A R A N C E S

The Plaintiff was present and represented by Anthony Todd Wendtland, Wendtland & Wendtland, LLP, Sheridan, Wyoming, and Thomas L. Sansonetti, Holland & Hart, LLP, Cheyenne, Wyoming.

The Defendant was present and represented by Jon T. Dyre and Lynnette J. Boomgaarden, Crowley Fleck PLLP, Billings, Montana.

EXHIBIT B

Jeff S. Eaton, Official Court Reporter
307-425-6057
jeaton@courts.state.wy.us

1 MR. DYRE: Thank you, Your Honor.

2 May it please the Court, Counsel.

3 As you know, I represent Big Horn Coal Company.

4 And Big Horn Coal Company owns some land just outside
5 of Sheridan on which -- which RAMACO wants to use for a
6 proposed coal mine.

7 We've referred to that land in the briefs as BHC
8 Land, I'll do so today.

9 Big Horn Coal Company obtained its interest in land
10 back in 1954 in a deed from Sheridan-Wyoming Coal Company. And
11 we've referred to that deed as the 1954 deed. We're not very
12 imaginative, but that's what we called it.

13 The grantor of the interest with Sheridan-Wyoming
14 Coal Company and Sheridan-Wyoming Coal Company reserved all
15 minerals including the coal.

16 In the last few years through I think two
17 conveniences, RAMAC Wyoming Coal Company, LLC is now the owner
18 of the mineral interests, including the coal.

19 And I believe that there has now been a lease of the
20 coal between RAMACO and Brook, which is why the two plaintiffs
21 in this case.

22 I'm not sure if you saw a reply brief we faxed and
23 filed it yesterday. But as we mentioned in the brief, Big Horn
24 Coal Company acknowledges that RAMACO now owns the coal and the
25 mineral -- minerals. And BHC also acknowledges -- Big Horn

1 Coal Company also acknowledges that under the 1954 deed, RAMACO
2 has the right, and I quote, To use as much of the surface of
3 the lands as may be necessary and convenient in order to enable
4 RAMACO to explore, drill, and extract and remove the coal.

5 Now, it's Big Horn's position that the right to use
6 the surface is limited to access of the coal that's under the
7 BHC lands and the adjacent land.

8 It's also Big Horn's position that RAMACO's right to
9 use the surface to mine is limited by certain legal principles
10 such as the accommodation doctrine, and it is also limited by
11 the Wyoming specrum [sic] Section 35-11-406.

12 We also contest the damage limitations that are in
13 the deed, \$10 per acre, I believe, and so forth.

14 Now, the -- the issues I just mentioned may be issues
15 before the Court at some point, but right now they're not.

16 Right now, the only issue that's been raised by
17 RAMACO is whether the mining operations set forth in RAMACO's
18 pending mine permit applications are within RAMACO's right to
19 use as much of the surface of the lands as may be necessary and
20 convenient for exploring, drilling, and extracting the coal.

21 Now, the key words in their requested relief is
22 "pending". Pending means not yet decided. Pending means we
23 are waiting for it to happen or yet to happen.

24 Synonyms for the word pending would include future,
25 contingent, and uncertain. And each of those words appears in

1 the Wyoming Supreme Courts decision in international
2 Association of Firefighters Local, Union No. 279 versus The
3 City of Cheyenne, in which the Court used those words in the
4 following manner: It is well established that a court cannot
5 declare the rights of parties upon a set of facts which is
6 future, contingent and uncertain, i.e., pending.

7 Other synonyms for the word pending would include
8 future or anticipated, where it is used by the Wyoming Supreme
9 Court in White versus Board of Land Commissioners, where the
10 court held, "The declaratory judgment act does not give the
11 courts power to determine future rights or anticipated disputes
12 or controversies, i.e., the Court does not have power to hear
13 pending rights.

14 The Court's jurisdiction under the Declaratory
15 Judgment Act is limited to determining those rights that
16 currently exist. And at the current time RAMACO doesn't have
17 the right to operate a mine.

18 The Wyoming Department of Environmental Quality is
19 the only entity that can give RAMACO and Brook the right to
20 start mining on Big Horn Coal's property.

21 As we pointed out in our brief, that is a lengthy
22 process that will probably take at least a year and maybe more
23 before we know whether RAMACO will be allowed to mine at all,
24 and if so, what operations will be actually be permitted and
25 allowed by Wyoming DEQ.

1 Now, from the standpoint of judicial economy, it
2 makes little sense for us to litigate whether or not RAMACO can
3 use Big Horn's property for a mine that may never happen.

4 From the standpoint of the jurisdictional limitations
5 on the Court, the fact that there is no -- we don't yet know
6 whether RAMACO will be allowed to mine or what they'll be
7 allowed to do is fatal to the jurisdictional requirements of
8 the Wyoming Supreme Court.

9 Any decision that you might render in this case now
10 could be rendered moot. If we take the mining permit and look
11 at the pending proposed operations.

12 If you were to rule based on that, we have no idea a
13 year from now they -- he may say either no, you cannot mine at
14 all, RAMACO, or all those operations you asked for, we don't
15 approve. And so whatever order you enter would have no effect,
16 it would be rendered moot.

17 Because we don't know what mining operations might
18 actually be approved by the DEQ, any ruling you would give at
19 this point particular point in time would be clearly advisory,
20 which is clearly not allowed.

21 The most you could do at this point is say, Well, if
22 the DEQ actually approves RAMACO's plans to do highwall mining,
23 which is also known as coffin pit mining.

24 The most the Court could do is say, Well, if that's
25 allowed it would or would not, however you rule, would be

1 within RAMACO's rights under the 1954 deed.

2 The "if" in that decision is fatal to jurisdiction.
3 The "if" is what shows that there is no relief that can be
4 granted at this time because it renders any decision that you
5 may reach on these hypothetical pending facts, purely advisory
6 and outside the Court's jurisdiction.

7 Now, as I said earlier, Big Horn Coal Company doesn't
8 contest what the deed says. It says what it says.

9 But what the deed says is that RAMACO has the right
10 to use as much of the surface of the lands that may be
11 necessary convenient.

12 The problem with the words like "necessary" and
13 "convenient" is you have to apply them to something, you have
14 to look at -- well, you have to know what you're looking at to
15 determine whether or not it's necessary or convenient, or, as
16 they say, "The devil's in the detail."

17 Here, we don't know all the details because the
18 detail's pending.

19 RAMACO's right to mine is a contingent right. The
20 operations are anticipated. They are not yet vested, they are
21 not yet determined.

22 And until pending rights and pending operations
23 become actual, the Court cannot grant final relief in this
24 case.

25 It's been suggested in the briefs that "I filed this

1 motion", "We filed this motion as a stall tactic." I didn't.

2 Pointing out a lack of subject matter of jurisdiction
3 is not a stall tactic.

4 Pointing out a lack of jurisdiction is not only
5 proper, but I believe it is mandatory, and needs to be raised
6 at the first opportunity, which we did.

7 Now, in RAMACO's reply brief RAMACO raised some
8 issues that they thought maybe the Court would have
9 jurisdiction to hear. They might -- they could probably could
10 bring a quiet title action, or maybe they could limit relief
11 being sought to permitting the deed. I don't know what issues
12 RAMACO might come up with. I only know what RAMACO requested
13 in the complaint as drafted.

14 And that complaint asked for one thing and only one
15 thing, and that's a ruling based on mining operations that have
16 been described in the pending application before DEQ.

17 And for reasons in our brief, and the reason I've
18 just mentioned, that claim for relief in the complaint fails to
19 state a claim upon which relief could be granted at this time.

20 Unless you have any questions, that concludes my
21 comments for the moment.

22 THE COURT: I don't. Thank you.

23 Mr. Wendtland, Mr. Sansonetti, who is responding on
24 behalf of RAMACO?

25 MR. SANSONETTI: Tony is going to take the lead.

REPORTER'S CERTIFICATE

STATE OF WYOMING)
 : SS.
COUNTY OF SHERIDAN)

I, Jeff S. Eaton, do certify that I am a Registered Professional Reporter in and for the State of Wyoming.

That as such reporter, I reported the occasion of the proceedings of the above-entitled matter at the aforesaid time and place.

That the proceeding was reported by me in stenotype using computer-aided transcription consisting of pages 2 through 26 inclusive;

That the same constitutes a true and correct transcription of the said proceedings;

That I am not of kin or otherwise associated with any of the parties herein or their counsel, and that I am not interested in the events thereof.

WITNESS my hand at Buffalo, Wyoming, this 10th day of April, 2015.

Jeff S. Eaton, RPR

Exhibit E

FILED

APR 15 2016

C R O W L E Y | F L E C K PLLP
ATTORNEYS

April 15, 2016

Jim Ruby, Executive Secretary
Environmental Quality Council

VIA HAND DELIVERY

Wyoming Environmental Quality Council
Attn: Jim Ruby
125 W. 25th Street
Herschler Building 1W, Room 1714
Cheyenne, WY 82002

Re: Docket 16-1601: In re Brook Mine Application
Big Horn Coal Co. Response to
Brook Mine Request for Order in Lieu of Consent

Dear Mr. Ruby:

Big Horn Coal Company (BHC) hereby submits its timely response to Brook Mining Company, LLC's (Brook) Petition for Order in Lieu of Consent (Petition) in the above-referenced docket. Because a scheduling conference has been set in this matter for April 20, 2016, this response does not specifically address Brook's request for expedited hearing. BHC respectfully reserves all rights to address scheduling issues during the April 20th conference call.

I. Introduction

BHC is a non-resident, non-agricultural surface landowner entitled to protections afforded by the Environmental Quality Act (EQA) at W.S. 35-11-406(b)(xii).¹ In 1954, BHC purchased surface land and the right to lease and mine the coal under that land from Brook's predecessor, Sheridan-Wyoming Coal Company (SWC). BHC leased and mined coal on the land for more than thirty years. By 1982, BHC had developed facilities which connected the regional coal reserves to the main rail line. For example, BHC had built a bridge across the Tongue River and a rail spur that allowed coal to be hauled on the BNSF main line. Those facilities provided a base from which BHC mined and transported coal leased from SWC and others. Though BHC is not currently actively mining, BHC maintains valuable improvements and infrastructure and has existing rights and obligations pursuant to its existing Mine Permit No. 213-T8. Approximately 370 acres of land encompassed within BHC's existing mine permit overlap with lands included in Brook's mine permit application. Approximately 1,100 acres of BHC surface lands are within the proposed Brook mine permit area.

¹ BHC is wholly owned by LHR Coal, LLC (f/k/a AE Coal, LLC) and LHR Coal, LLC is wholly owned by Lighthouse Resources, Inc. (f/k/a Ambre Energy North America, Inc.)

II. Relevant Facts

By way of background, prior to Brook submitting its mine permit application, AE Coal, LLC, was party to an exploration agreement with Ramaco.² That July 2012 exploration agreement, together with all associated permissions for Ramaco to conduct pilot hole and core drilling and other related mineral exploratory and coal prospecting activities on BHC surface lands, expired by its own terms on July 19, 2014. Upon receiving preliminary mine plans from Ramaco in late 2012, BHC expressed in writing its general support of coal mining in the area and, specifically, its support for Ramaco's proposed mining beneath BHC's surface lands located north of the Tongue River.

Also prior to Brook submitting its mine permit application, on March 13, 2013, BHC consented to Ramaco conducting baseline environmental studies and surveys on certain BHC surface lands. Notwithstanding the March 2013 Landowner's Consent Agreement, on April 9, 2013, Ramaco sent a letter to BHC declaring that the June 28, 1954 Warranty Deed (the 1954 Deed) between its predecessors and BHC provides Ramaco "the legal right to access the surface land for core drilling, pre-permit monitoring or any other pre mining activities" without any additional approval or consent from BHC.³

Ramaco nevertheless provided BHC with revised, but incomplete, mine plans in the Spring of 2013, and with yet another set of maps and a request for surface owner consent in July 2014. Notably, the surface owner consent request and Form 8 that Ramaco provided BHC on July 23, 2014, did not include a complete mine plan and reclamation plan (collectively, "mine and reclamation plan") as required by W.S. 406(b)(xii)(A). Instead, that request was accompanied by just two maps. The first illustrated mine progression blocks; the second illustrated the Brook mine permit boundary and post mine topography. Based on these materials, BHC understood that Brook's rail spur loadout and facilities would be located on the south side of I-90, along the Tongue River toward the Town of Ranchester. BHC sent a letter to Ramaco on October 9, 2014, confirming that Ramaco's proposed activities on BHC lands south of the Tongue River do not conform to BHC's development plans, that BHC "does not consent to the mining and reclamation plan that is being proposed by the Brook Mine," and that BHC further does not agree with Ramaco's continued assertion that it has the right under the 1954 Deed to make reasonable use of BHC's surface lands for mine planning, mining and mine related facilities and

² Brook is the developer and operator of coal and coal mining interests owned by Ramaco Wyoming Coal Co., LLC (Ramaco).

³ This position starkly differed from Ramaco's course of conduct when submitting its Notice of Intent to Explore for Coal By Drilling to DEQ/LQD (Mr. Mark Taylor) on September 21, 2012, in which it referenced the now-expired July 19, 2012 exploration agreement between AE Coal, LLC and Ramaco.

activities without surface owner's consent. Rather than negotiate, Ramaco instead chose to litigate.⁴

BHC received Brook's most recent, incomplete mine and reclamation plan from Brook's consultant, Western Water Consultants Engineering (WWC), on February 5, 2016. WWC's correspondence included a Surface Ownership Request cover letter along with an attached Form 8. BHC's response was requested no later than February 19, 2016. Given BHC's long-standing concerns with Brook's ever-changing plans, BHC responded in a letter dated March 9, 2016, that it would not provide surface landowner consent.

III. The Council should deny the requested order in lieu of consent.

BHC refused to consent to the mine and reclamation plan Brook offered for review on February 5, 2016, and the EQC should deny Brook an order in lieu of BHC's consent to that mine and reclamation plan, for the following reasons:

A. Brook's mine and reclamation plan, as most recently submitted for BHC's consideration, was incomplete and differs significantly from those materials previously provided to BHC and WDEQ/LQD, with no explanation.⁵

Brook's plans have changed significantly with each new set of information BHC received. None of the plans BHC received were complete and Brook has provided no explanation regarding what has changed over time and why, or how the various plans relate to Brook's initial and/or amended mine permit application. BHC did not receive a copy of Exhibit 3-3 – Rail Loadout Facility in the materials it received on February 5, 2016. Moreover, to this day, Brook has failed to outline its operations relative to BHC's activity within the overlapping mine permit area. That failure, together with Brook's otherwise incomplete and ever-changing mine and reclamation plan, stands in direct contrast to the cooperation and agreement contemplated by DEQ/LQD SOP 2.1 and the spirit and intent of W.S. 35-11-406(b)(xii)(A).

B. Brook's mine plan and reclamation plan are not sufficiently detailed to illustrate the full proposed surface use, including proposed route of egress and ingress.

Being a mine permit holder and long-standing mine operator, BHC is knowledgeable of the mine and reclamation plan detail necessary for a surface owner to fully and fairly assess the full scope

⁴ Though not disclosed in Brook's Petition, the extent of Brook's right to use BHC surface lands under the 1954 Deed currently is being litigated pursuant to a Declaratory Judgment Complaint filed by Brook in *Brook Mining Company, LLC v. Big Horn Coal Company*, Civil Action No. CV 2014-372 (Fourth Judicial District Court, Sheridan County).

⁵ The various mine and reclamation plan materials Brook has provided to BHC and WDEQ/LQD also differ from the proposed mine operations Brook has documented with the District Court.

of intended surface use and the foreseeable impacts of that use on the surface landowner's operations. Viewing the materials BHC has received from Brook through the lens of its mining experience, BHC would characterize the Brook mine and reclamation plan as generic, with little more than boilerplate, standardized descriptions. Specific insufficiencies in Brook's mine and reclamation plan include, but are not necessarily limited to the following:

1. The Transportation Network Exhibit 3-1 shows haul roads that terminate in the middle of BHC's permit boundary prior to a loadout and/or facilities location. The first materials BHC received from Ramaco indicated Ramaco would build loadout facilities along I-90 near the BNSF mainline. The next set of materials provided to BHC and the District Court indicated that Ramaco intended to build a new rail spur on BHC-owned surface. The most recent information Ramaco provided to BHC shows haul roads that terminate in the middle of BHC's permit boundary with no loadout or rail facilities in proximity. BHC questions how Brook plans to ship coal to its customers without loading coal onto a train. The location of all anticipated haul roads are material to BHC's consideration of the mine and reclamation plan.

2. Exhibit 3-3 – Railroad Loadout Facility is listed in the Table of Contents, but BHC did not receive a copy of Exhibit 3-3 in the materials it received on February 5, 2016. The text of the materials BHC received says coal will be placed in pit crushers to haul off-site. However, the materials provide no explanation or illustration of where or how that haulage will occur other than the reference to a railroad loadout facility in the table of contents. BHC questions how Brook plans to ship coal to its customers without rail loadout facilities and how Brook's mine permit application can be deemed complete without haul roads leading to a rail loadout facility. This omission is material to BHC's consideration of the mine and reclamation plan.

3. The text of the mine and reclamation plan on page MP-7, Section MP.2 – Mine Facilities, discusses the location of a Change House, Equipment Service Shop, Additional Facilities, Fuel Station, Cistern, Septic Tank and Leach Field. However, none of these facilities are identified on Exhibit MP.2-1. Does Brook intend to provide the locations of these key surface mine facilities for review? These omissions are material to BHC's consideration of the mine and reclamation plan.

C. Brook's proposed use of BHC surface lands will substantially prohibit BHC operations.

Given present coal industry market conditions and the resulting uncertainty as to whether, when, and how Brook's mine and reclamation plans might come to fruition, it is inherently difficult for BHC or the EQC to assess the full scope of impact that Brook's mine and reclamation plan will have on BHC operations. Brook is well aware that BHC owns and controls access to valuable infrastructure and improvements on its surface lands. Namely, BHC surface lands within Brook's proposed mine permit area include an industrial shop, a rail spur facility, and a bridge across the Tongue River (collectively, BHC Facilities).

BHC has existing and planned future uses of its infrastructure and improvements – uses which are supported by surface rights BHC claims pursuant to a 1983 Release Agreement under which Ramaco's predecessor granted specific surface protections and property rights to BHC.⁶ BHC currently leases its shop facility and is negotiating to lease its rail spur to BNSF. In addition, BHC could in the future develop coal it leases from the State of Wyoming – proven economic reserves of 40 million tons. BHC would use its surface lands and BHC Facilities to access the coal and for a rail load-out facility. BHC's future plans to mine the state coal are as reasonably expected to occur as are Brook's mine plans.

As BHC understands Brook's most recent mine plan, Brook will disturb approximately 460 acres near BHC Facilities. By removing and storing topsoil and overburden related to its Phase I highwall mining, Brook would restrict access to and utilization of BHC Facilities, as well as BHC grazing land and additional BHC land north of the Tongue River, for more than twenty (20) years. Accordingly, Brook's use would substantially prohibit BHC operations.

D. Brook's proposed reclamation plan would not reclaim the surface to BHC's proposed future use as soon as feasibly possible.

Brook's mining plan contemplates beginning highwall mining on BHC surface lands, directly south of BHC's shop. The disturbance area appears to encompass all of the BHC property south of the Tongue River except for approximately 20-40 acres around the BHC Facilities. The overburden removal sequence for the initial highwall trench TR-1, is proposed to begin twelve (12) months following permit approval. The spoil backfilling sequence for TR-1 is twelve (12) months after overburden removal. The topsoil replacement sequence is contemplated to take an additional twenty (20) years after TR-1 is backfilled. Brook's reclamation plan would result in the disturbance of BHC surface lands and restricted access to BHC Facilities for 20-30 years. Brook's reclamation plan not only fails to reasonably accommodate BHC's existing land use, it also effectively blocks BHC efforts to secure approval for reasonably foreseeable future land use.

E. Brook has overstated the scope of its legal authority.

⁶BHC asserts that the 1983 Release Agreement, not the 1954 Deed, controls the surface rights of BHC and Ramaco. The 1983 Release Agreement states in relevant part: "SWC expressly consents and agrees to allow BHC to leave intact any and all permanent structures, stockpiles, or spoil materials (referred to herein collectively as 'structures and stockpiles') currently located in Sections 9, 10, 14, 15, 21, and the N1/2 of Section 22 of T. 57 N., R. 84 W., 6th P.M. ... as more specifically identified in Schedule D attached hereto...." The scope and effect of the 1983 Release Agreement is among the issues to be determined by the District Court in *Brook Mining Company, LLC v. Big Horn Coal Company*, Civil Action No. CV 2014-372.

Brook repeatedly asserts in its Petition that it not only owns the coal but also has broad rights to use BHC surface as necessary or convenient for mining pursuant to the 1954 Deed. Interestingly, however, nowhere in its Petition does Brook disclose that the 1954 Deed, together with the 1983 Release Agreement, is the subject of active litigation. (See footnotes 4 and 6, above.) BHC does not contest Brook's ownership of coal deposits subject to its mine permit application. BHC does, however, ardently dispute Brook's assertion that Brook's proposed mine and reclamation plan contains permitted uses of the surface under the 1954 Deed.

Issues pertaining to the scope of use, if any, permitted by the 1954 Deed are subject to the District Court's jurisdiction. As of this date, the District Court has denied both Brook's and BHC's competing motions for summary judgment; no formal discovery plans have been made and no trial date has been set. For these reasons, and those set forth in the BHC letters to WDEQ/LQD dated March 6, 2015, and to Mr. Andrew Kuhlmann, Senior Assistant Attorney General, dated December 16, 2015 (attached hereto as Exhibits A and B, respectively), it is wholly inappropriate and disingenuous for Brook to suggest that the EQC should give any weight or authority whatsoever to the existence of, or its alleged rights under, the 1954 Deed. BHC's surface owner rights under W.S. 35-11-406(b)(xii) are independent of any interpretation or operation of the 1954 Deed. By Brook's own admission, the Wyoming Attorney General has concluded the same.

F. Brook has not posted a bond as required by W.S. 35-11-416 and any order in lieu of consent should be conditioned upon the prior posting of an adequate surface owner protection bond.

Pursuant to W.S. 35-11-416, in addition to the performance bond Brook must post to secure reclamation costs, Brook also must execute a bond with the State for the use and benefit of BHC and other split estate surface owners within the proposed mine permit boundaries "in an amount sufficient to secure the payment for any damages to the surface estate, to the crops and forage, or to the tangible improvements of the surface owner." The statute makes clear that the surface owner protection bond must be in place prior to issuance of a mine permit. The statute does not otherwise specify when the surface owner protection bond must be posted or by what process the administrator will determine the bond amount.

The statute does specify that the amount of the surface owner protection bond "shall be commensurate with the reasonable value of the surrounding land, and *the effect of the overall operation of the landowner,*" and that "[f]inancial loss resulting from disruption of the surface owner's operation shall be considered as part of the damage." (Emphasis added.) The surface owner protections offered by the bond and the determination of the bond amount closely align with certain required elements for an order in lieu of consent (e.g. the effect of the proposed use on the surface owner's operations and the extent to which reclamation accommodates approved future uses as soon as feasibly possible). Accordingly, BHC requests that if the EQC should

conclude that an order in lieu of consent is warranted, any such order be issued only upon Brook's posting of the requisite surface owner protection bond, and that the parties have an opportunity to present further evidence to the administrator and/or EQC to support what bond amount is necessary to provide the surface owner statutory protections, and when such bond should be posted.

IV. Conclusion

The applicable provisions of the EQA say nothing about balancing the rights of mineral owners and surface owners, veto power, or economic leverage as Brook has suggested. Instead, the EQA explicitly requires that Brook's mine permit application include an instrument of consent from the surface landowner, even a non-resident or non-agricultural landowner, if different from the owner of the mineral estate. W.S. 35-11-406(b)(xii). If Brook cannot obtain all necessary surface landowner consent to its proposed mining plan or reclamation plan, or both, the EQC shall issue an order in lieu of consent if, and only if, it finds the statutory elements have been met. *Id.* The EQA, W.S. 35-11-416, further mandates that "a permit shall not be issued without the execution of a bond or undertaking to the state, whichever is applicable, for the use and benefit of the surface owner or owners of the land, in an amount sufficient to secure the payment for any damages to the surface estate, to the crops and forage, or to the tangible improvement of the surface owner." For the reasons stated above, Brook has not satisfied the statutory elements for an order in lieu of consent. Nor has Brook posted a bond for the use and benefit of BHC in an amount sufficient to protect BHC's interests.

BHC will defend its surface landowner rights under the EQA to: (1) receive and have an adequate opportunity to review the complete and accurate mine and reclamation plan that Brook provided to the WDEQ/LQD in support an approved draft mine permit for publication, and which is sufficiently detailed to assess the scope and duration of impact on BHC operations; (2) ensure that Brook's proposed use will not substantially prohibit BHC's operations; (3) ensure that Brook's proposed reclamation will accommodate approved future use of BHC surface as soon as feasibly possible; (4) ensure that Brook is not permitted to use the 1954 Deed to expand its rights as a mine permit applicant under the EQA; and (5) ensure that payment for foreseeable damages to BHC surface lands from Brook's proposed mine operations are appropriately secured. BHC looks forward to a full and fair opportunity at hearing to demonstrate to the EQC that an order in lieu of consent should not issue in this case, including the right to present additional objections, evidence and exhibits, and to cross examine witnesses.

Sincerely,



Lynne Boomgaarden
of Crowley Fleck PLLP

Enclosures

cc: Brook Mining Company, c/o Isaac N. Sutphin, P.C., Holland & Hart, LLP (via email)
Padlock Ranch, c/o Mistee Elliott and Hal Corbett, Lonabaugh & Riggs, LLP (via email)
Dr. David Bagley, Chairman – Wyoming Environmental Quality Council, c/o Jim Ruby
(via hand delivery)
Todd Parfitt, Director – Wyoming Department of Environmental Quality, c/o Jim Ruby
(via hand delivery)

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March 6, 2015

Department of Environmental Quality
Land Quality Division
Attn: Mr. Alan Edwards, Deputy Director and Acting Administrator
122 West 25th Street
Herschler Building
Cheyenne, WY 82002

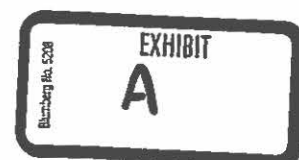
Re: Concerns Regarding Brook Mining Mine Permit Application and Exploratory
Drilling Activity within Big Horn Coal Co. Mine Permit Area:
Permit No. 213-T8

Dear Mr. Edwards:

As you are aware, Brook Mining Company, LLC ("Brook Mining")¹ submitted an application for a permit to mine, TFN # 62/025, to the Land Quality Division of the Wyoming Department of Environmental Quality ("DEQ/LQD") on October 31, 2014 ("Brook Mining Application"). My client, Big Horn Coal Company ("BHC")², did not consent to the mine plan and reclamation plan that Brook Mining provided to BHC for review because the proposed activities will unreasonably interfere with BHC's extensive surface infrastructure improvements and its existing use and development plans for the area, including but not limited to the exercise of BHC's rights and obligations under its *existing* Mine Permit No. 213-T8. As you are also aware, Brook Mining, through its agents, representatives and/or contractors, has recently undertaken drilling activity pursuant to a Coal Notification on surface lands owned by BHC in the N1/2N1/2, Section 21, Township 57 North, Range 84 West. BHC was never notified of, did not consent, and, due to its regulatory obligations under Mine Permit No. 213-T8, strenuously objects to any and all such activity without at least having been provided notice and a plan of operations. This letter serves to document BHC's legal

¹ Brook Mining is the developer and operator of coal and coal mining interests owned by Ramaco Wyoming Coal Co., LLC ("Ramaco").

² BHC is wholly owned by AE Coal, LLC and AE Coal LLC is wholly owned by Ambre Energy North America, Inc.



and operational concerns with the Brook Mining mine plan, reclamation plan, permit application adjudication and exploratory drilling activity.

Background

Prior to submission of the Brook Mining Application, AE Coal, LLC, was party to an exploration agreement with Ramaco. That exploration agreement, together with all associated permissions for Ramaco to conduct pilot hole and core drilling and other related mineral exploratory and coal prospecting activities on BHC surface lands, expired by its own terms on July 19, 2014. Also prior to submission of the Brook Mining Application, on March 13, 2013, BHC consented to Ramaco conducting baseline environmental studies and surveys on certain BHC surface lands. Notwithstanding the March 2013 Landowner's Consent Agreement, on April 9, 2013, Ramaco sent a letter to BHC declaring that a 1954 deed between its predecessors and BHC provides Ramaco "the legal right to access the surface land for core drilling, pre-permit monitoring or any other pre mining activities" without any additional approval or consent from BHC. This position starkly differed from Ramaco's course of conduct when submitting its Notice of Intent to Explore for Coal By Drilling to DEQ/LQD (Mr. Mark Taylor) on September 21, 2012, in which it referenced the now-expired July 19, 2012 exploration agreement between AE Coal, LLC and Ramaco.

BHC has expressed in writing to Brook Mining its general support of coal mining in the area and, specifically, its support for Brook Mining's proposed mining beneath BHC's surface lands located north of the Tongue River. However, on October 9, 2014, BHC sent a letter to Ramaco confirming that Ramaco's proposed activities on BHC lands south of the Tongue River do not conform to BHC's development plans, that BHC "does not consent to the mining and reclamation plan that is being proposed by the Brook Mine," and that BHC does not agree with Ramaco's assertion that it has the right under the 1954 deed to make reasonable use of BHC's surface lands for mine planning, mining and mine related facilities and activities without surface owner's consent. The extent of Brook Mining's right to use BHC surface lands under the 1954 deed currently is being litigated pursuant to a Declaratory Judgment Complaint filed by Brook Mining in *Brook Mining Company, LLC v. Big Horn Coal Company*, Civil Action No. CV 2014-372, and will be determined by the Fourth Judicial District Court for Sheridan County, Wyoming.³

³ In its district court complaint, Brook Mining also reserved the right to condemn BHC's property, including its surface rail and bridge infrastructure. Brook Mining's apparent intent to condemn BHC's existing surface infrastructure is curiously inconsistent with the Brook Permit Application, which proposes to mine under the existing surface infrastructure, thereby rendering that valuable infrastructure useless.

BHC's Surface Owner Rights under W.S. 35-11-406(b)(xii)

DEQ/LQD has no authority to adjudicate property rights disputes. Conversely, the District Court's determination of Brook Mining's rights under the 1954 deed has no bearing on BHC's rights as a non-resident, non-agricultural landowner under W.S. § 35-11-406(b)(xii). Ramaco admitted this point in its letter to Ambre Energy dated April 9, 2013, wherein Randall W. Atkins, Ramaco CEO, asserted Ramaco's rights under the 1954 deed and further stated,

Ambre, as a surface owner, has the right at the appropriate time to review our plans and consent, or not consent. If Ambre refuses to offer its consent to a compliant mine and reclamation plan, Ramaco can, and will, petition the Wyoming Environmental Quality Council (EQC) for an order in lieu of consent.

Despite acknowledging BHC's statutory rights, following BHC's refusal to consent to the mine plan and reclamation plan Brook Mining provided BHC to review (which as noted below was different from the mine plan and reclamation plan Brook Mining submitted to DEQ/LQD with its mine permit application), Brook Mining apparently provided the 1954 deed to DEQ/LQD in lieu of BHC's statutory right of consent. See Adjudication, Appendix A Index, Brook Mining Application. BHC admits that it does not possess the right of consent to entry by definition under W.S. 35-11-406(b)(xi), and by virtue of the surface use reservation in 1954 deed. Nevertheless, *nothing* in the Wyoming surface coal mining statutes permits a mine permit applicant to utilize a deed, with a general reservation of surface rights, to strip a surface owner under W.S. 35-11-406(b)(xii) of its rights to *review* a compliant mine and reclamation plan and to *refuse to consent* to such plan, or to *exempt* a mine permit applicant from its obligation to petition the EQC and provide sufficient evidence upon which the EQC can make the findings necessary under W.S. 35-11-406(b)(xii)(A)-(E) to support an order in lieu of consent.

According to W.S. 35-11-406(b)(xii), the EQC shall issue an order in lieu of consent if it finds that (A) the mining plan and the reclamation plan have been submitted to the surface owner for approval; (B) the mining plan and reclamation plan are detailed so as to illustrate the full proposed surface use, including proposed routes of egress and ingress; (C) the use does not substantially prohibit the operations of the surface owner; (D) the proposed plan reclaims the surface to its approved future use, in segments if circumstances permit, as soon as feasibly possible; and (E) for surface coal mining operations, that the applicant has the legal authority to extract coal by surface mining methods. Absent a specific exception in the statute, it is not reasonable to infer that the Wyoming Legislature intended that a deed executed and recorded long before enactment of Wyoming's surface coal mining statutes, by parties who no longer own the minerals or the surface, should negate the EQC's statutory obligation to consider, among other things, whether a mine plan proposed in 2014 would substantially prohibit the present surface owner's operations.

Federal surface coal mining statutes allow a mine permit applicant to submit a conveyance that *expressly grants or reserves the right to extract the coal by surface mining methods* in lieu of written consent from the surface owner. *See* 30 U.S.C.A. § 1260 (b)(6) (“SMCRA”). Wyoming’s surface coal mining statutes, which preceded SMCRA, contain no such provision, and despite adopting other post-SMCRA amendments, the Wyoming legislature has never seen fit to adopt a similar conveyance in lieu of a consent provision. In *Belle Fourche Pipeline Co. v. Wyoming*, 766 P.2d 537, 548 (Wyo. 1988), the Wyoming Supreme Court noted that “[e]ven though this provision is included in the SMCRA, surface owner consent was not one of the provisions specifically required to be included in a state program.” *Id.* According to the court, “Wyoming went even further than the SMCRA in its effort to provide more specific protection of the surface owner” by imposing a qualified requirement that a non-resident, non-agricultural surface owner be “granted the right to a hearing if they object to the proposed mining activities, after which the EQC still could issue an order in lieu of consent.” *Id.* at 547-48. The requirement set forth in W.S. 35-11-406(b)(xii) is clear and unambiguous. Brook Mining cannot avoid this requirement by providing DEQ/LQD reservation language in a 1954 deed.

Overlapping Permits

As expressly stated in LQD’s Coal Standard Operating Procedure No. 2.1 – Coal Permit Content and Review Procedures Relating to Abutting and Overlapping Coal Permit Area Boundaries, “overlapping permit boundaries create unusual permitting, field inspection, annual reporting, and reclamation performance bonding challenges.” According to SOP No. 2.1 both permittees have joint responsibility and control over shared lands and *“there must be cooperation and agreement between the two permittees. Both permits must have mutually compatible Mine and Reclamation Plans that outline the respective operations within the overlapping permit area.”* SOP 2.1, Section II.D. Brook Mining has been uncooperative. There is no agreement between Brook Mining and BHC; and the mine and reclamation plans provided by Brook Mining to BHC failed entirely to outline the respective operations of Brook Mining and BHC within the overlapping permit area. Indeed, the mine plan Brook Mining provided to BHC for review differs from that presented in the Brook Mine Permit Application.⁴ These varied representations of Brook Mining’s plans stand in direct contrast to the cooperation and agreement contemplated by SOP 2.1.

⁴ Similarly, the map Brook Mining attached to its written offer to purchase 452 acres of BHC’s land is not the same as a supplemental map Brook mining filed in the lawsuit – the map Brook Mining filed with the court shows an area of high wall mining in the north half of Section 22, while the map enclosed with the offer letter does not show any mining in Section 22, but shows the Phase I rail spur being built over the high wall mining area. The map submitted to the DEQ with the Brook Mining permit application shows high wall mining in the north half of Section 22 as well.

SOP 2.1, Section III.B.1.b., Permit Adjudication Section, further provides that a new permit application "must contain a written statement from Permittee 2 that all application elements addressing shared land are acceptable to Permittee 2." It appears that the Brook Mine Permit Application Adjudication Section contains no such written statement from BHC.

SOP 2.1, Section III.B.1.c., Mine Plan, further provides that the Mine Plan for each permit containing an overlapping permit area must include a separate section for each permit area boundary configuration that includes a brief discussion of how the mining operations coincide for the joint use areas. The Brook Mine Permit Application Mine Plan provided to BHC for review contained no such discussion.⁵

SOP 2.1, Section III.B.1.d., Reclamation Plan, further provides that the Reclamation Plan for each permit containing an overlapping permit area must include a separate section for each permit area boundary configuration that includes a map specifying the reclamation responsibility of each permittee. The Brook Mine Permit Application Reclamation Plan provided to BHC for review contained no such map. Nor did the Brook Mine Permit Application provided to BHC for review address the respective performance bond obligations of BHC and Brook Mining within the overlapping permit boundaries as required by SOP 2.1, Section III.B.1.e.

SOP 2.1, Section II.B., Definitions, states that where overlapping permit areas occur, the LQD's position is that both permittees have joint responsibility and control over shared lands. BHC's Mine Permit No. 213-T8 expressly provides that BHC shall conduct their operation in a manner which prevents violation of any applicable State or Federal law. If a violation is found to exist in the overlapping permit area, it is uncertain what effect this will have on BHC, BHC's mining permit, and BHC's insurance coverage, especially if the violation cannot be

⁵ The proposed "joint use" of greatest concern to BHC is that area south of the Tongue River and adjacent to BHC's existing shop facilities. The area was mined in the early to late 1970's and has since been backfilled with unconsolidated, saturated spoil materials with a direct connection to the Alluvial Valley Floor (AVF) of the Tongue River. Mining the Carney and Masters coal seams in this area would require a significant amount of de-watering and discharges into the Tongue River, causing catastrophic damage to the hydrologic balance. Additional monitoring wells in the immediate vicinity of the proposed coffin pit trench cut would be necessary to quantify the amount of water that would be intercepted.

In addition, Brook Mining has proposed stockpiling material on BHC lands in the immediate vicinity of wetlands and an AVF, without consulting with BHC regarding alternate locations that would be more environmentally friendly and would also accommodate BHC business development strategies.

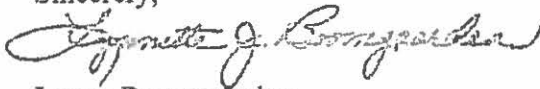
Finally, Brook Mining's proposed mine plan would render reclamation of the historic Placheck Pit (AML Project No. 171 – Northeast Wyoming Coal) on BHC surface lands impossible.

directly associated with one permittee's actions. BHC has many concerns surrounding its potential liability for Brook Mining's activities performed in the overlapping permit area. Additionally, although SOP 2.1 does not specifically address LQD-authorized activities conducted pursuant to a Coal Notification within an existing mine permit boundary, BHC asserts that cooperation between the parties is equally important under those circumstances as the same concerns regarding liability arise for activities performed by Brook Mining pursuant to their Coal Notification in BHC's mine permit area.

Requested Action

BHC sincerely appreciates LQD's responsiveness to BHC's inquiries to date. For the reasons stated above, BHC respectfully requests that DEQ/LQD (1) expressly acknowledge BHC's right, pursuant to W.S. 35-11-406(b)(xii), to review and consent to the mine plan and reclamation plan Brook Mining submitted to DEQ/LQD; (2) absent BHC's consent to a compliant mining plan and reclamation plan, require Brook Mining to petition to the EQC for an order in lieu of consent; and, (3) require that Brook Mining provide BHC (i) a list of wells and plan of operations, and (ii) prior notice of entry, under any existing or future Coal Notification that permits activities within the boundaries of BHC Mine Permit No. 213-T8.

Sincerely,



Lynne Boomgaarden
Crowley Fleck, PLLP

cc: Andrew Kuhlmann
Mark Rogaczewski

CROWLEY | FLECK PLLP
ATTORNEYS

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December 16, 2015

Mr. Andrew Kuhlman
Senior Assistant Attorney General
Kendrick Building
2320 Capitol Avenue
Cheyenne, WY 82002
andrew.kuhlmann@wyo.gov

Via Electronic and U.S. Mail

Re: Continued Concerns Regarding Lack of Surface Owner Consent and other
Representations Related to the Brook Mining Mine Permit Application

Dear Mr. Kuhlmann:

As you are aware from prior communications, my client, Big Horn Coal Company ("BHC"), did not consent to the mine plan and reclamation plan that Brook Mining/Ramaco (collectively, "Ramaco") provided to BHC for review because the proposed activities will unreasonably interfere with BHC's extensive surface infrastructure improvements and its existing use and development plans for the area, including but not limited to the exercise of BHC's rights and obligations under its *existing* Mine Permit No. 213-T8. BHC documented its legal and operational concerns with the Ramaco mine plan, reclamation plan, permit application adjudication and exploratory drilling activity in a letter dated March 6, 2015, to Mr. Alan Edwards and copied to you.

BHC recently became aware of certain assertions made by Ramaco to the Wyoming Attorney General and the Department of Environmental Quality Land Quality Division ("DEQ/LQD") in a letter to you from Mr. Tom Sansonetti dated October 13, 2015, and in Ramaco's Round 2 permit review responses.



Accordingly, today's letter is being provided for the purpose of reaffirming BHC's concerns and position regarding the necessity of obtaining the surface owner's consent to mining as required by the Wyoming Environmental Quality Act ("WEQA").

First, notwithstanding Mr. Sansonetti's assertion on behalf of Ramaco that "[t]he 1983 release agreement does not affect any of the rights reserved in the 1954 Deed," and "[t]he 1954 Deed controls the surface use mining rights of Ramaco relative to both Big Horn Coal and Padlock Ranch," the Wyoming district court denied Ramaco's and BHC's competing motions for summary judgment as to those assertions by an order dated September 21, 2015. This matter remains the subject of active litigation before the Fourth Judicial District Court for Sheridan County, Wyoming, in *Brook Mining Company, LLC v. Big Horn Coal Company*, Civil Action No. CV 2014-372. As of this date, no formal discovery plans have been made and no trial date has been set. BHC continues to ardently dispute Ramaco's assertion that it has the right under the 1954 deed to use BHC's surface lands to conduct all "necessary or convenient" coal mining activities and that the Ramaco Mine Plan application contains permitted uses of the surface under the 1954 Deed.

Second, as outlined in our March 6, 2015 letter to Mr. Edwards, BHC's surface owner rights under W.S. 35-11-406(b)(xii) are independent of any interpretation or operation of the 1954 deed because *nothing* in the WEQA permits a mine permit applicant to utilize a deed, with a general reservation of surface rights, to strip a surface owner under W.S. 35-11-406(b)(xii) of its rights to *review* a compliant mine and reclamation plan and to *refuse to consent* to such plan, or to *exempt* a mine permit applicant from its obligation to petition the Environmental Quality Council ("EQC") and provide sufficient evidence upon which the EQC can make the findings necessary under W.S. 35-11-406(b)(xii)(A)-(E) to support an order in lieu of consent. Ramaco erroneously relies on *WYMO Fuels, Inc. v. Edwards*, 723 P.2d 1230 (Wyo. 1986) to dispute this fact (see Adjudication, Response AG 1-Round 1). The Supreme Court in *WYMO Fuels* addressed the narrow issue of "whether condemnation of a way of necessity for a railroad spur track and a mine truck haul road ... dispenses with the statutory requirement that a resident or agricultural landowner or a surface landowner consent to mining operations." *Id.* at 1231. In answer to this narrow question, the Supreme Court "afford[ed] efficacy to the condemnation statute," by holding that two parties whose lands had been condemned were no longer surface owners and accordingly, "were left with no interest which required protection pursuant to the Wyoming Environmental Quality Act." *Id.* at 1236. The *WYMO Fuels* decision has no application here. BHC's fee surface interests have not been condemned and neither Ramaco nor DEQ/LQD may ignore BHC's surface consent rights under the WEQA.

For these reasons, BHC respectfully renews its request that DEQ/LQD expressly acknowledge BHC's right, pursuant to W.S. 35-11-406(b)(xii), to review and consent to any mine plan and reclamation plan that Ramaco submits to DEQ/LQD for consideration. Absent BHC's consent to a compliant mining plan and reclamation plan, BHC requests that DEQ/LQD require Ramaco to petition to the EQC for an order in lieu of consent.

Big Horn Coal Company Continued Objection to Brook Mining Company, LLC Permit
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Page 3

Finally, Ramaco has failed to provide BHC (either directly or through its court filings) any mine and reclamation plans it has submitted to DEQ/LQD for review. To the best of BHC's knowledge, Ramaco still has not outlined the respective operations of Ramaco and BHC within the overlapping permit area. Moreover, Ramaco's mine plans as represented to the court appear to differ substantially from its filings with DEQ/LQD. As previously stated, these varied representations of Ramaco's plans stand in direct contrast to the cooperation and agreement contemplated by DEQ/LQD SOP 2.1 and undermine any credible foundation upon which Ramaco's permit application might succeed.

Thank you for your consideration of BHC's concerns. Please contact me if you have questions or would like to discuss this matter further.

Sincerely,


Lynne Boomgaarden
Crowley Fleck, PLLP

Exhibit F

For the following reasons, BHC does not approve of Petitioner's proposed mine and reclamation plans, does not consent to Petitioner entering on to BHC lands as proposed in such plans, and respectfully requests that the EQC decline to enter an order in lieu of BHC's consent.

I. Introduction

BHC is a non-resident, non-agricultural surface landowner entitled to protections afforded by the Wyoming Environmental Quality Act (WEQA) at W.S. § 35-11-406(b)(xii).¹ In 1954, BHC purchased surface land and the right to lease and mine the coal under that land from Petitioner's predecessor, Sheridan-Wyoming Coal Company (SWC). BHC leased and mined coal on the land for more than thirty years. By 1982, BHC had developed facilities which connected the regional coal reserves to the main rail line. For example, BHC had built a bridge across the Tongue River and a rail spur that allowed coal to be hauled on the BNSF main line. Those facilities provided a base from which BHC mined and transported coal leased from SWC and others. Though BHC is not currently actively mining, BHC maintains valuable improvements and infrastructure, leases its facilities to third parties for commercial use, and has existing rights and obligations pursuant to its existing Mine Permit No. 213-T8. Approximately 370 acres of land encompassed within BHC's existing mine permit overlap with lands included in Petitioner's mine permit application. Approximately 1,100 acres of BHC surface lands are within Petitioner's proposed mine permit area.

Petitioner provided BHC with incomplete mine plans in the Spring of 2013, and with yet another incomplete set of maps and a request for surface owner consent in July 2014. The surface owner consent request Petitioner provided BHC in July 2014 did not include a complete mine plan and reclamation plan (collectively, "mine and reclamation plans"). In response to Petitioner's 2014 consent request, BHC sent a letter to Petitioner in early October 2014, confirming that Petitioner's proposed activities on BHC lands south of the Tongue River do not conform to BHC's development plans, that BHC "does not consent to the mining and reclamation plan that is being proposed by the Brook Mine," and that BHC further does not agree with Petitioner's continued assertion that it has the right

¹ BHC is wholly owned by LHR Coal, LLC (f/k/a AE Coal, LLC) and LHR Coal, LLC is wholly owned by Lighthouse Resources, Inc. (f/k/a Ambre Energy North America, Inc.)

under the 1954 deed to make reasonable use of BHC's surface lands for mine planning, mining and mine related facilities and activities without surface owner's consent. Rather than negotiate a resolution of BHC's concerns, Petitioner instead chose to litigate.²

BHC later received mine and reclamation plans from Petitioner's consultant, Western Water Consultants Engineering (WWC), on February 5, 2016. WWC requested BHC's response no later than February 19, 2016. Given BHC's long-standing concerns with Petitioner's ever-changing plans and the impact of those plans on its existing facilities and mine permit obligations and liabilities south of the Tongue River, BHC responded in a letter dated March 9, 2016, that it would not provide surface landowner consent.

Petitioner filed a Request for Order in Lieu of Consent & Request for Hearing on March 16, 2016 ("Petition"). The EQC received evidence on Petitioner's Request for an Order in Lieu of Consent on August 17-18, 2016. Following the close of evidence, on August 26, 2016, Petitioner filed certain revisions to its mine and reclamation plans with Mr. B.J. Kristiansen, Wyoming Department of Environmental Quality ("WDEQ"), Land Quality Division ("LQD"), in part "as a result of the Order in Lieu of Consent hearing." These revisions are outside of the record evidence presented at hearing. Nevertheless, in the interest of efficiency BHC has considered the revisions and addresses them in its argument and proposed findings of fact and conclusions of law, below.

II. The EQC should deny the requested order in lieu of consent.

The Wyoming Environmental Quality Act ("EQA"), W.S. § 35-11-406(b)(xii)(A)-(E), provides that if the mine permit applicant can provide substantial evidence to support EQC findings that five (5) statutory elements have been satisfied, the EQC shall issue an order in lieu of the consent of a nonagricultural, nonresidential surface landowner. In this

² The extent of Petitioner's right to use BHC surface lands under the 1954 Deed currently is being litigated pursuant to a Declaratory Judgment Complaint filed by Petitioner in *Brook Mining Company, LLC v. Big Horn Coal Company*, Civil Action No. CV 2014-372 (Fourth Judicial District Court, Sheridan County).

case, the EQC should deny Petitioner an order in lieu of BHC's consent to Petitioner's mine and reclamation plans, even as those plans were revised following the closing of evidence at hearing, because Petitioner has failed to meet its burden of providing sufficient evidence to establish at least two of the five statutory requirements: W.S. § 35-11-406(b)(xii)(C) and (D).

A. Petitioner's recently revised mine and reclamation plans are internally inconsistent and are not sufficiently detailed to illustrate the full proposed surface use of BHC surface in accordance with W.S. § 35-11-406(b)(xii)(B).

W.S. § 35-11-406(b)(xii)(B) requires "[t]hat the mining plan and the reclamation plan is detailed so as to illustrate the full proposed surface use including proposed routes of egress and ingress." Nothing in this provision suggests, as Petitioner asserts, *see* Tr. Vol. I, p. 56, ll. 19-24 and p. 57, ll. 6-14, that the standard of detail required to satisfy this element is the same standard the WDEQ/LQD applies when reviewing the mine permit application for completeness. Indeed Mr. B. J. Kristiansen, WDEQ/LQD, explained to the EQC at hearing that the agency does not evaluate a mine plan from the surface owners' "side of it." Tr. Vol. I, p. 171, ll. 11-12. Rather, WDEQ/LQD looks at the mine plan from the applicant's perspective to make sure the applicant has met all of the completeness requirements. The surface owners have to evaluate the mine and reclamation plans based on their knowledge. Tr. Vol., p. 171, ll. 11-18.

Neither did the legislature provide any statutory language that would lessen the level of detail required or exempt Petitioner from providing sufficient detail of its full proposed surface use of BHC surface, so long as Petitioner included a statement in its mine plan that it would not obstruct the use of or access to BHC's existing facilities. The statute does not require, and the EQC should not expect, BHC to simply trust that Petitioner will not obstruct BHC's surface use or access. Any such trust would be particularly misplaced where, as here, Petitioner has refused to negotiate a commercially reasonable compromise, and has chosen instead to litigate in an attempt to secure the broadest possible rights to use BHC surface.

Turning to an evaluation of the information provided in Petitioner's revised mine and reclamation plans, the revisions Petitioner made to those plans on August 26, 2016 relevant to BHC surface lands can be summarized as follows:³

- Text at MP-7 to MP-10 revised "to show non obstructed use of BHC shop, bridge, and rail siding."
- Exhibit MP.1-1 revised "to show fencing, roads, and access road."
- Exhibit MP.3-1 revised "to show additional roads."

Petitioner's witness Mr. Barron testified at hearing that a mine permit applicant tries to keep the text of the proposed mine plan general and puts the detail in the mine plan figures, exhibits, and tables, understanding that a "picture is worth a thousand words." Tr. Vol. I, p. 68, ll. 5-25. In the context of Mr. Barron's testimony, and notwithstanding Petitioner's recent plan revisions, Petitioner's revised mine and reclamation plans suffer from the following internal inconsistencies and lack of detail:

- The mine plan text at MP.1.9 now states that "[t]he Brook Mine will not obstruct Big Horn Coal's (Permit 231-T8 [sic]) Shop, Bridge, and Rail Road Siding as they exist in Big Horn Coal's 2015 Annual report. An access road equivalent to the existing improved road will be provided if proposed stockpiles or pits should restrict the existing access as shown on Exhibit MP.1-1." See Exhibit A at p. 4.
 - This revision limits Petitioner's assurance of no obstruction to the use of BHC facilities in 2015 rather than current uses and operations as provided by the Environmental Quality Act.
 - Petitioner's assurance of no obstruction is not reflected on the more detailed mine plan Exhibit MP.1-1, which continues to request mine permit approval of a 400+ acre surface disturbance area (as shown by pink cross-hatch) across BHC's entire Permit 213-T8 area, to include BHC's shop and rail road siding. Brook Ex. 1.

³The August 26, 2016, post-hearing revisions to Permit to Mine Application TFN 6 2/025 BHC received from Petitioner are attached hereto as Exhibit A.

○ Neither the revised text nor mine plan Exhibit MP.1-1 illustrate how, as a practical matter given the size and location of the proposed stockpiles and pits that could restrict the existing access, Petitioner would be able to relocate BHC's access road on BHC surface. Nor does the text or mine plan Exhibit MP.1-1 indicate that Petitioner has, or would be able to obtain access rights from an adjoining surface owner, if necessary to provide BHC continuing access to its facilities.

• The text at MP.2.1 of the mine plan, Exhibit A at p. 4, states that the "approximate locations of mine facilities are shown on Exhibit MP.2-1. As facilities are designed and constructed they will be added to the exhibit." Other than the Mine Permit and Identification Sign, mine plan Exhibit MP.2-1 indicates no other mine facilities to be located on BHC surface. Brook Ex. 1. However, Mr. Barron testified that it is possible the personnel and equipment facilities could be located on BHC surface lands. Tr. Vol. I, p. 131, l. 2. Mr. Barron also testified that the coal preparation facilities identified in Petitioner's air quality permit application analysis dated December 11, 2015, Padlock Ex. 18, are not currently located on mine plan Exhibit MP.2-1. Tr. Vol. I, p. 118, ll. 14-15. Petitioner did not revise the text at MP.2.1 or mine plan Exhibit MP.2-1 to more specifically describe the possible location of these facilities in its submission on August 26, 2016.

• WDEQ/LQD's Coal Standard Operating Procedure No. 2.1 – Coal Permit Content and Review Procedure Relating to Abutting and Overlapping Coal Permit Area Boundaries ("SOP 2.1"), Section III.B.1.c. requires the mine plan for all new permit applications containing an overlapping permit area boundary to include a separate section for each permit area boundary configuration which, among other things, "includes a brief discussion of how the mining operations coincide for the joint use areas." The reclamation plan for all new permit applications containing an overlapping permit boundary must include a separate section for each permit area boundary configuration which, among other things, includes a map that specifies the reclamation responsibility of each permittee. Petitioner's revised mine and reclamation plans do not include these SOP 2.1 requirements. *See* Exhibit A and Brook Exs. 1 and 2; *see also* Tr. Vol. II, p. 15, ll. 12-25, and p. 16, ll. 1-2.

- Petitioner did not revise the mine plan Table of Contents to remove the reference to Exhibit 3-3 – Railroad Loadout Facility, notwithstanding Mr. Atkins’ representation at hearing that Petitioner has changed its plans and instead of mining coal and transporting it by rail to some utility someplace, “we will probably end up trucking coal to clients that are either contiguous or on our site.” Tr. Vol. I, p. 198, ll. 19-25, p. 199, ll. 1-2; *see also* Exhibit A and Brook Ex. 1 at MP-vii.

Petitioner’s revised mine plan also continues to stand in contradiction of current representations by Petitioner to the WDEQ Air Quality Division (“WDEQ/AQD”), *see* Padlock Ex. 18 at p. 4, Fig. 2-2, and p. 15, and to the District Court, *see* BHC Exs. 5A and 5D, regarding Petitioner’s intent to construct and use a rail loadout facility. Contrary to representations in the revised mine plan, but consistent with Petitioner’s representations to WDEQ/AQD and the court, Mr. Barron’s testimony at hearing was qualified to state that Petitioner will not disturb BHC’s shop, bridge or rail siding *as it stands today*. Tr. Vol. I, p. 87, ll.16-18 (emphasis added). Mr. Atkins similarly qualified his testimony to state that Petitioner “will *probably* end up trucking coal to clients that are either contiguous or on our site.” Tr. Vol. I, p. 198, ll. 19-25, and p. 199, ll. 1-2 (emphasis added).

Under these circumstances, BHC cannot rely on Petitioner’s recent addition to its mine plan of a bald, unsupported statement that Petitioner “will not obstruct Big Horn Coal’s (Permit 231-T8 [sic]) Shop, Bridge, and Rail Road Siding as they exist in Big Horn Coal’s 2015 Annual report.” Petitioner has no binding commitment to BHC and has preserved in its mine plan the opportunity for WDEQ/LQD approval to disturb the surface of BHC’s entire existing mine permit area as shown in mine plan Exhibit MP.1-1. Such approval of MP.1-1 could allow Petitioner to easily modify its permit to expand Petitioner’s use of BHC surface lands following the EQC’s decision in this matter, without then having to satisfy the surface owner protections afforded by W.S. § 35-11-406(b)(xii).

These internal inconsistencies and lack of detail, considered in conjunction with Petitioner’s contradictory filings and qualified testimony, demonstrate Petitioner’s failure to comply with W.S. § 35-11-406(b)(xii)(B). Moreover, the EQC should acknowledge that

the lack of detail, internal inconsistencies, contradictory filings and qualified testimony make it extremely difficult for BHC to fully assess the extent to which Petitioner's proposed use of BHC surface lands will substantially prohibit BHC operations as required by W.S. § 35-11-406(b)(xii)(C).

B. Petitioner's revised mine and reclamation plans, viewed from the surface owner's perspective, indicate that the proposed mining and reclamation activity will substantially prohibit BHC operations. W.S. § 35-11-406(b)(xii)(C).

W.S. § 35-11-406(b)(xii)(C) requires Petitioner to demonstrate that its proposed use of BHC surface "does not substantially prohibit" BHC operations. Mr. Jordan Sweeney, BHC Corporate Environmental Manager, testified at hearing that BHC holds an existing mine permit subject to a reclamation performance bond in the amount of \$742,000. Tr. Vol. II., p. 275, ll. 15-17. BHC's mine permit is in compliance and the reclamation performance bond is related to BHC's industrial shop, rail spur and load-out facility. Tr. Vol. I, p. 275, ll. 11-20. BHC considers its shop, rail spur and load-out facility, and the bridge across the Tongue River as valuable assets. Tr. Vol. I, p. 276, ll. 23-25. BHC currently leases its shop to a welding fabrication tenant and to company employees for storage. Tr. Vol. I, p. 279, ll. 6-13. BHC recently entered into a rail storage agreement with a customer of its Decker, Montana mine for use of its rail spur facility for rail storage. Tr. Vol. I, p. 276, l. 25; p. 277, ll. 1-14. BHC is in the process of obtaining the necessary approvals from WDEQ/LQD and Sheridan County for the continued long-term rental and use of these facilities. Tr. Vol. I, p. 283, ll. 3-25, and p. 284, ll. 1-3; BHC Ex. 8. BHC's continued operations of its surface facilities is highly dependent on Petitioner's avoidance of those facilities and BHC's continued access to those facilities. Tr. Vol. II, p. 16, ll. 13-17.

The evidence of record and the information that is included in Petitioner's revised mine and reclamation plans illustrates that Petitioner's proposed mining and reclamation activity will more likely than not, substantially (i.e. "to a great extent") prohibit (i.e. "prevent") BHC's current surface operations. More specifically:

- Mine plan Exhibit MP.1-1, Brook Ex. 1, illustrates by pink cross-hatch, that Petitioner is requesting that WDEQ/LQD approve a surface disturbance area of over 400 acres, inclusive of BHC's existing permit area and BHC's presently leased shop and rail spur facilities. Neither Exhibit MP.1-1 nor the accompanying text provide any detail regarding when, where, or how Petitioner can or will reduce the disturbance area so as not to substantially prohibit BHC operations. BHC cannot reasonably rely on Petitioner's unsupported statements that it will not obstruct the use of BHC facilities and will provide an alternative access road if needed as the basis on which BHC can continue to contract for and conduct operations at its surface facilities. BHC must base its business decisions and contractual obligations on the potential impacts as set forth in the mine and reclamation plans. Tr. Vol. II, p. 20, ll. 8-19. Accordingly, WDEQ/LQD approval of Petitioner's requested disturbance area would substantially prohibit BHC's surface operations.

- Mine plan Exhibit MP.2-1 indicates no personnel or equipment facilities will be located on BHC surface. Brook Ex. 1. Mr. Barron's testimony, however, contradicts the representation on Exhibit MP.2-1 in that he stated it is possible the personnel and equipment facilities could be located on BHC surface lands. Tr. Vol. I, p. 131, l. 2. Mr. Barron also testified that the coal preparation facilities identified in Petitioner's air quality permit application analysis dated December 11, 2015, Padlock Ex. 18, are not currently located on MP.2-1. Tr. Vol. I, p. 118, ll. 14-15. Should any of these facilities be located on BHC surface, they could substantially prohibit use of and access to BHC facilities and operations.

- Should Petitioner later seek to modify its permit to construct rail load out facilities near BHC's existing rail spur consistent with representations it made to WDEQ/AQD and the District Court, such rail load out facilities would necessarily restrict BHC's access to and use of its rail spur.

- Mine plan Exhibit MP.3-1, Brook Ex. 1, illustrates Petitioner's intent to use BHC's existing access road for ingress and egress, yet also illustrates proposed high wall trench cuts that will transect BHC's existing access road. Absent additional information to illustrate how Petitioner would be able to relocate BHC's access road on BHC surface or that Petitioner would be able to obtain access rights from an adjoining surface owner, BHC

cannot reasonably rely on Petitioner's statement it will provide the access necessary for continued operations at BHC facilities. Absent a binding, enforceable commitment that Petitioner can and will relocate BHC's existing access road, it is reasonable to conclude from the record evidence that Petitioner's proposed operations will substantially prohibit BHC and its customers access to and use of BHC facilities.

- Nothing in Petitioner's mine and reclamation plans specifies the respective reclamation responsibilities of BHC and Petitioner or the coordinated joint use of the surface as contemplated by WDEQ/LQD SOP 2.1. Absent specific representations regarding Petitioner's and BHC's joint use of the surface within the overlapping mine permit boundaries, Petitioner's operations could prevent BHC from complying with its existing mine permit obligations and possibly subject BHC to regulatory and civil liabilities.

Petitioner, therefore, has failed to prove the required element set forth at W.S. § 35-11-406(b)(xii)(C).

III. Any EQC Finding of Fact and/or Conclusion of Law Regarding Petitioner's "legal authority to extract coal by surface mining methods" is for the Limited Purpose of Applying W.S. § 35-11-406(b)(xii) and Does Not Constitute an Adjudication of Any Private Property Rights at Issue in *Brook Mining Company, LLC v. Big Horn Coal Company*, Civil Action No. CV 2014-372 (Fourth Judicial District Court, Sheridan County).

W.S. § 35-11-406(b)(xii)(E) requires, for surface coal mining operations, that the Petitioner "has the legal authority to extract coal by surface mining methods." Petitioner relies on a 1954 deed as the source of its legal authority to extract coal by surface mining methods. Tr. Vol. I, pp. 108-11. BHC does not dispute that Petitioner holds coal rights beneath BHC surface pursuant to that deed; however, BHC asserts that a 1983 release agreement between Petitioner's and BHC's predecessors precludes Petitioner from legally accessing certain surface lands to extract coal by surface mining methods. Tr. Vol. II, p. 29 at lines 18-25. The relative surface rights of BHC and Petitioner on those certain lands are being litigated in District Court in *Brook Mining Company, LLC v. Big Horn Coal*

Company, Civil Action No. CV 2014-372 (Fourth Judicial District Court, Sheridan County).

By Petitioner's own admission, the Wyoming Attorney General rejected Petitioner's argument that Petitioner "did not need the consent of [BHC]" because "the 1954 deed already gave it the right to mine coal as well as the right to use the surface as is 'necessary or convenient' to mine coal." Petition, p. 2. In rejecting Petitioner's argument, the Attorney General advised Petitioner "to request an order in lieu of consent." Petition, pp. 2, 4. Thus, the relevant question for the EQC to answer is, what showing of "legal authority" did the legislature intend to require in order for Petitioner to obtain an order in lieu of BHC's consent from the EQC?

Regardless whether the EQC determines that the 1954 deed satisfies Petitioner's burden of demonstrating legal authority necessary to obtain an order in lieu of BHC's consent, it is important that the EQC expressly acknowledges in its conclusions of law that EQC's statutory authority does not extend to the application of Wyoming common law to interpret deeds, assignments or other contracts between BHC and Petitioner. The EQC's authority is limited to that granted to it by the Wyoming State Legislature. *Exxon Mobil Corp. v. Wyoming Dept. of Revenue*, 266 P.3d 944, 951 (Wyo. 2011). The Legislature has given EQC broad authority to "hear and determine all cases or issues arising under the laws, rules, regulations, standards or orders issued or administered by" the Wyoming Department of Environmental Quality, Land Quality Division. W.S. § 35-11-112(a); *see also Platte Dev. Co. v. Env'tl. Quality Council*, 966 P.2d 972, 975 (Wyo. 1998). Consequently, the EQC's determination of "legal authority" is for the limited purpose of deciding whether the statutory requirement under W.S. § 35-11-406(b)(xii)(E) has been met. EQC's determination cannot patently constitute an adjudication of the property rights dispute between BHC and Petitioner pending in District Court.⁴

⁴ This conclusion is reinforced by the language of the federal surface coal mining statutes which, contrary to the WEQA, allows a mine permit applicant to submit a deed that grants or reserves the right to mine coal by surface mining methods in lieu of written

IV. Conclusion

In submitting this Memorandum and Proposed Findings of Fact and Conclusions of Law, BHC does not waive and hereby reserves all rights as an interested party to file written objections and request a hearing before the EQC under W.S. § 35-11-406(k), all rights to protection under W.S. § 35-11-416(a), and all rights, arguments and defenses in *Brook Mining Company, LLC v. Big Horn Coal Company*, Civil Action No. CV 2014-372.

The WEQA explicitly requires Petitioner to include an instrument of consent from the surface landowner, even a non-resident or non-agricultural landowner, if different from the owner of the mineral estate, in its mine permit application. W.S. § 35-11-406(b)(xii). If Petitioner cannot obtain all necessary surface landowner consent, the EQC shall issue an order in lieu of consent if, and only if, it finds the statutory elements have been met. *Id.* For the reasons stated, Petitioner is not entitled to an order in lieu of surface owner consent and its mine permit application should therefore be denied. BHC respectfully submits the following Proposed Findings of Fact and Proposed Conclusions of Law as supported by evidence of record and as pertaining specifically to the elements set forth in W.S. § 35-11-406(b)(xii)(B), (C), and (E).

Proposed Findings of Fact

1. Detail in the mine plan Petitioner presented to BHC for review, mine plan Exhibit MP.1-1, Brook Ex. 1, shows the prospective impacted area to include all of BHC surface within its existing mine permit 213-T8, in Sections 15, 21, and 22, Township 57 North, Range 84 West, Sheridan County, Wyoming.

2. Petitioner's assurance in its revised mine plan dated August 26, 2016, that it will not obstruct Big Horn Coal's shop, bridge and rail road siding as they exist in Big Horn

consent from the surface owner. *See* 30 U.S.C.A. § 1260(b)(6)(B) ("SMCRA"). Under SMCRA, if a deed proffered in lieu of surface owner consent does not expressly grant the right to extract coal by surface mining methods, "the surface-subsurface legal relationship shall be determined in accordance with State law: *Provided*, That nothing in this chapter shall be construed to authorize the regulatory authority to adjudicate property rights disputes." *Id.* at § 1260(b)(6)(C).

Coal's 2015 Annual Report, Exhibit A, p. 4, is not reflected on, and is contradicted by, mine plan Exhibit MP.1-1. Brook Ex. 1.

3. Petitioner's mine plan fails to illustrate how Petitioner can feasibly provide an access road equivalent to the existing improved road if proposed stockpiles or pits should restrict the existing access as shown on mine plan Exhibit MP.1-1, as Petitioner stated it would do in its revised mine plan dated August 26, 2016. Exhibit A at p. 4; Brook Ex. 1 at mine plan Exhibit MP.1-1.

4. Personnel and equipment facilities not presently illustrated on mine plan Exhibit MP.2-1 may be constructed on BHC surface lands. Tr. Vol. I, p. 131, l. 2.

5. Petitioner's mine and reclamation plans do not include information required by WDEQ/LQD Standard Operating Procedure 2.1 – Coal Permit Content and Review Procedure Relating to Abutting and Overlapping Coal Permit Area Boundaries, Section III.B.1.c. Exhibit A; Brook Ex. 1; Tr. Vol. II, p. 15, ll. 12-25, and p. 16, ll. 1-2.

6. Petitioner's mine and reclamation plans contradict current representations Petitioner has made to WDEQ/AQD and to the District Court with regard to Petitioner's intent to construct a rail load out facility on BHC surface lands. Brook Ex. 1; Padlock Ex. 18, BHC Exs. 5A and 5C.

7. The Wyoming Department of Environmental Quality, Land Quality Division, did not evaluate Petitioner's mine and reclamation plans from the surface owners' perspective when determining whether Petitioner had met all of the completeness requirements. Tr. Vol. I., p. 171, ll. 11-12.

8. Petitioner holds coal rights beneath BHC surface lands. Tr. Vol. II, p. 29 at ll. 18-19.

9. Petitioner relies on a 1954 deed as the source of its legal authority to extract coal by surface mining methods. Tr. Vol. I, pp. 108-11.

10. BHC relies on a 1983 release agreement to deny Petitioner access to its surface to extract coal by surface mining methods. Tr. Vol. II, p. 29 at ll. 18-25.

11. Petitioner's and BHC's respective rights under the 1954 deed and 1983 release agreement are the subject of active litigation: *Brook Mining Company, LLC v. Big Horn Coal Company*, Civil Action No. CV 2014-372 (Fourth Judicial District Court, Sheridan County). BHC Ex. 5A.

Proposed Conclusions of Law

1. Petitioner's mine plan and reclamation plans, as revised on August 26, 2016, lack the detail required by W.S. § 35-11-406(b)(xii)(B) to illustrate Petitioner's full proposed use of BHC surface lands and to ensure BHC unobstructed use of its shop, bridge and rail siding, as stated in the revised plans.
2. Petitioner's proposed use of BHC surface lands, as detailed in mine plan Exhibit MP.1-1, will substantially prohibit BHC's current commercial operations at the shop and rail siding facilities, as well as access across BHC's bridge to BHC lands north of the Tongue River.
3. For purposes of issuing an order in lieu of consent under W.S. § 35-11-406(b)(xii), and for those purposes only, Petitioner has demonstrated sufficient legal authority to extract coal by surface mining methods. The Environmental Quality Council does not adjudicate private property rights as between parties to a proceeding under W.S. § 35-11-406(b)(xii).

DATED: September 23, 2016.

By 
Lynnette Boomgaarden (WSB # 5-2837)
Crowley Fleck PLLP
237 Storey Boulevard, Suite 110
Cheyenne, WY 82009
(307) 426-4100
Attorney for Respondent
Big Horn Coal Company

CERTIFICATE OF SERVICE

I hereby certify that on September 23, 2016, I served a true and correct copy of the foregoing by United States mail, postage prepaid and addressed to the following:

Haultain Corbett
Mistee Elliott
Lonabaugh and Riggs, LLP
50 East Loucks Street
Suite 110
PO Drawer 5059
Sheridan, WY 82801-5059
hal@lonabaugh.com

Thomas L. Sansonetti
Isaac N. Sutphin, P.C.
Jeffrey S. Pope
Holland & Hart LLP
2515 Warren Ave, Suite 450
PO Box 1347
Cheyenne, WY 82003-1347
tlsansonetti@hollandandhart.com
insutphin@hollandandhart.com
jspope@hollandandhart.com


Lynnette Boomgaarden

Exhibit A

Respondent Big Horn Coal Company's Memorandum and
Proposed Finding of Fact and Conclusions of Law
(8 Pages)

August 26, 2016

Mr. Jordan Sweeney
Lighthouse Resources Inc
170 South Main Street Suite 700
Salt Lake City UT 84101
j.sweeney@lhr-inc.com

****Via Electronic Delivery****

RE: Brook Mine- Revision to Mine Plan and Reclamation Plan TFN 6 2/025

Dear Mr. Sweeney:

On behalf of RAMACO LLC, WWC Engineering is providing Lighthouse Resources Inc copies of revisions to the mine plan and reclamation plan that have been submitted to Wyoming Department of Environmental Quality Land Quality Division WDEQ/LQD August 26, 2016. The revisions are a result of issues raised during the EQC hearing August 17 & 18, 2016 and include mitigation components in the mine plan and reclamation plan that is greater detail than required by WDEQ/LQD.

Please contact, the undersigned at WWC Engineering- (ph: 307-672-0761) if you have any questions or comments regarding this request.

Sincerely,



Jeff Barron, P.E.
Project Engineer

JB/hjr

Attachment: as noted

K:\Sheridan\RAMACO\13139\WDEQ_LQD_comments_rnd_6\Cover_letter_Lighthouse_8_26_2016.docx

Exhibit A
Page 1

August 26, 2016

Mr. B.J. Kristiansen
Wyoming Department of Environmental Quality
2100 W. 5th Street
Sheridan, WY 82801

RE: Permit To Mine Application TFN 6 2/025

Dear Mr. Kristiansen:

On behalf of RAMACO LLC, WWC Engineering is submitting the attached revisions to the mine plan and reclamation plan as a result of the Order in Lieu of Consent hearing held August 17 & 18, 2016 and ongoing negotiations with Padlock Ranch.

Two copies of the change of index and supplemental information have been included for WDEQ/LQD staff to review.

Please contact, Randall Atkins (RAMACO), or Jeff Barron (WWC Engineering) if you have any questions or comments regarding this submittal.

Sincerely,



Jeff Barron, P.E.
Project Engineer

INDEX SHEET FOR MINE PERMIT AMENDMENTS OR REVISIONS

Page 1 of 1
Date August 25, 2016
TFN 6 2/025

MINE COMPANY NAME: RAMACO, LLC.

MINE NAME: Brook Mine
PERMIT NO. TFN 6 2/025

Statement: I, Jeff Barron, an authorized representative of RAMACO, LLC. declared that only the items listed on this and all consecutively numbered Index Sheets are intended as revisions to the current permit document. In the event that other changes inadvertently occurred due to this revision, those unintentional alterations will not be considered approved. Please initial and date.

NOTES: 1) Include all revision or change elements and a brief description of, or reason for, each revision element.

2) **This Change Index is for only those changes made during Round 4a Comment Response.**

VOLUME NUMBER	PAGE, MAP OR OTHER PERMIT ENTRY TO BE REMOVED	PAGE, MAP OR OTHER PERMIT ENTRY TO BE ADDED	DESCRIPTION OF CHANGE
Volume XI	MP-7 to MP-7 (Mine Plan Text tab)	MP-7 to MP-7 (Mine Plan TOC tab)	Update Text to show non obstructed use of BHC shop, bridge, and rail siding.
Volume XI	MP-10 to MP-10 (Mine Plan Text tab)	MP-10 to MP-10 (Mine Plan Text tab)	Update Text to describe fencing
Volume XI	Exhibit MP.1-1	Exhibit MP.1-1	Revise exhibit to show fencing, roads, and access road
Volume XI	Exhibit MP.3-1	Exhibit MP.3-1	Revise exhibit to show additional roads
Volume XII	Exhibit RP.3-1	Exhibit RP.3-1	Revise exhibit to show restoration of water network

Any structure within the Brook Mine Permit Area that is directly affected by mining activities will be properly abandoned and removed or relocated before mining activities commence. Relocation and/or abandonment criteria and procedures will be established to minimize significant impacts to the postmining land use plan.

If mining operations disrupt power or phone lines, the lines will be relocated and put into service before the old lines are abandoned. This will be done to minimize power or phone interruptions.

Relocation of roadways will be coordinated with Sheridan County or the road owner for design and relocation procedures. Interruption to traffic flow will be mitigated through previously formulated plans.

The Brook Mine will operate in conjunction with Taylor Quarry (Permit No. SP-757). The Taylor Quarry Permit Boundary is shown on Exhibit MP.1-1. The mine will work with Taylor Quarry to minimize impacts on Taylor Quarry's operation. Details regarding dual permitted areas are provided in Section MP.22.

The Brook Mine will not obstruct Big Horn Coal's (Permit 231-T8) Shop, Bridge, and Rail Road Siding as they exist in Big Horn Coal's 2015 Annual report. An access road equivalent to the existing improved road will be provided if proposed stockpiles or pits should restrict the existing access as shown on Exhibit MP.1-1.

MP.2 MINE FACILITIES

MP.2.1 Personnel and Equipment Facilities

The approximate locations of mine facilities are shown on Exhibit MP.2-1. As facilities are designed and constructed they will be added to the exhibit.

MP.2.1.1 Administration Building

The administration building will be located in Sheridan. The administration building will contain offices, a conference room, and training facilities.

MP.2.1.2 Change House and Equipment Service Shop

The change house includes offices, shower facilities for employees, and a large meeting area and equipment service facility. Waste oil and lubricants will be temporarily stored in the equipment service facility until they can be transported to an offsite disposal facility. The equipment facility area will

emulsions, water gels, and slurry explosives will be stored separately from detonators, initiator products, and ANFO. Locations of explosive storage will be according to regulations.

MP.2.4 Power Transmission and Communication Lines

Electrical power will be transmitted to the mine property by a 3-phase 4160-Volt line.

Electric power will be purchased from Powder River Energy Corporation. Power distribution and electrical equipment will be constructed to comply with applicable federal, state, and local codes. Power lines within the Brook Mine Permit Area will be constructed to minimize impacts on raptors, as discussed in the Plan to Minimize Adverse Impacts on Fish and Wildlife.

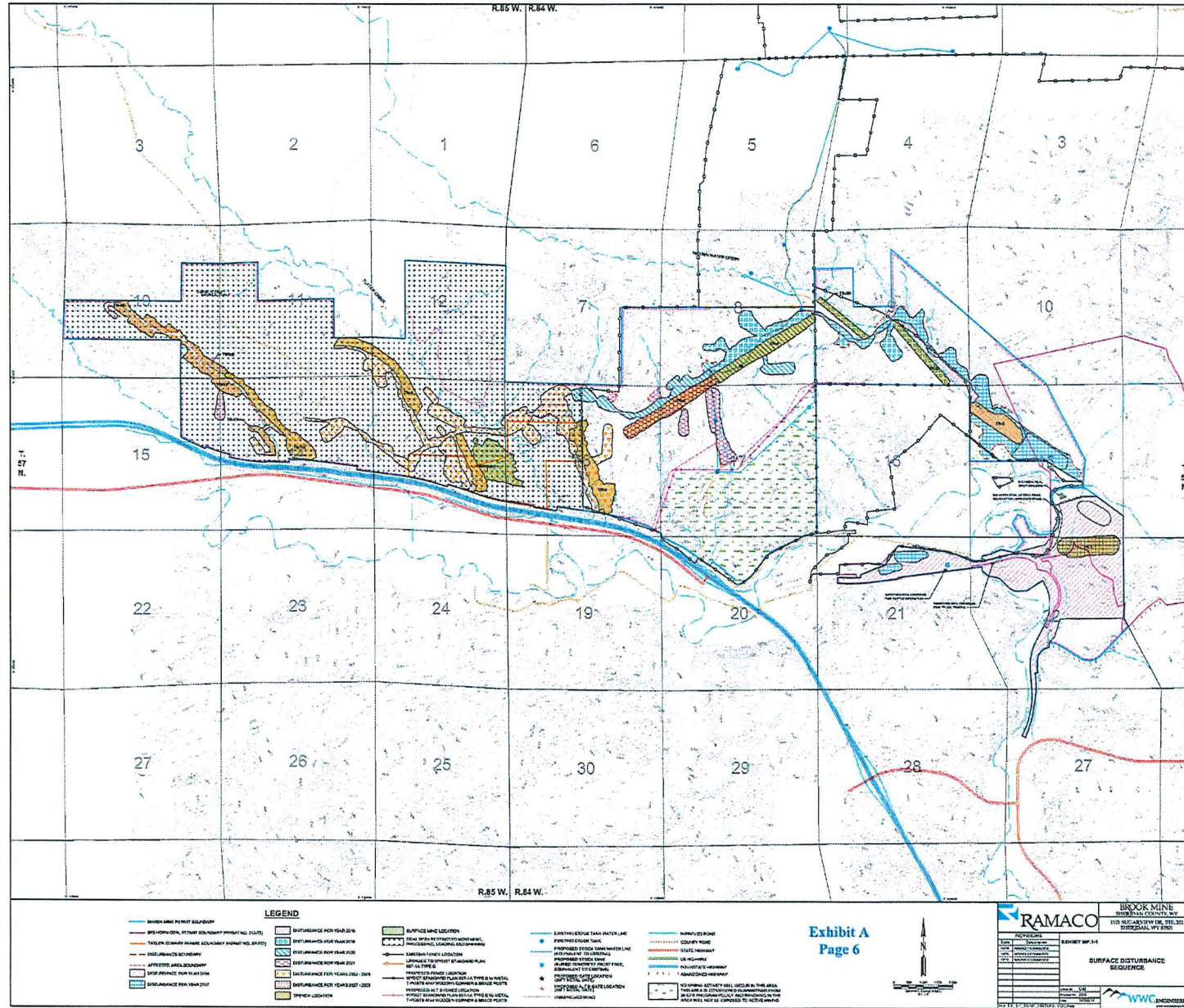
Telephone service will be installed by tapping into a local communications carrier. Communications within the Permit Area will be by mobile business band radios.

MP.2.5 Stockpiles

Separate topsoil and overburden stockpiles will be required for reclamation activities. The design of stockpiles is discussed in Section MP.4. Stockpile locations are shown on Exhibit MP.4-3.

MP.2.6 Access Control Features

The mine will control access to the Brook Mine to protect the health and safety of the mine workforce, general public, wildlife, and livestock. A guardhouse will be installed at the entrance to the Brook Mine. Fencing will be constructed around mining activities to prevent wildlife, livestock, and the general public from mistakenly entering as shown on Exhibit MP.1-1. Access will be allowed for existing cattle operations as needed in the NWNE of section 21 T57N R84W as shown on Exhibit MP.1-1. Fencing construction will follow recommendations found in WDEQ/LQD Guideline Number 10 and/or WYDOT standard 607-1A: Fencing, Signs and markers will be placed to alert the general public to the active mining area. Signs, markers, and buffer zones are discussed in Section MP.12. Locations of access control features are shown on Exhibit MP.2-1.



From: Jay Gilbertz
To: [Shannon Anderson](#); [Isaac Sutphin](#); lboomgaarden@crowleyfleck.com; cgregersen@crowleyfleck.com; todd.parfitt@wyo.gov; andrew.kuhlmann@wyo.gov; james.larock@wyo.gov; [Jim Ruby](#); [Thomas Sansonetti](#); [Jeffrey S. Pope](#)
Subject: RE: In re Brook Mine Application (17-4802) - Fisher Response to MTD
Date: Monday, March 20, 2017 2:43:59 PM
Attachments: [Fishers" Response To Brook Mine Mtn. To Dismiss.pdf](#)

Attached is the Fishers' response to the Motion to Dismiss

Jay A. Gilbertz

Yonkee & Toner, LLP
P.O. Box 6288
Sheridan, WY 82801
(307) 674-7451 (Phone)

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jgilbertz@yonkeetoner.com
Attorney for Objectors,
Mary Brezik-Fisher and David Fisher

**BEFORE THE ENVIRONMENTAL QUALITY COUNCIL
STATE OF WYOMING**

IN RE BROOK MINE APPLICATION)	
	)	DOCKET 17-4802
TFN 6 2-025)	
)	

**FISHERS' RESPONSE TO BROOK MINE'S MOTION TO DISMISS
OBJECTOR FISHERS' PETITION FOR A CONTESTED CASE HEARING**

Mary Brezik-Fisher and David Fisher ("Fishers"), by and through their undersigned counsel, hereby submit their Response to Brook Mining Company, LLC's ("Brook Mine") Motion To Dismiss Fishers' Petition For A Contested Case Hearing.

I. Summary of the Fishers' Response:

The Motion to Dismiss is easily disposed of for very simple reasons under Wyoming Statute §35-11-406. Brook Mine's motion focuses on a circular discussion of the timing set by the statute for filing objections to the mine plan and the twenty-day time frame for a hearing. The goal of this discussion is to convince the EQC that somehow the Objectors have not timely brought this matter before the EQC and by extension Brook Mine is simply

entitled to have its coal mining permit granted. The fatal trouble with Brook Mine's position is that it ignores the steps mandated by the statute as a *prerequisite* to issuance of any such permit.

In the event any interested party files a written objection (which clearly happened¹) then the statute provides that Brook Mine is only entitled to have its application for a mining permit proceed *after* either 1) the DEQ holds a informal conference *or* 2) the objectors have been provided with a contested case hearing before the EQC. Neither of these two things have happened and as a result Brook Mine is not entitled to have its application proceed until one of them does. Should the EQC accept Brook Mine's invitation to dismiss the petitions without either of these two things happening, then the statutory requirements for issuance of the permit will not have been met. As a result, Brook Mine would be, as a matter of law, precluded from having any permit issued. Brook Mine's only option under those circumstances would be to start the publication process anew. The EQC must decline Brook's invitation to proceed into a procedural blind alley.

1

The Fishers timely submitted their written objections to the mine plan to the Administrator of the Land Quality Division as required by Wyo. Stat. 35-11-406 and as the published public notices directed them to do. A copy of the Fishers' Objection is attached hereto as Appendix 1. (In Fishers' objections they raised a concern about a potential conflict of interest relative to Administrator Kyle Wendtland. Fishers have subsequently been informed that Kyle Wendtland has been fully recused from participation in this matter. Assuming this to be true, this topic will not be at issue in the contested case hearing. Fishers did not imply or intend to imply any impropriety by Kyle Wendtland or his brother Anthony Wendtland).

II. The EQC Must Deny Brook Mine's Motion to Dismiss:

A. Wyoming Statute §35-11-406 Requires that After Objections are Filed that the DEQ Hold an Informal Meeting or that the EQC Hold a Contested Case Hearing.

Section 35-11-406(k) provides that after interested persons timely submit written objections the Director of the DEQ may hold an informal conference if one is requested by the objecting parties. It is undisputed that multiple parties, including the Fishers, filed timely objections and requested an informal conference. However, the language of § 35-11-406 provides that the Director can decline to hold an informal conference, in which case the objector's concerns are to be addressed in a full contested case "public hearing" before the EQC. The statute is unequivocal in requiring that any timely objections must be addressed in either an informal conference or a public hearing "conducted as a contested case in accordance with the Wyoming Administrative Procedures Act."

Consequently, after timely objections, either one or both of these procedures can be afforded to the Objectors, but under no circumstances does the statute contemplate or allow a permit moving forward if *neither* one of these necessary steps has occurred. Yet, that is precisely what Brook Mining Company, LLC asks the EQC to sanction by virtue of its motions to dismiss against the objectors.

Importantly, in the event of timely objections such as those lodged in this case, §35-11-406(p) only allows the Director to render a decision on the application after the informal conference or after findings of fact and a decision by the EQC. Consequently, providing the

Objectors with one of these procedures is a mandatory condition precedent to the issuance of a permit. The Director lacks and will continue to lack any authority under the statute to act upon Brook Mine's application until after one of these two things happens.

For this reason, Brook Mine argues itself into a dead-end. If the EQC were to grant the motion to dismiss, the conditions precedent to issuing a permit will not have been met and Brook's mine application stalls and must be begun anew. Ironically, Brook Mine will not be entitled to complain about this result as the problem is one of its own request and making.

B. Brook Mining's Argument that the Objectors Were Obligated to Demand a Contested Case Hearing Prior to the End of the Objection Period is Nonsensical.

Through a rather distorted argument Brook Mine attempts to create a procedural loophole that will allow it to obtain a mining permit without going through the statute's mandated process of having public objections heard in either an informal conference or a contested case hearing. The entire argument pivots on a contention that the Objectors were not only obligated to submit their written objections during the objection period, but also demand a contested case hearing *prior to* the end of that period. This contention has no support in the statute, any case law and is contrary to any logical and reasoned assessment.

The Fishers and other interested parties were first given their opportunity to voice their objections and concerns to the DEQ after Brook Mine published and presented its statutory notice during the Christmas holidays of December, 2016. Prior to that publication,

both the DEQ and most particularly Brook Mine, refused to listen to the concerns of any interested person.

The published notice stated that “written objections” were to be delivered to the “*Administrator of the Land Quality Division . . . before the close of business January 27, 2017.*”² This aspect of the notice is in accordance and harmony with Wyo. Stat. §35-11-406(k) which states that interested persons are to raise their complaints through presenting “written objections”. Nowhere in either the notice published by Brook Mine nor in the statutory language is there support for Brook Mine’s current argument that complaining parties were required to both file written objections and demand a contested case hearing during the objection period. Indeed, the statute provides just the opposite and states that based upon the timely written objections the matter would then be addressed by the DEQ informally or by the EQC formally.

Brook Mine’s argument hinges on the fatally flawed assumption that in order to obtain a contested case hearing the Objectors were required to request such a hearing before the close of business on January 27, 2017 (the deadline for submitting only objections). There is no legal support for this proposition in the notices provided, the controlling statutory language of §35-11-406 or any case law. It is quite simply a fantasy. The

² Brook Mine’s Notice states “*The Director may hold an informal conference if requested, hear the complaint and take action on the application in accordance with the Department’s Rules of Practice and Procedure. The complainants shall have a right of appeal to the Environmental Quality Council where the complaint will be heard a second time.*” (See copy of Notice attached as Appendix 2).

Objectors were not even entitled to demand a contested case proceeding in that time frame because the DEQ had the discretion to conduct an informal meeting.

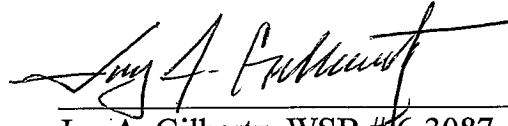
The earliest any deadline for requesting a contested case could have started would be the first date the Objectors were made aware they would not be provided the informal conference which they had properly requested. At the absolute earliest, this would have been the date the Director denied the Objectors' request for that informal conference. However, the date the Director denied the request for an informal conference was simultaneous with the date the initial contested case hearing was initiated. As a result, the Objectors were advised by this procedural step that they would be given a contested case hearing before the EQC (which was docketed for February 13 and 14, 2017). There is no need to demand something that has already been given.

Due to procedural concerns, the EQC dismissed the initial proceedings and instructed that any Objector that wished to avail themselves of a contested case hearing with the EQC could then do so. In this fashion the EQC sought to avoid a situation where a person filing an objection was compelled to participate in a contested case hearing simply by virtue of filing an objection. Only after the EQC dismissed the initial proceedings on February 22, 2017 did there become a need to request a contested case hearing. Hence the date from which any deadline to file a demand for a contested case can only be measured from and begin upon February 22, 2017. Under any calculation all the Objectors have timely made that request and Brook Mine's Motions to Dismiss must be denied.

WHEREFORE, the Fishers hereby request that the EQC deny Brook Mining LLC's
Motion to Dismiss.

DATED this 20th day of March, 2017.

YONKEE & TONER, LLP



Jay A. Gilbertz, WSB #6-3087

Attorney for Objectors

Mary Brezik-Fisher and David Fisher

319 West Dow Street

P.O. Box 6288

Sheridan, WY 82801

Telephone: (307) 674-7451

Telefax: (307) 672-6250

CERTIFICATE OF SERVICE

I, Jay A. Gilbertz, hereby certify that on the 20th day of March, 2017, I served a true and correct copy of the above and foregoing *by electronic transmission*, duly addressed as follows:

Andrew Kuhlmann
Asst. Attorney General
andrew.kuhlmann@wyo.gov

Todd Parfitt
Director, DEQ
Todd.Parfitt@wyo.gov

Alan Edwards
Deputy Director, DEQ
Alan.edwards@wyo.gov

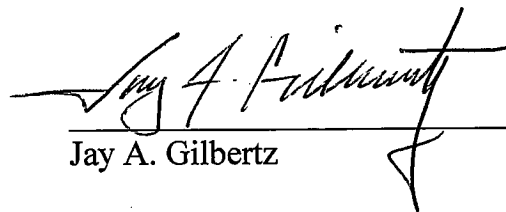
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Jim Ruby
Executive Officer, EQC
jim.ruby@wyo.gov



Jay A. Gilbertz

Copy to KW
BJ
AK
AB

January 22, 2017

Via Federal Express (01/24/17)

Kyle Wendtland, Administrator
Department of Environmental Quality
Land Quality Division
200 W. 17th Street
Cheyenne, WY 82002

RE: Ramaco, LLC/Brook Mine Permit
Sheridan County, Wyoming

Dear Mr. Wendtland:

Our property in Sheridan County is in the group of potentially affected landowners to the proposed Brook Mine Permit, and we received the Public Notice regarding this action. We have resided in this historic valley since 1996 and have run livestock and haying operations on our property. The purpose of this letter is to issue a written objection to the proposed mine permit based on the following concerns:

1. **Substantially Incomplete Mine Plan.** The mine plan has changed or been revised numerous times. It has gone from an operation purportedly employing 200-400 workers to its current version employing approximately 18-20 workers with initial projections of mining up to ten million tons per year to a revised plan of mining only two million tons in the first few years. In simple terms, local landowners are not clear on exactly what the current mine operation will entail as the current mine plan does not adequately address specific issues (to name a few, as follows): Where will the load-out facility be located? Where will infrastructure facilities be located? What type of "mobile crusher" will be used? How will the coal be transported and where? How many trucks will be on the road, how often, and what route will they take? How often will blasting occur and what are the hours of operation? Who specifically will be conducting the mine operations and what experience do they have in this type of operation (We understand that Mr. Woodring will be merely a "consultant")? Does Ramaco have a buyer/market for its coal?
2. **Ramaco's lack of history in conducting mining operations in Wyoming.** Other coal companies conducting business in Wyoming have a history of operating their mines in cooperation with local landowners and in compliance with local, state, and federal rules, regulations, statutes and procedures. For some landowners in this area, Ramaco has already demonstrated a disregard

Appendix

for "the Wyoming way" of conducting business. In our particular case, folks employed by Ramaco were caught trespassing on our property and taking soil samples without authorization. In fact, they were so blatant about it that my husband and a neighbor were out working on a baler in our hay field one afternoon and noticed two people out in our field. Those folks made no effort to come forward and identify themselves. My husband went up to them and asked what they were doing on our property and they told him they had permission to be there on behalf of Ramaco. He responded that he was the owner of the property and had not given them permission. They took the soil samples anyway and then departed. That is just one incident of several we have heard about concerning Ramaco's lack of cooperation with local landowners which does not bode well with their future operations.

3. **Soil Subsidence Issues and Sinkholes.** There have been geological surveys conducted in this area regarding the effects of coal mine subsidence in Sheridan County, specifically with respect to the area where Ramaco's mine operation will occur. Landowners are very concerned about subsidence, soil disturbance, and sinkhole issues considering how extensively this area has been mined. The mine plan does not adequately address these issues, including the possibility of re-igniting underground coal fires and measures to be taken for coal fire suppression. It is apparent that blasting within such close proximity to the old mines could further worsen the ongoing subsidence issues in this area.
4. **Damage to Water Wells and Foundations.** Affected landowners have substantial concerns that blasting operations may cause damage to the structural integrity of their water wells and foundations of homes and buildings on their property, including increasing drawdown in domestic wells. It is well-documented that previous mine operations in this same area caused damage to water wells and some were so extensive they had to be replaced. There are inadequate provisions in the current mine plan which protect landowners' ground and surface water.
5. **Air Quality, Noise and Light, and Other Health and Environmental Concerns.** The Tongue River Valley where many of the affected landowners live regularly sustains high winds in the area. The mine plan does not adequately address dust suppression measures and how mining operations will control the coal dust, dust from trucks and crushers, toxic fumes, emissions from increased truck traffic and potentially unhealthy air quality emissions due to mining operations. (Apparently no coal will be transported via rail...is that correct?) Will there be any restrictions on hours of operation, especially during high wind events? There is no provision in the mine plan for creating

a sound barrier to minimize the noise. There are concerns about coal dust blanketing the area leaving layers of dust and grime on homes, buildings, vehicles, ranch equipment, etc. Many local landowners/ranchers have livestock and horse farms which could be affected. In addition, there are health concerns regarding asthma and respiratory conditions which could arise due to mining operations. Light from the mine site will adversely affect the quality of life for residents in this area. The mine plan does not adequately address these health and safety issues.

6. **Proximity of Mine Operations to Interstate 90.** The mine operations are in very close proximity to Interstate 90, a major US highway. The mine plan does not address issues concerning potential damage to highway infrastructure and bridges, dust storms, effects of blasting, etc. on this heavily traveled major thoroughfare.
7. **Potential Pollution and Water Degradation to Tongue River and Adjacent Creeks.** The Wyoming Attorney General's Office has been involved in water law litigation with the State of Montana for well over 7 years which is finally reaching a conclusion. This involved irrigation rights and disputes between the two states regarding the Yellowstone River Compact, including the Tongue River. Given the close proximity of the Tongue River to Ramaco's mining operations, there are serious concerns about sediment runoff, wastewater issues, and potential pollution of waterways. If the Tongue River or adjacent creeks and tributaries are adversely affected by these mining operations, then the State of Wyoming could face further costly and protracted litigation over these issues. The current mine plan does not adequately address this.
8. **Inadequate Bonding and Reclamation Concerns.** It is our understanding that the bond for Ramaco's permit is only \$375,000. This seems wholly insufficient considering the potential for major impacts on air quality, pollution of Tongue River, creeks, irrigation, livestock waterway systems, etc. In addition, the bond as currently proposed does not take into account subsidence issues into the future and reclamation of the facilities and the pits. Considering the substantial increase in truck traffic, damages to county roads (including the Frontage Road) and other paved roads could be very costly to maintain and repair for the county. The approximately ten-mile long trenches associated with this mine plan could certainly require costly reclamation efforts and the current bond surely would not provide compensation to cover anywhere near those costs. Similarly, with the tremendous increase in truck traffic and other traffic from the mines on county roads, including the Frontage Road, and other paved roads in the area, safety concerns for local landowners and members of the public are huge. The potential of someone being injured

or killed as a result of the increased truck traffic is a high probability. Hwy. 345 (Frontage Road to Ranchester) recently was designated with a highway speed of 70 mph. With members of the public (including motorcyclists) traveling at that high rate of speed and slow-moving mine trucks and heavy equipment utilizing that two-lane road with great frequency, the possibility of highway accidents is imminent. The mine plan does not address these issues.

9. **Accidents or Environmental Harm.** Ramaco does not have a history of operating a highwall coal mine such as what is being proposed. How can adjacent landowners and members of the public be assured that Ramaco is capable of rectifying any potential serious accidents or harm that may occur as a result of its operations?

We understand that Ramaco faced stiff opposition to a similar plan of operation in Nottingham, Pennsylvania. Legislators, affected landowners, and members of the public (en masse) have been very vocal in expressing their concerns about deleterious effects the mining operation there could have on their quality of life, water and soil issues, and public health and safety.

10. **Impacts on Irrigation, Livestock, Wildlife, Hunting, Fishing, Recreational Activities.** The Tongue River Reservoir is located in close proximity to the mine operations and there is a very real potential that this area could be adversely affected which will have an impact on members of the public (from Wyoming and Montana) who recreate at the reservoir, including swimming, boating, fishing. A substantial number of ranchers in the area within close proximity to the mining operations have irrigation rights and conduct agricultural operations. If the waterways, ditches, drainages, reservoirs become polluted then the livelihood of a great many people in the area will be drastically affected, including impacts on livestock watering systems. In addition, the area has abundant wildlife which will also suffer.

11. **Black Diamond Trail Designation.** In addition to the prospect of the mining operations affecting the area valley designated as an alluvial valley floor, in September, 2012 the area along the frontage road between Sheridan and Ranchester (Hwy. 345) was designated as the Black Diamond Historic Mine Trail by the Sheridan Community Land Trust and the Wyoming Historic Preservation Work Group in conjunction with the Wyoming State Historic Preservation Office and Wyoming State Parks and Cultural Resources. Although not clearly defined in the mine plan, this area (Hwy 345) along the frontage road will sustain substantial truck traffic and will be impacted by dust, other air quality issues, road damage, etc. and may have an effect on this historic trail designation. There are no provisions in the current mine plan

addressing this historic designation to ensure its protection.

12. **Kleenburn Recreation Area.** This area which is in extremely close proximity to the mine operations (just east of the Acme exit off Interstate 90) is owned and operated by Sheridan County. The Wyoming Game and Fish is involved in stocking the ponds which provide members of the public the opportunity to fish for trout, largemouth bass, catfish and perch. Since its inception a few years ago, this recreation area has provided a countless number of folks, including tourists, with many hours of recreation, fishing, field trips for local school children, canoeing adventures, hiking, and many other forms of recreation. Potential pollution (air and water), noise, light, dust and truck traffic will greatly impact this area and pose adverse effects on the health and safety of not only local residents but members of the public at large. The mine plan does not adequately address this issue.
13. **Conflict of Interest.** The area landowners are concerned about a potential conflict of interest concerning Kyle Wendtland, Administrator for the Land Quality Division, whose brother, Tony Wendtland (Sheridan, Wyoming), is an attorney for Randall Atkins, CEO of Ramaco. Even if Kyle Wendtland recused himself from presiding over certain aspects of this mine plan, what assurances can be given to affected landowners that this process will be conducted, reviewed and monitored without bias or preference given to Ramaco's interests over the legitimate concerns of the public before, during, and after the mine operation? The very fact that landowners are required to submit objections to Kyle Wendtland is disconcerting. We have heard that Tony Wendtland may no longer be local counsel for Ramaco. Regardless of the current relationship between Attorney Wendtland and Ramaco, the fact is that Mr. Wendtland has provided legal representation to Ramaco throughout this critical mine permitting process.
14. **Adverse Effect On Property Values and Quality Of Life.** Local landowners are very worried about serious impacts on property values if the current mine plan is approved and they are equally concerned about threats to their quality of life. There are quite a number of landowners in this area whose property values could substantially diminish causing a significant reduction in the tax base for the county. Adverse effects from the mining operation will not only diminish property values but more importantly will endanger public health and safety and create a public nuisance.
15. **Viability of the Mine Operation.** Is the extraction of 10 million tons of coal per year even viable? Folks in this area are quite skeptical. Some who have worked in the coal mines here state that in the years of prime production, the

most that Big Horn Coal ever extracted was approximately 4 million tons. Given the potential for major detrimental impacts of Ramaco's proposed operation, is it really worth it?

CONCLUSION

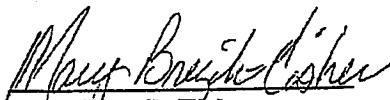
We are not attempting to preclude Brook Mining Company from operating a coal mine in the proposed area, but we have legitimate concerns about the mining operation under its current plan causing permanent and irreparable harm to a pristine area rich in history which has been enjoyed by Wyoming families for generations. This area has such a documented history that a number of books and articles have been published in attempts to enlighten folks about its history and preserve the heritage of this region. Local historians and others have frequently conducted lectures and presentations highlighting the history of the area. In addition, the local museum in Sheridan has devoted specific exhibits and dioramas to exemplify the historical significance of this longstanding mining community.


Initial projections gauging an economic boom to this community (and the State as a whole) as a result of the proposed Brook Mine have proven to be substantially distorted and misleading, and promises to provide an unrealistic number of jobs in an economically depressed area should not be the incentive for approving a mining operation which may result in devastation to this community and the State of Wyoming in the long run. Several of the issues and concerns identified above have not been addressed, and they represent a public nuisance to local property owners as well as significant threats to public health and safety.

We are hereby requesting an informal hearing with the director of DEQ on this matter.

Thank you for your attention.

Sincerely,


Mary Brezik-Fisher


David Fisher

(32 Slater Creek Lane, Ranchester, WY 82839)

cc: Steve Maier, Chairman
Sheridan County Board of Commissioners

Public Notice

The Brook Mining Co., LLC of 1101 Sugarview Drive, Suite 201, Sheridan, WY 82801 has applied for a coal mining permit from the Land Quality Division of the Department of Environmental Quality for the State of Wyoming. The coal mining permit area will be located in: Sections 10, 11, 12, 13, 14 and 15 Township 57N, Range 85W, and Sections 7, 8, 9, 10, 15, 17, 18, 20, 21, 22 and 27 Township 57N, Range 84W Sheridan County, Wyoming. The Brook Mine is located approximately 6 miles Northwest of Sheridan, Wyoming. This area can be found on the Acme and Monarch USGS quadrangle maps. The proposed operation is scheduled to begin July 2017 and is estimated to continue until 2032. The land, after mining, will be returned to a grazing land use. Information regarding the proposed mining operation and reclamation procedures may be reviewed in the Office of the Land Quality Division of the Department of Environmental Quality in Cheyenne and Sheridan, Wyoming, the office of RAMACO in Sheridan, WY, or the Sheridan County Clerk's Office Sheridan, Wyoming. Written objections to the proposed mining operation must be received by the Administrator of the Land Quality Division, Department of Environmental Quality, 200 W. 17th Street, Cheyenne, WY 82002, before the close of business January 27, 2017. The Director may hold an informal conference if requested, hear the complaint and take action on the application in accordance with the Department's Rules of Practice and Procedure. The complainants shall have a right of appeal to the Environmental Quality Council where the complaint will be heard a second time. A conference shall be held if the Director determines that the nature of the complaint or the position of the complainants indicates that an attempt to informally resolve the disputes is preferable to a contested case proceeding. An informal conference or a public hearing shall be held within twenty (20) days after the final date for filing objections unless a different period is stipulated to by the parties. The Council or Director shall publish notice of the time, date and location of the hearing or conference in a newspaper of general circulation in the locality of the proposed operation once a week for two (2) consecutive weeks immediately prior to the hearing or conference. The hearing would be conducted as a contested case in accordance with the Wyoming Administrative Procedure Act (W.S. §16-3-101 through §16-3-115), and the right of judicial review would be afforded as provided in that act. All parties as given in W.S. §35-11-406(j) will be mailed a copy of this notice. The Wyoming Oil and Gas Commission will be mailed a copy of the application mine plan map as required by W.S. §35-11-406(j).

Appendix

From: Shannon Anderson
To: [Isaac Sutphin](#); lboomgaarden@crowleyfleck.com; cgregersen@crowleyfleck.com; todd.parfitt@wyo.gov; andrew.kuhlmann@wyo.gov; jgilbertz@yonkeetoner.com; james.larock@wyo.gov; [Jim Ruby](#); [Thomas Sansonetti](#); [Jeffrey S. Pope](#)
Subject: RE: In re Brook Mine Application (17-4802) - Powder River Basin Resource Council's Response to Brook Mine's Motion to Dismiss
Date: Monday, March 20, 2017 12:06:09 PM
Attachments: [2017 3-20 Opp to Ramaco Mot to Dismiss.pdf](#)

Counsel:

Please see the attached.

Thank you,
Shannon

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Follow us at <https://twitter.com/PRBResCouncil>

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BEFORE THE ENVIRONMENTAL QUALITY COUNCIL
STATE OF WYOMING

IN RE BROOK MINE APPLICATION)	
)	
	)	Docket No. 17-4802
TFN 6 2-025)	
)	

**POWDER RIVER BASIN RESOURCE COUNCIL’S RESPONSE TO BROOK MINING
COMPANY’S MOTION TO DISMISS**

Pursuant to the Environmental Quality Council’s (“Council” or “EQC”) Order of March 2, 2017, and W.R.C.P. 12(b), the Powder River Basin Resource Council (“Resource Council”) submits this response to Brook Mining Company, LLC’s (“Brook”) Motion to Dismiss. The Resource Council respectfully requests that the EQC deny the motion and allow this matter to proceed to hearing.

STATEMENT OF THE CASE

The Resource Council brought this matter before the EQC to remedy deficiencies in Brook’s coal mine permit application and to raise grounds on which basis the permit application should be denied. The Resource Council did not choose a contested case hearing as its first opportunity for public participation, but was forced to request a hearing only because DEQ denied its request for an informal conference. Additionally, the parties find themselves in this proceeding at this time only because the EQC dismissed the previous proceedings. The procedural posture we find ourselves in is not the creation of the Resource Council, and as such the organization should not be penalized for any deficiencies in the Environmental Quality Act

and DEQ's regulatory framework that have led Brook to question the validity of these proceedings.¹ More importantly, as explained below, the Resource Council properly requested a hearing before the EQC and there are no grounds to dismiss such a hearing as Brook requests.

STANDARD OF REVIEW

Although Brook does not reference Rule 12 in its motion, or for that matter *any* law related to the standard for a motion to dismiss, for purposes of this response, the Resource Council assumes Brook is bringing its motion under W.R.C.P. 12(b)(1). A claim must be dismissed pursuant to W.R.C.P. 12(b)(1) when a court lacks jurisdiction over the subject matter. The Wyoming Supreme Court has held that "A court has jurisdiction when it has the power to hear and determine a matter in controversy." *Nyberg v. Wyoming Military Department*, 2003 WY 43 ¶ 8 (2003) (internal citations omitted). The same principle applies to administrative agencies acting as adjudicatory bodies.

For purposes of review of the motion, the Council should accept the facts alleged in the Resource Council's Petition as true. *Gates v. Richardson*, 719 P.2d 193, 194 (Wyo. 1986); *Wyoming v. Fremont Energy Corp.*, 651 P.2d 802, 804 (Wyo. 1982). Additionally, the EQC should be mindful that "dismissal is a drastic remedy which should be granted sparingly." *Rissler & McMurry, Co. v. Wyoming*, 917 P.2d 1158, 1160 (Wyo. 1996).

ARGUMENT

The EQC should spend little time and effort dispensing with Brook's Motion to Dismiss. It was written to intimidate those wishing to object to its coal mine permit application and force the parties to expend unnecessary resources.

¹ In its motion and brief in the previous docket, the Resource Council carefully reserved all rights to a contested case hearing.

The Resource Council can only assume that to be the case because even Brook seems to question the basis for its motion as Brook’s counsel, Isaac Sutphin, represented to the Sheridan County Board of County Commissioners – and the public in attendance and via the media – that “there will be a public hearing.” Pat Blair, *Group Says DEQ Denied Them Hearing on Ramaco*, *Sheridan Media*, Mar. 6, 2017, available at <http://www.sheridanmedia.com/news/group-says-deq-denied-them-hearing-ramaco91677>. In the audio recording linked via the *Sheridan Media* website, Mr. Sutphin represented that “The Environmental Quality Council will be hearing this matter” and referenced the scheduling conference that was set to occur on March 10, 2017. It is disingenuous for Brook to say publicly that “there will be a hearing” and at the same time try to dismiss that hearing with this motion.

Brook’s Motion to Dismiss should be denied for the following reasons.²

I. The Environmental Quality Act Does Not Require Parties to Request a Contested Case Hearing on a Coal Mine Permit by the Deadline for Submitting Objections

Citing no authority for its position, Brook argues that since the Resource Council “did not request a contested case within 30 days of the final publication date” of the public notice for objections on the coal mine permit application, the “Petition is untimely and should be dismissed.” Brook Mot. to Dismiss at 2. Brook argues that “a hearing request filed with the Council must occur on the same timetable as a request to the DEQ for an informal conference under Section 406(k).” *Id.* Brook’s arguments fail for several reasons.

Section 406(k) merely states that “Any interested person has the right to file written objections to the application with the administrator within thirty (30) days after the last publication of the above notice.” W.S. § 35-11-406(k) (referencing Section 406(j) regarding

² The Resource Council hereby incorporates into this response arguments made by Big Horn Coal Company and the Fishers as part of their responses in this now-consolidated docket.

public notice of a surface coal mine permit application). Section 406(k) then goes on to discuss informal conferences and contested case hearings but gives no instruction regarding a deadline to request either. Section 406(k) discusses that an informal conference may be “requested,” but does not contain similar language regarding contested case hearings before the EQC, except in cases where a party exercises its “right of appeal to the council.”

Similarly, the public notice *published by Brook* does not contain any instructions on how a party should request a contested case hearing or what the deadline for that request is. Like Section 406(k) itself, the public notice discusses that an informal conference may be “requested” but does not contain similar language inferring that a contested case hearing may also be requested. Importantly, neither the public notice nor Section 406(k) dictates that an interested person loses his or her right to request a contested case proceeding if they don’t do so within the time period afforded for the filing of objections.

Here, the Resource Council requested an informal conference, in compliance with DEQ’s rules of practice and procedure.³ DEQ subsequently denied the request for an informal conference, and the Resource Council has now timely exercised its “right of appeal” to the EQC for review of DEQ’s decision and the coal mine permit application in the exact manner that Section 406(k) contemplates. DEQ’s rules of practice and procedure afford a period of thirty days to exercise the “right of appeal” in Section 406(k). DEQ Rules of Practice & Procedure, Ch. 1 § 17(b). Additionally, the Resource Council complied with all other requirements of Chapter 1, Section 3 and therefore properly initiated proceedings before the EQC.

³ DEQ’s rules of practice and procedure also do not include a deadline for the informal conference request; however, the public notice’s “if requested” language infers that such request should be made by the same deadline as written objections. This reading is consistent with SMCRA’s implementing regulations, which require a request for an informal conference to “[b]e filed with the regulatory authority no later than 30 days after the last publication of the newspaper advertisement required under paragraph (a) of this section.”

Although this is a case of first impression, it seems clear that the Resource Council has timely petitioned for review of DEQ's action to deny the informal conference request *and* to review Brook's coal mine permit application. Brook cannot cite any supporting law to the contrary and its motion to dismiss should be denied.

II. Due Process and the Public's Right to Participate in Coal Mine Permitting Proceedings Require a Hearing to be Held

The Environmental Quality Act contemplates robust public participation opportunities for permitting proceedings, and in the case of coal mine permits, Section 406(k) provides that "An informal conference or a public hearing shall be held." The Act requires a proceeding and clearly contemplates that either an informal conference or a contested case proceeding will be held if requested.

Brook argues that such a proceeding must be held within twenty days and therefore the Resource Council is too late; however, Section 406(k) affords a different time period if it is stipulated to by the parties. Brook has participated willingly in the proceedings thus far, has not objected to the scheduling orders issued in either docket, and did not challenge the EQC's decision in the previous docket, which placed the parties in the procedural posture we are in. In other words, Brook has "stipulated" to a hearing outside the twenty day window because it has willingly participated in the proceedings thus far and, unless the company owns a time machine, it is impossible to go back and hold the now-required hearing in that time period.

III. The EQC Has Authority – and Statutory Obligation – to Review DEQ's Denial of the Informal Conference Requests

Calling it "baseless," Brook also seeks to dismiss the Resource Council's claim related to the denial of its request for an informal conference.

Given that Brook raises many of the same arguments as DEQ, and in an effort to avoid duplication of responsive arguments, the Resource Council hereby incorporates by reference its response to DEQ's motion to dismiss filed March 17, 2017.

Respectfully submitted this 20th day of March, 2017.

/s/ Shannon Anderson
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CERTIFICATE OF SERVICE

I hereby certify that on March 20, 2017, I served a copy of the foregoing **RESPONSE TO BROOK MINING COMPANY'S MOTION TO DISMISS** on the following parties by electronic mail, and through the EQC's electronic filing system, which will send a notice of electronic filing to all counsel and parties of record.

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/s/Shannon Anderson
Shannon Anderson

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Cc: [Thomas Sansonetti](#); [Isaac Sutphin](#); [Jeffrey S. Pope](#); [Carri Svec](#)
Subject: In re Brook Mine Application (17-4802) - Brook Mine"s Expert Witness Designation
Date: Friday, March 17, 2017 4:07:00 PM
Attachments: [2017-03-17 Brook Mine"s Expert Witness Designation.pdf](#)

Attached please find Brook Mine's Expert Witness Designation

Jan Kelley

*Assistant to Isaac Sutphin, JoAnna DeWald,
and Sami Falzone*

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ATTORNEYS FOR PERMIT APPLICANT
BROOK MINING COMPANY, LLC

**BEFORE THE ENVIRONMENTAL QUALITY COUNCIL
STATE OF WYOMING**

IN RE BROOK MINE APPLICATION)	
	)	DOCKET 17-4802
)	
TFN 6 2-025)	

BROOK MINE'S EXPERT WITNESS DESIGNATION

Pursuant to the Council's Order of Consolidation and Schedule, Brook Mining Company
(Brook) names the following expert witnesses:

Jeff Barron, P.E.
WWC Engineering
1849 Terra Avenue
Sheridan, WY 82801

It is anticipated that Mr. Barron will primarily be Brook Mining's fact witness and will testify regarding his experience relating to mine plans, reclamation plans, the mine permit application process, and preparation and coordination of submitting the mine permit application at issue in this matter. Although Brook currently expects to present Mr. Barron solely as a fact witness based on his first-hand involvement with the subject mine permit application, Mr. Barron is qualified as a technical expert in the mine permitting area. In the event Brook is required to

present expert testimony regarding the mine permit application process or the technical components of the mine plan and the reclamation plan, Mr. Barron is qualified to provide such testimony and may be called as an expert witness. Mr. Barron has worked with various mines in filing several components of mine permits, currently on file with the Wyoming Department of Environmental Quality. Mr. Barron has assisted with non-substantial revisions and major revisions alike. Given Mr. Barron's education and experience, he may also be asked to provide expert opinions relating to the topics of ground water and surface water, as well as geotechnical engineering.

David Myers
Natural Resources Analyst
Wyoming Department of Environmental Quality

Brook may call Mr. Myers to testify as an expert in this matter. Mr. Myers is a Natural Resources Analyst at DEQ and has experience and expertise in surface water hydrology. If called, Mr. Myers may testify about: 1) hydrology relating to the technical adequacy and statutory compliance of Brook's mine permit; 2) the status of Big Horn Coal Co.'s reclamation efforts; 3) Big Horn Coal Co.'s remaining reclamation obligations; 4) the process for establishing a reclamation performance bond before issuing a permit; and 5) the authenticity of the Department's records for Big Horn Coal Co.

Bjarne Kristiansen
Assistant Supervisor, District III
Wyoming Department of Environmental Quality

Brook may call Mr. Kristiansen to testify as an expert in this matter. Mr. Kristiansen is a professional geologist in Wyoming as is the Assistant Supervisor, District III, at DEQ. Mr. Kristiansen has experience and expertise in geology, overburden assessment, hydrology, and alluvial valley floors. If called, Mr. Kristiansen may testify about: 1) the authenticity of the

Department's records for Brook Mine; 2) the process for establishing a surface damages bond and reclamation performance bond before issuing a permit; 3) Brook's statutory compliance with the subsidence control plan; 4) Brook's statutory compliance for hydro-geology; and 5) the general statutory compliance and technical adequacy of the Brook mine permit.

Stacy Page
Former Assistant Supervisor, District III
Wyoming Department of Environmental Quality

Brook may call Ms. Page to testify as an expert in this matter. Ms. Page was the Assistant Supervisor, District III, at DEQ and has experience and expertise in baseline vegetation and reclamation. If called, Ms. Page may testify about: 1) Brook's statutory compliance with vegetation studies within the permit and 2) the general statutory compliance and technical adequacy of the Brook mine permit.

Doug Emme
Blasting Program Principal
Wyoming Department of Environmental Quality

Brook may call Mr. Emme to testify as an expert in this matter. Mr. Emme is the Blasting Program Principal at DEQ and has experience and expertise in blasting and overburden removal as well as blasting program compliance. If called, Mr. Emme may testify about: 1) Brook's statutory compliance with blasting and 2) the general statutory compliance and technical adequacy of the Brook mine permit.

Jaime Jakes n/k/a Henderson
Natural Resources Analyst
Wyoming Department of Environmental Quality

Brook may call Ms. Henderson to testify as an expert in this matter. Ms. Henderson is a Natural Resources Analyst and has experience and expertise in baseline vegetation and reclamation. If called, Ms. Henderson may testify about: 1) Brook's statutory compliance with

vegetation studies within the permit and 2) the general statutory compliance and technical adequacy of the Brook mine permit.

Matt Kunze
Surface Water Hydrologist
Wyoming Department of Environmental Quality

Brook may call Mr. Kunze to testify as an expert in this matter. Mr. Kunze is a Surface Water Hydrologist at DEQ and has experience and expertise in surface water hydrology, baseline compliance, and mine plan/reclamation plan compliance. If called, Mr. Kunze may testify about: 1) Brook's statutory compliance with alluvial valley floor studies; 2) Brook's statutory compliance with surface water studies; and 3) the general statutory compliance and technical adequacy of the Brook mine permit.

Muthu Kuchanur
Land Quality Geology Supervisor
Wyoming Department of Environmental Quality

Brook may call Mr. Kuchanur to testify as an expert in this matter. Mr. Kuchanur is the Land Quality Geology Supervisor at DEQ and has experience and expertise in geology, hydrogeology, and groundwater. If called, Mr. Kuchaur may testify about: 1) Brook's statutory compliance with geology studies; 2) Brook's statutory compliance with groundwater studies; 3) Brook's statutory compliance with surface water studies; and 4) the general statutory compliance and technical adequacy of the Brook mine permit.

ADDITIONAL COMMENTS RELATING TO BROOK'S DESIGNATION

1. Brook reserves the right to call, without further notice, any expert witness, whether retained or non-retained, designated by any other party to this action or identified in any manner pursuant to the Wyoming Rules of Civil Procedure as if he or she were its own.

2. Brook expressly reserves the right to call to testify at the hearing any and all additional non-retained witnesses who qualify, or who may qualify, as experts who are identified in written discovery responses and/or documents produced by any party or non-party to this matter, as well as any person deposed and/or identified during the depositions of witnesses taken or yet to be taken in this matter.

3. Brook reserves the right to designate any and all witnesses necessary for rebuttal or for counter testimony to any other parties' designated experts.

4. Brook reserves the right to object to any expert listed by any other party to this matter on the basis of relevance, or otherwise.

5. In the event any of Brook's listed experts are unavailable to testify in person at the trial in this matter, Brook reserves the right to use parts or all of the depositions or videotaped depositions of any or all of these expert witnesses at trial, in lieu of the witnesses' actual live testimony.

6. Brook reserves the right, as this case develops, to name additional expert witnesses if the need arises or to expand on the areas and subjects listed above.

DATED: March 17, 2017.



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CERTIFICATE OF SERVICE

I hereby certify that on March 17, 2017, I served a true and correct copy of the foregoing by email to the following:

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From: Jay Gilbertz
To: [Wendy Drake](#); andrew.kuhlmann@wyo.gov; james.larock@wyo.gov; alan.edwards@wyo.gov; tlsansonetti@hollandhart.com; insutphin@hollandhart.com; jspope@hollandhart.com; jmkelley@hollandhart.com; csvcc@hollandhart.com; bpcharlie@wbaccess.net; todd.parfitt@wyo.gov; sanderson@powderriverbasin.org; [Jim Ruby](#)
Cc: [Lynne Boomgaarden](#); [Clayton Gregersen](#); [Jenny Wacker](#)
Subject: RE: Fisher"s Expert Witnesses
Date: Friday, March 17, 2017 2:58:59 PM
Attachments: [Fisher Expert Disc.pdf](#)

Attached is the Fishers' Expert Witness Identification.

Jay A. Gilbertz
Yonkee & Toner, LLP
P.O. Box 6288
Sheridan, WY 82801
(307) 674-7451 (Phone)

Jay A. Gilbertz, WSB#6-3087
Yonkee & Toner, LLP
319 West Dow Street
P.O. Box 6288
Sheridan, WY 82801
(307) 674-7451
(307) 672-6250 (fax)
jgilbertz@yonkeetoner.com
*Attorney for Objectors,
Mary Brezik-Fisher and David Fisher*

**BEFORE THE ENVIRONMENTAL QUALITY COUNCIL
STATE OF WYOMING**

IN RE BROOK MINE APPLICATION)	
)	
TFN 6 2-025	)	DOCKET 17-4802
)	

OBJECTOR FISHERS' IDENTIFICATION OF EXPERT WITNESSES

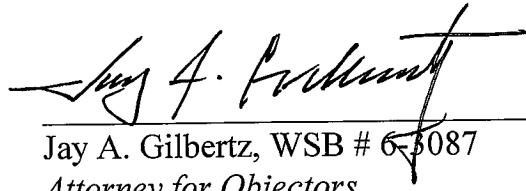
Jay A. Gilbertz, of the firm Yonkee & Toner, LLP, by and on behalf of Objectors Mary Brezik-Fisher and David Fisher ("Fishers"), and pursuant to the Order Of Consolidation And Schedule dated March 13, 2017, submits Objector Fishers' Identification Of Expert Witnesses.

Fishers do not have any independent or specifically retained experts to identify at this time. However, Fishers do fully reserve the right to subpoena, call, examine and cross-examine any expert witness identified by any other party to these proceedings whether or not such party remains a party to this action at the time of the hearing or whether or not any such party elects to call an identified expert as a witness at the hearing. Fishers hereby adopt by

reference as if fully set forth herein the identification of expert witnesses submitted by any and all other parties in this matter and in the prior contested case proceeding EQC Docket Number: 17-4801.

DATED this 17th day of March, 2017.

YONKEE & TONER, LLP

A handwritten signature in black ink, appearing to read "Jay A. Gilbertz", is written over a horizontal line.

Jay A. Gilbertz, WSB # 63087

Attorney for Objectors

Mary Brezik-Fisher and David Fisher

319 West Dow Street

P.O. Box 6288

Sheridan, WY 82801

Telephone: (307) 674-7451

Telefax: (307) 672-6250

CERTIFICATE OF SERVICE

I, Jay A. Gilbertz, hereby certify that on the 17th day of March, 2017, I served a true and correct copy of the above and foregoing *by electronic transmission*, duly addressed as follows:

Andrew Kuhlmann
Asst. Attorney General
andrew.kuhlmann@wyo.gov

Todd Parfitt
Director, DEQ
Todd.Parfitt@wyo.gov

Alan Edwards
Deputy Director, DEQ
Alan.edwards@wyo.gov

Shannon Anderson
Powder River Basin Resource Council
sanderson@powderriverbasin.org

Thomas L. Sansonetti
Isaac Sutphin and Jeff Pope
Attorneys for Brook Mining Co., LLC
TLSansonetti@hollandhart.com
INSutphin@hollandhart.com
jspope@hollandhart.com
jmkelley@hollandhart.com
csvec@hollandhart.com

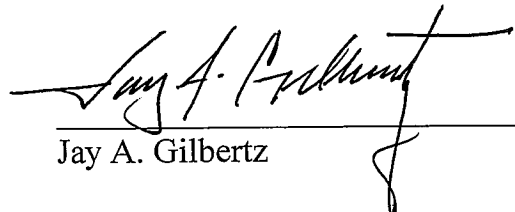
Brooke Collins
38 Monarch Rd.
Ranchester, WY 82839
bpcharlie@wbaccess.net

Lynne Boomgaarden
Clayton H. Gregersen
Attorneys for Big Horn Coal
lboomgaarden@crowleyfleck.com
cgregersen@crowleyfleck.com

Jim Ruby
Executive Officer, EQC
jim.ruby@wyo.gov

Via U.S. Mail:

Joe Girardin
Council Business Coordinator
Environmental Quality Council
122 W. 25th Street
Herschler Bldg., Rm. 1714
Cheyenne, WY 82002


Jay A. Gilbertz

From: Wendy Drake
To: andrew.kuhlmann@wyo.gov; james.larock@wyo.gov; alan.edwards@wyo.gov; tlsansonetti@hollandhart.com; insutphin@hollandhart.com; jspope@hollandhart.com; jmkelley@hollandhart.com; csvec@hollandhart.com; bpcharlie@wbaccess.net; todd.parfitt@wyo.gov; sanderson@powderriverbasin.org; jgilbertz@yonkeetoner.com; [Jim Ruby](#)
Cc: [Lynne Boomgaarden](#); [Clayton Gregersen](#); [Jenny Wacker](#)
Subject: Big Horn Coal Company"s Naming of Expert Witnesses
Date: Friday, March 17, 2017 2:25:49 PM
Attachments: [Objector Big Horn Coal Company"s Naming of Expert Witnesses.pdf](#)

Attached please find *Objector Big Horn Coal Company's Naming of Expert Witnesses* filed today with the EQC in Docket No. 17-4802.

Thank you.

Wendy Drake
*Assistant to Lynne Boomgaarden,
Amanda H. Newton, and Blake A. Klinkner*
307-772-4846
wdrake@crowleyfleck.com

CROWLEY FLECK PLLP
237 Storey Boulevard, Suite 110
Cheyenne, WY, 82009
307-426-4100

OFFICES:
BILLINGS BISMARCK BOZEMAN BUTTE CASPER CHEYENNE HELENA KALISPELL MISSOULA SHERIDAN WILLISTON

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Lynnette J. Boomgaarden (WSB# 5-2837)
Clayton H Gregersen (WSB# 7-5677)
Crowley Fleck PLLP
237 Storey Boulevard, Suite 110
Cheyenne, WY 82009
307-426-4100
lboomgaarden@crowleyfleck.com
cgregersen@crowleyfleck.com
ATTORNEYS FOR OBJECTORS
BIG HORN COAL COMPANY

**BEFORE THE ENVIRONMENTAL QUALITY COUNCIL
STATE OF WYOMING**

IN RE BROOK MINE APPLICATION)	
	)	Docket No. 17-4802
)	
TFN 6 2-025)	

**OBJECTOR BIG HORN COAL COMPANY'S NAMING OF EXPERT
WITNESSES**

Big Horn Coal Company, by and through its undersigned counsel, Crowley Fleck PLLP, and pursuant to the Order of Consolidation and Schedule of the Environmental Quality Council ("EQC") in this matter, dated March 13, 2017, submits this list of expert witnesses it intends to call at the hearing set to begin on May 22, 2017 at 3:00 p.m.

Big Horn Coal Company intends to call the following expert witnesses:

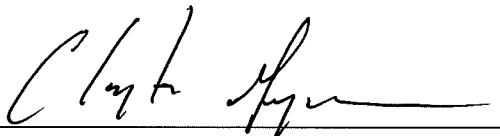
- 1. Jason N. Todd, QP**
Mining Consultant—Millcreek Mining Group
1011 E. Murray Holladay Rd, #100
Salt Lake City, UT 84117
(801) 904-2260

- 2. Paul (Joe) Gerlach**
President, Hydrogeologist—Aqua Terra Consultants
2624 Heartland Drive

Sheridan, WY 82801
(307) 672-7133

As required by the EQC's Order of Consolidation and Schedule, Big Horn Coal Company will provide an expert report for each of these expert witnesses on or before April 3, 2017 and will provide a complete list of witnesses it intends to call at the above referenced hearing on or before May 17, 2017. Both Mr. Todd and Mr. Gerlach must be contacted through the undersigned counsel for Big Horn Coal Company.

DATED: March 17, 2017.

By 
Lynnette Boomgaarden (WSB # 5-2837)
Clayton H. Gregersen (WSB # 7-5677)
Crowley Fleck PLLP
237 Storey Boulevard, Suite 110
Cheyenne, WY 82009
(307) 426-4100

*Attorneys for Objectors
Big Horn Coal Company*

CERTIFICATE OF SERVICE

I hereby certify that on March 17, 2017, a true and correct copy of the foregoing was served by email to the following:

Andrew Kuhlmann
James LaRock
Wyoming Attorney General's Office
Andrew.kuhlmann@wyo.gov
James.larock@wyo.gov
Attorneys for DEQ

Alan Edwards
Deputy Director, DEQ
Alan.edwards@wyo.gov

Thomas L. Sansonetti
Isaac N. Sutphin
Jeffrey Pope
TLSansonetti@hollandhart.com
INSutphin@hollandhart.com
JSPope@hollandhart.com
jmkelley@hollandhart.com
csvec@hollandhart.com
Attorneys for Brook Mining Co., LLC

Brook Collins
38 Monarch Rd.
Ranchester, WY 82839
bpcharlie@wbaccess.net

Todd Parfitt
Director, DEQ
Todd.Parfitt@wyo.gov

Shannon Anderson
Powder River Basin Resource Council
sanderson@powderriverbasin.org

Jay Gilbertz
jGilbertz@yonkeetoner.com
*Attorney for Mary Brezik-Fisher and
David Fisher*

Jim Ruby
Environmental Quality Council
Jim.ruby@wyo.gov



From: Shannon Anderson
To: andrew.kuhlmann@wyo.gov; james.larock@wyo.gov; jgilbertz@yonkeetoner.com; tlsansonetti@hollandhart.com; insutphin@hollandhart.com; jspope@hollandhart.com; Clayton Gregersen; Lynne Boomgaarden
Cc: [Jim Ruby](mailto:Jim.Ruby); todd.parfitt@wyo.gov
Subject: EQC Docket No. 17-4802, Resource Council Designation of Experts
Date: Friday, March 17, 2017 10:36:24 AM
Attachments: [2017 3-17 Designation of expert witnesses.pdf](#)

Counsel: please see the attached filing.

Thank you,
Shannon

Shannon Anderson
Powder River Basin Resource Council
934 N. Main St., Sheridan, WY 82801
307-672-5809 cell: 307-763-0995
sanderson@powderriverbasin.org
Join us at www.powderriverbasin.org
Follow us at <https://twitter.com/PRBResCouncil>

From: Shannon Anderson
To: andrew.kuhlmann@wyo.gov; james.larock@wyo.gov; jgilbertz@yonkeetoner.com; tlsansonetti@hollandhart.com; insutphin@hollandhart.com; jspope@hollandhart.com; Clayton Gregersen; Lynne Boomgaarden
Cc: [Jim Ruby](mailto:Jim.Ruby); todd.parfitt@wyo.gov
Subject: EQC Docket No. 17-4802, Resource Council Response to DEQ Motion to Dismiss
Date: Friday, March 17, 2017 9:09:19 AM
Attachments: [2017 3-17 Response to DEQ Mot to Dismiss.pdf](#)

Counsel: Please see the attached.

Thank you,
Shannon

Shannon Anderson
Powder River Basin Resource Council
934 N. Main St., Sheridan, WY 82801
307-672-5809 cell: 307-763-0995
sanderson@powderriverbasin.org
Join us at www.powderriverbasin.org
Follow us at <https://twitter.com/PRBResCouncil>

From: Wendy Drake
To: andrew.kuhlmann@wyo.gov; james.larock@wyo.gov; alan.edwards@wyo.gov; tlsansonetti@hollandhart.com; insutphin@hollandhart.com; jspope@hollandhart.com; jmkelley@hollandhart.com; csvec@hollandhart.com; bpcharlie@wbaccess.net; todd.parfitt@wyo.gov; sanderson@powderriverbasin.org; jgilbertz@yonkeetoner.com; [Jim Ruby](#)
Cc: [Lynne Boomgaarden](#); [Clayton Gregersen](#); [Jenny Wacker](#)
Subject: Big Horn Coal Company's Response to Brook Mine's Motion to Dismiss, Exhibits to Response
Date: Wednesday, March 15, 2017 3:55:55 PM
Attachments: [Response to Brook Motion to Dismiss BHC Petition for Contested Case Hearing.pdf](#)
[Exhibits A-D BHC Response to Motion to Dismiss.pdf](#)

Attached please find *Big Horn Coal Company's Response to Brook Mine's Motion to Dismiss Big Horn Coal Company's Petition for a Contested Case Hearing* and *Exhibits A-D* to the *Response* filed with the EQC today.

Thank you.

Wendy Drake
*Assistant to Lynne Boomgaarden,
Amanda H. Newton, and Blake A. Klinkner*
307-772-4846
wdrake@crowleyfleck.com

CROWLEY FLECK PLLP
237 Storey Boulevard, Suite 110
Cheyenne, WY, 82009
307-426-4100

OFFICES:
BILLINGS BISMARCK BOZEMAN BUTTE CASPER CHEYENNE HELENA KALISPELL MISSOULA SHERIDAN WILLISTON

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From: Jim Ruby
To: [Shannon Anderson](#); [Lynne Boomgaarden](#); [Isaac Sutphin](#); [andrew kuhlmann](#); [Jay Gilbertz](#); [Jeffrey S. Pope \(JSPope@hollandhart.com\)](#); [Dave Bagley](#); [Deb Baumer](#); [Joe Girardin](#); [Megan M. Degenfelder \(CPE\)](#); [Meghan O'toole Lally](#); [Nick Agopian](#); [Rich Fairservis](#); [Tim Flitner](#)
Subject: Final Hearing for Docket 17-4802 In Re Brook Mine LLC
Date: Wednesday, March 15, 2017 2:16:53 PM

The final hearing in the above matter will be held at Sheridan College Room TRCC 008 in the Thorne-Rider Campus Center, 3059 Coffeen Avenue, Sheridan, WY 82801

If you have any questions please let me know.

Jim

From: Wendy Drake
To: andrew.kuhlmann@wyo.gov; james.larock@wyo.gov; alan.edwards@wyo.gov; bpcharlie@wbaccess.net; todd.parfitt@wyo.gov; sanderson@powderriverbasin.org; jgilbertz@yonkeetoner.com; [Jim Ruby](mailto:Jim.Ruby@hollandhart.com); tlsansonetti@hollandhart.com; insutphin@hollandhart.com; jspope@hollandhart.com; jmkelley@hollandhart.com; csvec@hollandhart.com
Cc: [Lynne Boomgaarden](mailto:Lynne.Boomgaarden@hollandhart.com); [Clayton Gregersen](mailto:Clayton.Gregersen@hollandhart.com); [Jenny Wacker](mailto:Jenny.Wacker@hollandhart.com)
Subject: EQC Docket No. 17-4802, Entry of Appearance of Clayton Gregersen
Date: Tuesday, March 14, 2017 12:53:48 PM
Attachments: [Entry of Appearance of Clayton Gregersen.pdf](#)

Good afternoon,

Attached please find *Entry of Appearance of Clayton Gregersen* filed with the EQC in Docket No. 17-4802 today.

Thank you.

Wendy Drake
*Assistant to Lynne Boomgaarden,
Amanda H. Newton, and Blake A. Klinkner*
307-772-4846
wdrake@crowleyfleck.com

CROWLEY FLECK PLLP
237 Storey Boulevard, Suite 110
Cheyenne, WY, 82009
307-426-4100

OFFICES:
BILLINGS BISMARCK BOZEMAN BUTTE CASPER CHEYENNE HELENA KALISPELL MISSOULA SHERIDAN WILLISTON

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Lynnette J. Boomgaarden (WSB# 5-2837)
Clayton H Gregersen (WSB# 7-5677)
Crowley Fleck PLLP
237 Storey Boulevard, Suite 110
Cheyenne, WY 82009
307-426-4100
lboomgaarden@crowleyfleck.com
cgregersen@crowleyfleck.com
ATTORNEYS FOR OBJECTORS
BIG HORN COAL COMPANY


**BEFORE THE ENVIRONMENTAL QUALITY COUNCIL
STATE OF WYOMING**

IN RE BROOK MINE APPLICATION)
) Docket No. 17-4802
)
TFN 6 2-025)

ENTRY OF APPEARANCE

Clayton H. Gregersen, of Crowley Fleck PLLP, hereby enters his appearance as attorney for Big Horn Coal Company, in the above entitled case, and requests that he is served with copies of all notices, motions, orders, pleadings, requests and other filings by any party in interest or otherwise.

DATED: March 14, 2017.

By 
Lynette Boomgaarden (WSB # 5-2837)
Clayton H. Gregersen (WSB # 7-5677)
Crowley Fleck PLLP
237 Storey Boulevard, Suite 110
Cheyenne, WY 82009
(307) 426-4100
lboomgaarden@crowleyfleck.com
cgregersen@crowleyfleck.com
Attorneys for Objectors
Big Horn Coal Company

CERTIFICATE OF SERVICE

I hereby certify that on March 14, 2017, I served a true and correct copy of the foregoing by email to the following:

Andrew Kuhlmann
James LaRock
Wyoming Attorney General's Office
Andrew.kuhlmann@wyo.gov
James.larock@wyo.gov
Attorneys for DEQ

Alan Edwards
Deputy Director, DEQ
Alan.edwards@wyo.gov

Thomas L. Sansonetti
Isaac N. Sutphin
Jeffrey Pope
TLSansonetti@hollandhart.com
INSutphin@hollandhart.com
JSPope@hollandhart.com
jmkelley@hollandhart.com
csvec@hollandhart.com
Attorneys for Brook Mining Co., LLC

Brook Collins
38 Monarch Rd.
Ranchester, WY 82839
bpcharlie@wbaccess.net

Todd Parfitt
Director, DEQ
Todd.Parfitt@wyo.gov

Shannon Anderson
Powder River Basin Resource Council
sanderson@powderriverbasin.org

Jay Gilbertz
jGilbertz@yonkeetoner.com
*Attorney for Mary Brezik-Fisher and
David Fisher*

Jim Ruby
Environmental Quality Council
Jim.ruby@wyo.gov



Clayton Spence

From: Lynne Boomgaarden
To: [Jim Ruby](#); [andrew kuhlmann](#); [Shannon Anderson](#); [Jeffrey S. Pope \(JSPope@hollandhart.com\)](#); [Isaac Sutphin](#); [Jay Gilbertz](#); [James LaRock](#); [Dave Bagley](#)
Cc: [Clayton Gregersen](#); [j.sweeney@lhr-inc.com](#); [Michael Klein \(m.klein@lhr-inc.com\)](#)
Subject: RE: Brook Motion to Dismiss arguments on March 22, 2016
Date: Thursday, March 09, 2017 3:24:58 PM

Thank you for the update.

Lynne Boomgaarden



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From: Jim Ruby [mailto:jim.ruby@wyo.gov]

Sent: Thursday, March 09, 2017 3:00 PM

To: [andrew kuhlmann <andrew.kuhlmann@wyo.gov>](#); [Shannon Anderson <sanderson@powderriverbasin.org>](#); [Jeffrey S. Pope \(JSPope@hollandhart.com\)](#) <JSPope@hollandhart.com>; [Isaac Sutphin <insutphin@hollandhart.com>](#); [Jay Gilbertz <JGilbertz@yonkeetoner.com>](#); [Lynne Boomgaarden <lboomgaarden@crowleyfleck.com>](#); [James](#)

LaRock <james.larock@wyo.gov>; Dave Bagley <bagley@uwyo.edu>

Subject: Brook Motion to Dismiss arguments on March 22, 2016

Dear Counsel:

The rule making hearing scheduled to start at 9:00 on the 22nd has been cancelled therefore the arguments in Docket 17-4802, 4803 and 4804 on the Brook Motions to Dismiss will begin at 9:00 instead of immediately after the public hearing on the rule making.

Thanks

Jim Ruby

E-Mail to and from me, in connection with the transaction of public business, is subject to the Wyoming Public Records Act and may be disclosed to third parties.

From: Jim Ruby
To: [andrew kuhlmann](#); [Shannon Anderson](#); [Jeffrey S. Pope \(JSPope@hollandhart.com\)](#); [Isaac Sutphin](#); [Jay Gilbertz](#); [Lynne Boomgaarden](#); [James LaRock](#); [Dave Bagley](#)
Subject: Brook Motion to Dismiss arguments on March 22, 2016
Date: Thursday, March 09, 2017 2:59:38 PM

Dear Counsel:

The rule making hearing scheduled to start at 9:00 on the 22nd has been cancelled therefore the arguments in Docket 17-4802, 4803 and 4804 on the Brook Motions to Dismiss will begin at 9:00 instead of immediately after the public hearing on the rule making.

Thanks

Jim Ruby

From: Jim Ruby
To: [Jay Gilbertz](#)
Cc: [Isaac Sutphin \(INSutphin@hollandhart.com\)](#); [Jeffrey S. Pope \(JSPope@hollandhart.com\)](#); [Shannon Anderson](#); [Lynne Boomgaarden](#); [Clayton Gregersen](#)
Subject: Re: Scheduling Conference on Brook Mine
Date: Tuesday, March 07, 2017 1:28:37 PM

Thanks Jay

Jim

On Tue, Mar 7, 2017 at 11:32 AM, Jay Gilbertz <JGilbertz@yonkeetoner.com> wrote:

Mr. Ruby: I would like to attend the scheduling conference set for the 10th via telephone conference. Please advise what I need to do to facilitate participation in this manner.

Thank you.

Jay A. Gilbertz

Yonkee & Toner, LLP
P.O. Box 6288
319 West Dow Street
Sheridan, WY 82801
[\(307\) 674-7451](tel:(307)674-7451) (Phone)
[\(307\) 672-6250](tel:(307)672-6250) (Facsimile)

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From: Jim Ruby
To: [Shannon Anderson](#)
Subject: Re: FW: Scheduling conference
Date: Tuesday, March 07, 2017 1:28:26 PM

Thanks Shannon

Jim

On Tue, Mar 7, 2017 at 1:18 PM, Shannon Anderson <sanderson@powderriverbasin.org> wrote:

From: Shannon Anderson [mailto:sanderson@powderriverbasin.org]
Sent: Wednesday, March 01, 2017 12:32 PM
To: 'Lynne Boomgaarden'; 'Jim Ruby'; 'Jeffrey S. Pope (JSPope@hollandhart.com)'; 'Isaac Sutphin'; 'Jay Gilbertz'; 'andrew kuhlmann'
Cc: 'j.sweeney@lhr-inc.com'; 'Michael Klein (m.klein@lhr-inc.com)'; 'Wendy Drake'; 'Jenny Wacker'; 'Clayton Gregersen'; 'Blake A. Klinkner'
Subject: RE: Scheduling conference

Thanks, Jim. I will be appearing via telephone. Shannon

Shannon Anderson

Powder River Basin Resource Council

934 N. Main St., Sheridan, WY 82801

[307-672-5809](tel:307-672-5809) cell: [307-763-0995](tel:307-763-0995)

sanderson@powderriverbasin.org

Join us at www.powderriverbasin.org

Follow us at <https://twitter.com/PRBResCouncil>

From: Lynne Boomgaarden [mailto:lboomgaarden@crowleyfleck.com]
Sent: Wednesday, March 01, 2017 10:45 AM
To: Jim Ruby; Jeffrey S. Pope (JSPope@hollandhart.com); Isaac Sutphin; Shannon Anderson; Jay Gilbertz; andrew kuhlmann
Cc: 'j.sweeney@lhr-inc.com'; Michael Klein (m.klein@lhr-inc.com); Wendy Drake; Jenny Wacker; Clayton Gregersen; Blake A. Klinkner
Subject: RE: Scheduling conference

Thank you for the clarification. I will appear at the scheduling conference on behalf of Big Horn Coal in person on Friday, March 10, 2017.

Regards,

Lynne

Lynne Boomgaarden



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From: Jim Ruby [<mailto:jim.ruby@wyo.gov>]

Sent: Wednesday, March 01, 2017 10:26 AM

To: Jeffrey S. Pope (JSPope@hollandhart.com) <JSPope@hollandhart.com>; Isaac Sutphin <insutphin@hollandhart.com>; Shannon Anderson <sanderson@powderriverbasin.org>; Lynne Boomgaarden <boomgaarden@crowleyfleck.com>; Jay Gilbertz <JGilbertz@yonkeetoner.com>; andrew kuhlmann <andrew.kuhlmann@wyo.gov>

Subject: Scheduling conference

Dear Counsel:

You should have received an Order for Scheduling conference. The day of the week is wrong. It is FRIDAY, May 10th, 2017 at 1:30 p.m. NOT Wednesday the 10th.

I am sorry for the error. By this age I really should be able to read a calendar.

Thanks

Jim Ruby

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From: Shannon Anderson
To: [Jim Ruby](#)
Subject: FW: Scheduling conference
Date: Tuesday, March 07, 2017 1:18:45 PM

From: Shannon Anderson [mailto:sanderson@powderriverbasin.org]
Sent: Wednesday, March 01, 2017 12:32 PM
To: 'Lynne Boomgaarden'; 'Jim Ruby'; 'Jeffrey S. Pope (JSPope@hollandhart.com)'; 'Isaac Sutphin'; 'Jay Gilbertz'; 'andrew kuhlmann'
Cc: 'j.sweeney@lhr-inc.com'; 'Michael Klein (m.klein@lhr-inc.com)'; 'Wendy Drake'; 'Jenny Wacker'; 'Clayton Gregersen'; 'Blake A. Klinkner'
Subject: RE: Scheduling conference

Thanks, Jim. I will be appearing via telephone. Shannon

Shannon Anderson
Powder River Basin Resource Council
934 N. Main St., Sheridan, WY 82801
307-672-5809 cell: 307-763-0995
sanderson@powderriverbasin.org
Join us at www.powderriverbasin.org
Follow us at <https://twitter.com/PRBResCouncil>

From: Lynne Boomgaarden [mailto:lboomgaarden@crowleyfleck.com]
Sent: Wednesday, March 01, 2017 10:45 AM
To: Jim Ruby; Jeffrey S. Pope (JSPope@hollandhart.com); Isaac Sutphin; Shannon Anderson; Jay Gilbertz; andrew kuhlmann
Cc: 'j.sweeney@lhr-inc.com'; Michael Klein (m.klein@lhr-inc.com); Wendy Drake; Jenny Wacker; Clayton Gregersen; Blake A. Klinkner
Subject: RE: Scheduling conference

Thank you for the clarification. I will appear at the scheduling conference on behalf of Big Horn Coal in person on Friday, March 10, 2017.

Regards,
Lynne

Lynne Boomgaarden



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From: Jim Ruby [<mailto:jim.ruby@wyo.gov>]

Sent: Wednesday, March 01, 2017 10:26 AM

To: Jeffrey S. Pope (JSPOpe@hollandhart.com) <JSPOpe@hollandhart.com>; Isaac Sutphin <insutphin@hollandhart.com>; Shannon Anderson <sanderson@powderriverbasin.org>; Lynne Boomgaarden <lboomgaarden@crowleyfleck.com>; Jay Gilbertz <JGilbertz@yonkeetoner.com>; andrew kuhlmann <andrew.kuhlmann@wyo.gov>

Subject: Scheduling conference

Dear Counsel:

You should have received an Order for Scheduling conference. The day of the week is wrong. It is FRIDAY, May 10th, 2017 at 1:30 p.m. NOT Wednesday the 10th.

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Thanks

Jim Ruby

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From: Jay Gilbertz
To: [Jim Ruby](#)
Cc: [Isaac Sutphin \(ISutphin@hollandhart.com\)](#); [Jeffrey S. Pope \(JSPope@hollandhart.com\)](#); [Shannon Anderson](#); [Lynne Boomgaarden](#); [Clayton Gregersen](#)
Subject: Scheduling Conference on Brook Mine
Date: Tuesday, March 07, 2017 11:32:19 AM
Importance: High

Mr. Ruby: I would like to attend the scheduling conference set for the 10th via telephone conference. Please advise what I need to do to facilitate participation in this manner.

Thank you.

Jay A. Gilbertz

Yonkee & Toner, LLP
P.O. Box 6288
319 West Dow Street
Sheridan, WY 82801
(307) 674-7451 (Phone)
(307) 672-6250 (Facsimile)

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From: Jay Gilbertz
To: [Jim Ruby](#); [Jeffrey S. Pope \(JSPOpe@hollandhart.com\)](#); [Isaac Sutphin](#); [Shannon Anderson](#); [Lynne Boomgaarden](#); [andrew kuhlmann](#)
Cc: [Mary Brezik Fisher](#)
Subject: RE: Scheduling conference
Date: Wednesday, March 01, 2017 1:57:51 PM

I will attend the scheduling conference via telephone.

Jay A. Gilbertz
Yonkee & Toner, LLP
P.O. Box 6288
Sheridan, WY 82801
(307) 674-7451 (Phone)

From: Jim Ruby [mailto:jim.ruby@wyo.gov]
Sent: Wednesday, March 01, 2017 10:26 AM
To: Jeffrey S. Pope (JSPOpe@hollandhart.com) <JSPOpe@hollandhart.com>; Isaac Sutphin <insutphin@hollandhart.com>; Shannon Anderson <sanderson@powderriverbasin.org>; Lynne Boomgaarden <lboomgaarden@crowleyfleck.com>; Jay Gilbertz <JGilbertz@yonkeetoner.com>; andrew kuhlmann <andrew.kuhlmann@wyo.gov>
Subject: Scheduling conference

Dear Counsel:

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Thanks

Jim Ruby

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From: Shannon Anderson
To: [Lynne Boomgaarden](#); [Jim Ruby](#); [Jeffrey S. Pope](#); [Isaac Sutphin](#); [Jay Gilbertz](#); [andrew kuhlmann](#)
Cc: [j.sweeney@lhr-inc.com](#); [Michael Klein](#); [Wendy Drake](#); [Jenny Wacker](#); [Clayton Gregersen](#); [Blake A. Klinkner](#)
Subject: RE: Scheduling conference
Date: Wednesday, March 01, 2017 12:32:10 PM

Thanks, Jim. I will be appearing via telephone. Shannon

Shannon Anderson
Powder River Basin Resource Council
934 N. Main St., Sheridan, WY 82801
307-672-5809 cell: 307-763-0995
sanderson@powderriverbasin.org
Join us at www.powderriverbasin.org
Follow us at <https://twitter.com/PRBResCouncil>

From: Lynne Boomgaarden [mailto:lboomgaarden@crowleyfleck.com]
Sent: Wednesday, March 01, 2017 10:45 AM
To: Jim Ruby; Jeffrey S. Pope (JSPOpe@hollandhart.com); Isaac Sutphin; Shannon Anderson; Jay Gilbertz; andrew kuhlmann
Cc: j.sweeney@lhr-inc.com; Michael Klein (m.klein@lhr-inc.com); Wendy Drake; Jenny Wacker; Clayton Gregersen; Blake A. Klinkner
Subject: RE: Scheduling conference

Thank you for the clarification. I will appear at the scheduling conference on behalf of Big Horn Coal in person on Friday, March 10, 2017.

Regards,
Lynne

Lynne Boomgaarden



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From: Jim Ruby [<mailto:jim.ruby@wyo.gov>]

Sent: Wednesday, March 01, 2017 10:26 AM

To: Jeffrey S. Pope (JSPOpe@hollandhart.com) <JSPOpe@hollandhart.com>; Isaac Sutphin <insutphin@hollandhart.com>; Shannon Anderson <sanderson@powderriverbasin.org>; Lynne Boomgaarden <lboomgaarden@crowleyfleck.com>; Jay Gilbertz <JGilbertz@yonkeetoner.com>; andrew kuhlmann <andrew.kuhlmann@wyo.gov>

Subject: Scheduling conference

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Jim Ruby

E-Mail to and from me, in connection with the transaction of public business, is subject to the Wyoming Public Records Act and may be disclosed to third parties.

From: Lynne Boomgaarden
To: [Jim Ruby](#); [Jeffrey S. Pope \(JSPope@hollandhart.com\)](#); [Isaac Sutphin](#); [Shannon Anderson](#); [Jay Gilbertz](#); [andrew kuhlmann](#)
Cc: [j.sweeney@lhr-inc.com](#); [Michael Klein \(m.klein@lhr-inc.com\)](#); [Wendy Drake](#); [Jenny Wacker](#); [Clayton Gregersen](#); [Blake A. Klinkner](#)
Subject: RE: Scheduling conference
Date: Wednesday, March 01, 2017 10:44:57 AM

Thank you for the clarification. I will appear at the scheduling conference on behalf of Big Horn Coal in person on Friday, March 10, 2017.

Regards,
Lynne

Lynne Boomgaarden



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From: Jim Ruby [mailto:jim.ruby@wyo.gov]

Sent: Wednesday, March 01, 2017 10:26 AM

To: Jeffrey S. Pope (JSPope@hollandhart.com) <JSPope@hollandhart.com>; Isaac Sutphin <insutphin@hollandhart.com>; Shannon Anderson <sanderson@powderriverbasin.org>; Lynne

Boomgaarden <lboomgaarden@crowleyfleck.com>; Jay Gilbertz <JGilbertz@yonkeetoner.com>;
andrew kuhlmann <andrew.kuhlmann@wyo.gov>

Subject: Scheduling conference

Dear Counsel:

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Jim Ruby

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From: Jim Ruby
To: [Jeffrey S. Pope \(JPope@hollandhart.com\)](mailto:JPope@hollandhart.com); [Isaac Sutphin](#); [Shannon Anderson](#); [Lynne Boomgaarden](#); [Jay Gilbertz](#); [andrew kuhlmann](#)
Subject: Scheduling conference
Date: Wednesday, March 01, 2017 10:26:26 AM

Dear Counsel:

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Thanks

Jim Ruby

From: Shannon Anderson
To: [Jim Ruby](#); [Joe Girardin](#)
Subject: RE: Brook
Date: Tuesday, February 28, 2017 1:30:22 PM

Hi Jim, we spoke with Brooke Collins today who will not be submitting a separate petition. She would like her objections considered with our petition so if you could add her to the list that would be great. Thanks so much, Shannon

From: Shannon Anderson [mailto:sanderson@powderriverbasin.org]
Sent: Tuesday, February 28, 2017 10:35 AM
To: 'Jim Ruby'; 'Joe Girardin'
Subject: RE: Brook

Hi Jim,

We are including the objections of members of our organization: John and Vanessa Buyok, Gillian Malone, Sadie Clarendon, Jane Buyok, Anton Bocek, Joan Tellez, Wendy Condrat, and William Bensel

And the maps, as well as the entire report from Dr. Marino, were sent over from DEQ last round as it was an attachment to our objections. Part 1:
<https://eqc.wyo.gov/Public/ViewPublicDocument.aspx?DocumentId=12751> and Part 2:
<https://eqc.wyo.gov/Public/ViewPublicDocument.aspx?DocumentId=12753>

Just let me know if you need anything further.

Thanks!
Shannon

Shannon Anderson
Powder River Basin Resource Council
934 N. Main St., Sheridan, WY 82801
307-672-5809 cell: 307-763-0995
sanderson@powderriverbasin.org
Join us at www.powderriverbasin.org
Follow us at <https://twitter.com/PRBResCouncil>

From: Jim Ruby [mailto:jim.ruby@wyo.gov]
Sent: Tuesday, February 28, 2017 10:23 AM
To: Shannon Anderson; Joe Girardin
Subject: Brook

Hi Shannon. we will be setting up your case online. We received your paper filing in the Brook matter. Can you email me the list of previous objectors that you want to include in your new case as exhibits. Also your maps that you sent. Are those filed in the other matter as well? If so can you direct us to where they are or what they are identified as. I want to make sure we get everything moved over that you are wanting.

Thanks.

Jim

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From: Shannon Anderson
To: [Jim Ruby](#)
Subject: RE: Question
Date: Tuesday, February 28, 2017 10:35:50 AM

They were attachments to our objection letter, so should be part of the objections. Thanks!

Shannon Anderson
Powder River Basin Resource Council
934 N. Main St., Sheridan, WY 82801
307-672-5809 cell: 307-763-0995
sanderson@powderriverbasin.org
Join us at www.powderriverbasin.org
Follow us at <https://twitter.com/PRBResCouncil>

From: Jim Ruby [mailto:jim.ruby@wyo.gov]
Sent: Tuesday, February 28, 2017 10:32 AM
To: Shannon Anderson
Subject: Question

Hi again:

As we were going through the paper you sent we came across the following stapled together. Energy Journal Q and A: Randall Atkins, Ramaco dated October 15, 2016; Letter to you from Coal Mine and Safety District 9 dated Dec. 2, 2016; Letter to Randall Atkins from Coal Mine Safety and Health District 9 dated June 9, 2016; Letter to Mine Safety and Health Administration District 9, FOIA Request from PRBRC dated Nov. 22, 2016; and finally a Letter to Mr. Atkins from the DEQ dated Feb. 24, 2016

Are these intended to be filed with us or are they something else. They are not identified in your Exhibit List.

Thanks

Jim

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From: Shannon Anderson
To: [Jim Ruby](#); [Joe Girardin](#)
Subject: RE: Brook
Date: Tuesday, February 28, 2017 10:34:41 AM

Hi Jim,

We are including the objections of members of our organization: John and Vanessa Buyok, Gillian Malone, Sadie Clarendon, Jane Buyok, Anton Bocek, Joan Tellez, Wendy Condrat, and William Bense

And the maps, as well as the entire report from Dr. Marino, were sent over from DEQ last round as it was an attachment to our objections. Part 1:

<https://eqc.wyo.gov/Public/ViewPublicDocument.aspx?DocumentId=12751> and Part 2:
<https://eqc.wyo.gov/Public/ViewPublicDocument.aspx?DocumentId=12753>

Just let me know if you need anything further.

Thanks!
Shannon

Shannon Anderson
Powder River Basin Resource Council
934 N. Main St., Sheridan, WY 82801
307-672-5809 cell: 307-763-0995
sanderson@powderriverbasin.org
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Follow us at <https://twitter.com/PRBResCouncil>

From: Jim Ruby [mailto:jim.ruby@wyo.gov]
Sent: Tuesday, February 28, 2017 10:23 AM
To: Shannon Anderson; Joe Girardin
Subject: Brook

Hi Shannon. we will be setting up your case online. We received your paper filing in the Brook matter. Can you email me the list of previous objectors that you want to include in your new case as exhibits. Also your maps that you sent. Are those filed in the other matter as well? If so can you direct us to where they are or what they are identified as. I want to make sure we get everything moved over that you are wanting.

Thanks.

Jim

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From: Jim Ruby
To: [Shannon Anderson](#)
Subject: Question
Date: Tuesday, February 28, 2017 10:32:16 AM

Hi again:

As we were going through the paper you sent we came across the following stapled together. Energy Journal Q and A: Randall Atkins, Ramaco dated October 15, 2016; Letter to you from Coal Mine and Safety District 9 dated Dec. 2, 2016; Letter to Randall Atkins from Coal Mine Safety and Health District 9 dated June 9, 2016; Letter to Mine Safety and Health Administration District 9, FOIA Request from PRBRC dated Nov. 22, 2016; and finally a Letter to Mr. Atkins from the DEQ dated Feb. 24, 2016

Are these intended to be filed with us or are they something else. They are not identified in your Exhibit List.

Thanks

Jim

From: Jim Ruby
To: [Shannon Anderson](#); [Joe Girardin](#)
Subject: Brook
Date: Tuesday, February 28, 2017 10:23:26 AM

Hi Shannon. we will be setting up your case online. We received your paper filing in the Brook matter. Can you email me the list of previous objectors that you want to include in your new case as exhibits. Also your maps that you sent. Are those filed in the other matter as well? If so can you direct us to where they are or what they are identified as. I want to make sure we get everything moved over that you are wanting.

Thanks.

Jim

From: Jim Ruby
To: [Shannon Anderson](#)
Cc: [Isaac Sutphin](#); [James LaRock](#); [Jay Gilbertz](#); [Jeffrey S. Pope](#); [Lynne Boomgaarden](#); [andrew kuhlmann](#); [bpcharlie@wbaccess.net](#); [Mary Brezik Fisher](#); [Michael Klein](#); [j.sweeney@lhr-inc.com](#)
Bcc: [ryan schelhaas](#); [Dave Bagley](#)
Subject: Re: Brook Mine
Date: Tuesday, February 28, 2017 9:12:27 AM

Hi Ms. Anderson:

The hearing officer has not decided upon consolidation yet because of the Motion to Dismiss pending in 17-4802. Under the consolidation rules the cases are consolidated under the earliest docket. If the Big Horn matter were to be dismissed than the consolidation would be under the Fischer docket and not the Big Horn case. If your client and other persons wish to file "friend of the court" briefs in the Big Horn matter than the process for considering those filings set forth in the rules of civil procedure and rules for appellate procedure would be followed by the Council.

Sincerely,

Jim Ruby

On Tue, Feb 28, 2017 at 8:39 AM, Shannon Anderson <sanderson@powderriverbasin.org> wrote:

Mr. Ruby:

I am just following up on this and to see if the EQC will be consolidating the dockets. I noticed that there is now a scheduled hearing on the Motion to Dismiss in Docket 4802 and I am wondering if the EQC would welcome briefing from the other parties. While the motion is partially specific to Big Horn Coal, it may have ramifications for the other petitions and we would like to be able to preserve our rights and remedies.

Thank you,

Shannon

Shannon Anderson

Powder River Basin Resource Council

934 N. Main St., Sheridan, WY 82801

[307-672-5809](tel:307-672-5809) cell: [307-763-0995](tel:307-763-0995)

sanderson@powderriverbasin.org

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Follow us at <https://twitter.com/PRBResCouncil>

From: Jim Ruby [mailto:jim.ruby@wyo.gov]

Sent: Friday, February 24, 2017 11:24 AM

To: Isaac Sutphin; James LaRock; Jay Gilbertz; Jeffrey S. Pope (JSPope@hollandhart.com); Lynne Boomgaarden; Shannon Anderson; andrew kuhlmann; bpcharlie@wbaccess.net

Cc: Mary Brezik Fisher; Michael Klein (m.klein@lhr-inc.com); j.sweeney@lhr-inc.com

Subject: Re: Brook Mine

I am sorry. Typos. It is 4802. Not 4801. Thank you for catching that.

Jim

On Fri, Feb 24, 2017 at 10:18 AM Jay Gilbertz <JGilbertz@yonkeetoner.com> wrote:

The Fishers would agree to consolidation at this stage of the proceedings.

Jay A. Gilbertz

Yonkee & Toner, LLP
P.O. Box 6288
Sheridan, WY 82801
([307\) 674-7451](tel:3076747451) (Phone)

From: Lynne Boomgaarden [mailto:lboomgaarden@crowleyfleck.com]

Sent: Friday, February 24, 2017 10:03 AM

To: Jim Ruby <jim.ruby@wyo.gov>; Isaac Sutphin <insutphin@hollandhart.com>; Shannon Anderson <sanderson@powderriverbasin.org>; Jay Gilbertz <JGilbertz@yonkeetoner.com>;

andrew kuhlmann <andrew.kuhlmann@wyo.gov>; Jeffrey S. Pope (JSPope@hollandhart.com)
<JSPope@hollandhart.com>; bpcharlie@wbaccess.net; James LaRock <james.larock@wyo.gov>
Cc: Michael Klein (m.klein@lhr-inc.com) <m.klein@lhr-inc.com>; j.sweeney@lhr-inc.com
Subject: RE: Brook Mine

Mr. Ruby – Can you please clarify whether the case number for intervention shouldn't be 17-4802, since 17-4801 was the docket that was dismissed? Big Horn Coal supports the Council hearing these matters together. Big Horn would not object to intervention by other objectors in EQC Docket 17-4802, or in the alternative, to the consolidation of EQC Docket 17-4802 with Dockets initiated by other objectors.

Regards,

Lynne

Lynne Boomgaarden

Lynne Boomgaarden



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From: Jim Ruby [<mailto:jim.ruby@wyo.gov>]

Sent: Friday, February 24, 2017 9:20 AM

To: Lynne Boomgaarden <lboomgaarden@crowleyfleck.com>; Isaac Sutphin <insutphin@hollandhart.com>; Shannon Anderson <sanderson@powderriverbasin.org>; Jay Gilbertz <JGilbertz@yonkeetoner.com>; andrew kuhlmann <andrew.kuhlmann@wyo.gov>; Jeffrey S. Pope (JSPope@hollandhart.com) <JSPope@hollandhart.com>; bpcharlie@wbaccess.net; James LaRock <james.larock@wyo.gov>

Subject: Brook Mine

Dear Parties and Counsel:

As of now we have two appeals in the Brook Mine matter. The Council has three ways of handling this matter. We can have separate cases for each and every case which means separate hearings for each case. We can consolidate the cases at some point through a consolidation order or we can treat them as motions to intervene. The Council would appreciate your input on the process. If you wish to treat the process as motions to intervene than the Council would like you to file a one page motion requesting that your petitions (s) be treated as motions to intervene or if you haven't filed yet than you can simply make your choice and file a petition for contested case or file motions to intervene. The case number for intervention is 17-4801.

Sincerely,

Jim Ruby



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From: Shannon Anderson
To: [Jim Ruby](#); [Isaac Sutphin](#); [James LaRock](#); [Jay Gilbertz](#); [Jeffrey S. Pope](#); [Lynne Boomgaarden](#); [andrew kuhlmann](#); [bpcharlie@wbaccess.net](#)
Cc: [Mary Brezik Fisher](#); [Michael Klein](#); [j.sweeney@lhr-inc.com](#)
Subject: RE: Brook Mine
Date: Tuesday, February 28, 2017 8:40:02 AM

Mr. Ruby:

I am just following up on this and to see if the EQC will be consolidating the dockets. I noticed that there is now a scheduled hearing on the Motion to Dismiss in Docket 4802 and I am wondering if the EQC would welcome briefing from the other parties. While the motion is partially specific to Big Horn Coal, it may have ramifications for the other petitions and we would like to be able to preserve our rights and remedies.

Thank you,
Shannon

Shannon Anderson
Powder River Basin Resource Council
934 N. Main St., Sheridan, WY 82801
307-672-5809 cell: 307-763-0995
sanderson@powderriverbasin.org
Join us at www.powderriverbasin.org
Follow us at <https://twitter.com/PRBResCouncil>

From: Jim Ruby [mailto:jim.ruby@wyo.gov]
Sent: Friday, February 24, 2017 11:24 AM
To: Isaac Sutphin; James LaRock; Jay Gilbertz; Jeffrey S. Pope (JSPope@hollandhart.com); Lynne Boomgaarden; Shannon Anderson; andrew kuhlmann; bpcharlie@wbaccess.net
Cc: Mary Brezik Fisher; Michael Klein (m.klein@lhr-inc.com); j.sweeney@lhr-inc.com
Subject: Re: Brook Mine

I am sorry. Typos. It is 4802. Not 4801. Thank you for catching that.

Jim

On Fri, Feb 24, 2017 at 10:18 AM Jay Gilbertz <JGilbertz@yonkeetoner.com> wrote:

The Fishers would agree to consolidation at this stage of the proceedings.

Jay A. Gilbertz
Yonkee & Toner, LLP
P.O. Box 6288
Sheridan, WY 82801
(307) 674-7451 (Phone)

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Sent: Friday, February 24, 2017 10:03 AM

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Lynne

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Sincerely,

Jim Ruby



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To: [Jay Gilbertz](#); Andrew.kuhlmann@wyo.gov; james.larock@wyo.gov; todd.parfitt@wyo.gov; alan.edwards@wyo.gov; jim.ruby@wyo.gov; insutphin@hollandhart.com; jspope@hollandhart.com; tlsansonetti@hollandhart.com; [Lynne Boomgaarden](#); [Clayton Gregersen](#); bpcharlie@wbaccess.net; [EQC-All@wyo.gov](#)
Subject: Re Brook Mine - Powder River Basin Resource Council Petition for Hearing
Date: Friday, February 24, 2017 3:25:42 PM
Attachments: [Petition for EQC Hearing.pdf](#)

Please see the attached. Exhibits are not being provided electronically as you all have them from the previous EQC Docket.

Hope you all have a nice weekend,
Shannon

Shannon Anderson
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sanderson@powderriverbasin.org
(307) 672-5809

BEFORE THE ENVIRONMENTAL QUALITY COUNCIL
STATE OF WYOMING

In Re Brook Mine Permit Application)	
)	
TFN 6 2-025	)	EQC Docket No. _____
)	

**PETITION TO THE ENVIRONMENTAL QUALITY COUNCIL
FOR A HEARING ON DEQ's DENIAL OF AN INFORMAL CONFERENCE AND ON
OBJECTIONS TO THE BROOK MINE PERMIT**

INTRODUCTION

1. Powder River Basin Resource Council ("PRBRC" or "Resource Council")¹ respectfully petitions the Environmental Quality Council ("EQC" or "Council") to hold a hearing on the Resource Council's objections to Brook Mining Co., LLC's ("Brook" or "company" or "applicant") coal mine permit application and the Department of Environmental Quality's ("DEQ") denial of informal conference public participation opportunities and due process rights as provided for under the Environmental Quality Act and the Surface Mining Control and Reclamation Act ("SMCRA").

¹ The Resource Council's address is 934 N. Main St., Sheridan, WY 82801. All correspondence can be addressed to Shannon Anderson at the postal address, sanderson@powderriverbasin.org, or (307) 672-5809.

2. The Resource Council submitted its objections to the permit application to the DEQ on January 27, 2017, requesting an informal conference before the Department. The objections and request for informal conference are attached as Exhibit 1.

3. Under the Environmental Quality Act and associated regulations, and corresponding federal law and regulations under SMCRA, DEQ was required to hold an informal conference on the Resource Council's objections. DEQ Rules of Practice & Procedure, Ch. 3 § 3(a) ("The conference shall be held in the locality of the operation or at the state capitol, at the option of the requester, within 20 days after the final date for filing objections unless a different period is stipulated to by the parties"); 30 U.S.C. § 1263(b) ("If written objections are filed and an informal conference requested, the regulatory authority shall then hold an informal conference in the locality of the proposed mining, if requested within a reasonable time of the receipt of such objections or request.").

4. However, DEQ denied the Resource Council's request for an informal conference, arguing that DEQ is afforded discretion in deciding whether or not to grant an informal conference request. DEQ's letter to the Resource Council is attached as Exhibit 2.

5. We respectfully ask the EQC to, without undue delay, schedule a hearing on DEQ's denial of the informal conference, and after such hearing, remand the Resource Council's objections to the permit application back to DEQ for consideration at an informal conference proceeding.

6. If the EQC is unwilling or unable to do that, we ask that the EQC consider our objections to Brook's coal mine permit application at a contested case hearing. In making a request for

hearing, in no way is the Resource Council waiving any of its rights or remedies related to the denial of the informal conference.²

7. We also respectfully ask the EQC to issue a temporary order preventing the DEQ from approving the permit until such time as the hearing is held and an order is issued therefrom, in accordance with Sections 406(k) and 406(p) of the Environmental Quality Act.

STATEMENT OF JURISDICTION

8. The EQC has jurisdiction to hold a hearing on DEQ's denial of the informal conference and/or the Resource Council's objections to the permit application. DEQ Rules of Practice and Procedure, Ch. 1, §§ 3, 17(b).

9. This petition is timely filed within thirty (30) days of receipt of DEQ's decision denying the request for an informal conference.³ *Id.* at § 17(b).

STATEMENT OF FACTS AND LAW

10. According to the Environmental Quality Act and SMCRA, "No mining operation may be commenced or conducted on land for which there is not in effect a valid mining permit to which the operator possesses the rights." W.S. § 35-11-405(a).

11. Requirements for coal mine permit applications as well as grounds for approval and denial are governed by Section 406 of the Wyoming Environmental Quality Act, along with the Land Quality Division's Rule and Regulations implementing the Environmental Quality Act.

² Separately, the Resource Council will be filing a petition with the Office of Surface Mining Reclamation and Enforcement ("OSMRE") pursuant to 30 C.F.R. § 733.12(a)(2) to evaluate the state program given the violations of SMCRA's permitting requirements related to the Brook Mine permit, including the failure to hold an informal conference in the location of the proposed mining operation, as requested by the Resource Council.

³ DEQ's decision is dated January 30, 2017, and it was received by the Resource Council via postal mail on February 2, 2017. Although DEQ did not hold an informal conference, and therefore there is no administrative decision following an informal conference to appeal, the Resource Council is still assuming that this appeal of DEQ's decision not to hold an informal conference falls under Ch. 1 § 17(b) related to informal conferences.

12. Specifically, “The applicant for a surface coal mining permit has the burden of establishing that his application is in compliance with this act and all applicable state laws.” *Id.* at § 406(n).

13. Additionally, before a coal mining permit can be approved, DEQ must make certain findings related to the application’s compliance with the Wyoming Environmental Quality Act, DEQ regulations, and SMCRA. *Id.* at §§ 406(n)(i)-(vii). As far as the Resource Council knows, these findings have yet to be made.

14. Requirements for mine reclamation bonds are governed by Section 417 of the Environmental Quality Act and corresponding DEQ regulations.

15. In response to the required public notice, the Resource Council timely filed objections to Brook’s coal mine permit application. The objections included a variety of issues ranging from incomplete and inaccurate information in the permit application to more technical issues such as hydrology and subsidence concerns and reclamation bond requirements.

16. Members of the Resource Council also timely filed objections to Brook’s coal mine permit application. John and Vanessa Buyok, Gillian Malone, Sadie Clarendon, Jane Buyok, Anton Bocek, Joan Tellez, Wendy Condrat, and William Bensel filed objections and their objections are hereby incorporated, to the extent possible into the Resource Council’s objections. Exhibits 3-10. Their objections also demonstrate that the Resource Council, through representation of its members, is an “interested person” within the meaning of the Wyoming Environmental Quality and Section 406(k) and a “person with an interest which is or may be adversely affected” within the meaning of Ch.1, § 17(b) of DEQ’s Rules of Practice and Procedure.

17. The objections of the Resource Council, along with objections of our members, included a request for an informal conference.

18. DEQ denied the requests for an informal conference on January 30, 2017 and referred all of the submitted objections to the EQC (regardless of whether the objecting party requested an informal conference, hearing, or neither type of proceeding). *See* Exhibit 2.

19. The EQC subsequently opened Docket 17-4801, held a scheduling conference, and entered into a scheduling order for a hearing.

20. However, after motions from the parties, including the Resource Council, filed February 6, 2017, the EQC vacated the hearing and requested additional briefing from the parties regarding the EQC's jurisdiction and authority to hear the case.

21. On February 21, 2017, after briefing and argument from the parties, the EQC voted to dismiss Docket 17-4801. However, in doing so, EQC members acknowledged that the parties could come back and file a petition for a hearing.⁴

ISSUES PRESENTED FOR REVIEW AT THE HEARING

22. Paragraphs 1-21 above are hereby incorporated.

23. DEQ cannot lawfully issue a permit for the Brook Mine unless the application demonstrates that it meets the requirements of applicable laws and regulations *and* unless DEQ makes the required findings of Section 406(n).

24. Additionally, DEQ cannot lawfully issue a permit for the Brook Mine unless the agency follows the required public participation process afforded under its rules and corresponding federal law and regulations pursuant to SMCRA. DEQ is under legal obligation to hold an informal conference on the Resource Council's objections. DEQ Rules of Practice & Procedure

⁴ At this time, the transcript is unavailable for specific citation.

Ch. 3 § 3(a); 30 U.S.C. § 1263(b); 30 C.F.R. § 773.6(c). DEQ is also under legal obligation to hold such an informal conference in the location of the proposed mining operation (i.e. Sheridan County) and to provide access to the proposed mine site, if requested. *Id.*

25. DEQ cannot waive these requirements because only Congress can exempt companies from compliance, through an amendment to SMCRA. DEQ's regulations provide mandatory – not discretionary – actions on the part of the agency in relation to its obligations to afford public participation opportunities.

26. DEQ regulations require information in a permit application to be “current” . . . “accurate and complete.” DEQ Land Quality Division Rules and Regulations, Ch. 2 § 1. The mine plan must include “[a] complete operations plan proposed to be conducted during the life of the mine” with an accurate estimate of “the number of acres that will be affected annually” and the “anticipated annual and total production by tonnage.” *Id.* at § 5(a)(i). As discussed in Sections 1 and 2 of the Resource Council's objections, the mine plan at issue here does not contain current, accurate, or complete information and does not meet the requirements of DEQ's regulations.

27. The mining and reclamation plan does not include “a plan to minimize the disturbances to the prevailing hydrologic balance at the minesite and in associated offsite areas and to the quality and quantity of water in surface and ground water systems both during and after mining operations and during reclamation” as required by the Environmental Quality Act and corresponding DEQ regulations. W.S. § 35-11-406(b)(xvii).

28. The proposed mine has not “been designed to prevent material damage to the hydrologic balance outside the permit area” are required by the Environmental Quality Act and corresponding DEQ regulations. *Id.* at § 406(n)(iii). DEQ is unable to make this finding until its Cumulative Hydrologic Impacts Assessment (“CHIA”) is completed.

29. DEQ is unable to make a finding that “the proposed operation would . . . [n]ot interrupt, discontinue, or preclude farming on alluvial valley floors” as required by Section 406(n)(v) as DEQ has yet to finish its mapping and determinations related to alluvial valley floors in adjacent areas as required by DEQ regulations. Land Quality Rules and Regulations, Ch. 12 § 1(a)(i).

30. The mine plan does not sufficiently include “[t]he methods of diverting surface water around the affected lands where necessary to effectively control pollution or unnecessary erosion” as required by the Environmental Quality Act and associated DEQ regulations. W.S. 35-11-406(b)(xv).

31. The mine plan does not include an appropriate plan to put out coal fires or properly treat or dispose of other “materials constituting a fire, health, or safety hazard.” W.S. 35-11-406(b)(ix).

32. The proposed reclamation bond does not cover the *entire* cost of surface and water reclamation, as required to be posted *prior* to any mining on the site. *See* W.S. § 35-11-416(c)(i) (the bond should equal the “cost of reclaiming the affected land disturbed” . . . “plus the administrator’s estimate of the additional cost to the state of bringing in personnel and equipment should the operator fail or the site be abandoned.”).

33. As discussed in the expert report submitted with the Resource Council’s objections, the subsidence control plan does not achieve its required objective: to control and prevent subsidence at the mine site. The expert report concludes that “There is a serious risk of surface subsidence from roof collapse in the proposed mining area.” Subsidence “constitutes a public nuisance or endangers the public and safety” of local landowners. W.S. § 35-11-406(m)(vii). It also has implications for whether the “reclamation plan can accomplish reclamation as required.”

Id. at § 406(n)(ii). And it has implications for creating damage to the hydrologic balance both within the permit area and in outside areas. *Id.* at §§ 406(b)(xvii), 406(n)(iii).

34. The company's application does not comply with DEQ requirements that the application include "[a] list identifying the Mine Safety and Health Administration identification number for all mine facilities that require MSHA approval and licenses, permits or approvals needed by the applicant to conduct the proposed operation, whether and when they have been issued, the issuing authority, and the steps to be taken to comply with the requirements." Land Quality Rules and Regulations, Ch. 2 § 2(a)(v).

35. The Resource Council reserves the right to raise any additional issues brought forth in its objection letter or in other objection letters submitted to DEQ.

36. The Resource Council also reserves the right to provide additional evidence and support for its objections.

37. The Resource Council further reserves the right to supplement its objections and grounds for hearing if and when DEQ makes any findings pursuant to Sections 406(n)(i)-(vii).

38. The Resource Council further reserves the right to supplement its objections and ground for hearing based on discovery provided by DEQ and Brook as part of this hearing process.

REQUEST FOR TEMPORARY RELIEF

39. Paragraphs 1-38 above are hereby incorporated.

40. The Resource Council requests that the EQC prevent DEQ from issuing the permit until such time as there is a final order from an informal conference held by DEQ or from a hearing by the EQC on the Resource Council's objections to the permit.

41. Preventing DEQ from issuing a decision on the permit until after the hearing is consistent with W.S. § 35-11-406(p) (requiring the DEQ Director to "issue or deny the permit no later than

fifteen (15) days from receipt of any findings of fact and decision of the environmental quality council.”) Additionally, as discussed in paragraph 13, *supra*, DEQ has yet to make findings required before the permit can be issued.

PRAYER FOR RELIEF

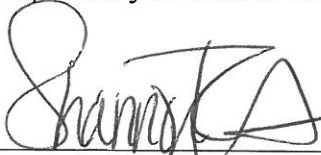
42. For the reasons set forth above, the EQC should immediately issue an order remanding the Resource Council’s objections to the DEQ and ordering the agency to hold an informal conference on the objections, held pursuant to the Environmental Quality Act, SMCRA, and associated state and federal regulations.

43. However, if the EQC declines to issue such an order, we request that the EQC hold a contested case hearing to consider the objections of the Resource Council and other parties.

44. The EQC should grant temporary relief to the Resource Council by ordering a stay on any permitting action by DEQ pending the outcome of the requested hearing.

45. After the hearing, the EQC should issue a decision to deny the permit application and should submit such decision to the DEQ for its action.

Respectfully submitted this 24th day of February, 2017.



Shannon Anderson (Wyo. Bar No. 6-4402)
Powder River Basin Resource Council
934 N. Main St., Sheridan, WY 82801
(307) 672-5809
sanderson@powderriverbasin.org

CERTIFICATE OF SERVICE

The undersigned hereby certifies that on this 24th day of February, 2017, the foregoing PETITION TO THE ENVIRONMENTAL QUALITY COUNCIL FOR A HEARING was served on the following parties via electronic and USPS certified mail, return receipt requested:

David Bagley
Chairman, Environmental Quality Council
122 W. 25th St., Room 1714
Cheyenne, WY 82002
EQC-All@wyo.gov
Jim.ruby@wyo.gov

Todd Parfitt
Director, DEQ
200 W. 17th St.
Cheyenne, WY 82002
todd.parfitt@wyo.gov

Jeff Pope
Isaac Sutphin
Thomas Sansonetti
Holland and Hart, LLP
JPope@hollandhart.com
INSutphin@hollandhart.com
tlsansonetti@hollandhart.com
Attorneys for Brook Mining Co., LLC

And to the following via electronic mail only:

Andrew Kuhlmann
James LaRock
Wyoming Attorney General's Office
andrew.kuhlmann@wyo.gov
james.larock@wyo.gov
Attorneys for DEQ

Lynne Boomgaarden,
Clayton Gregersen
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lboomgaarden@crowleyfleck.com
cgregersen@crowleyfleck.com
Attorneys for Big Horn Coal Co.

Jay Gilbertz
Yonkee & Toner, LLP
jgilbertz@yonkeetoner.com
Attorney for Mary Brezik-Fisher & David Fisher

Brooke Collins
bpcharlie@wbaccess.net



Shannon Anderson

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Cc: [Michael Klein](#) (m.klein@lhr-inc.com); j.sweeney@lhr-inc.com; [Mary Brezik Fisher](#)
Subject: RE: Brook Mine
Date: Friday, February 24, 2017 10:18:26 AM

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From: Jim Ruby [<mailto:jim.ruby@wyo.gov>]

Sent: Friday, February 24, 2017 9:20 AM

To: Lynne Boomgaarden <lboomgaarden@crowleyfleck.com>; Isaac Sutphin <insutphin@hollandhart.com>; Shannon Anderson <sanderson@powderriverbasin.org>; Jay Gilbertz <JGilbertz@yonkeetoner.com>; andrew kuhlmann <andrew.kuhlmann@wyo.gov>; Jeffrey S. Pope (JSPOpe@hollandhart.com) <JSPOpe@hollandhart.com>; bpcharlie@wbaccess.net; James LaRock <james.larock@wyo.gov>

Subject: Brook Mine

Dear Parties and Counsel:

As of now we have two appeals in the Brook Mine matter. The Council has three ways of handling this matter. We can have separate cases for each and every case which means separate hearings for each case. We can consolidate the cases at some point through a consolidation order or we can treat them as motions to intervene. The Council would appreciate your input on the process. If you wish to treat the process as motions to intervene than the Council would like you to file a one page motion requesting that your petitions (s) be treated as motions to intervene or if you haven't filed yet than you can simply make your choice and file a petition for contested case or file motions to intervene. The case number for intervention is 17-4801.

Sincerely,

Jim Ruby



E-Mail to and from me, in connection with the transaction of public business, is subject to the Wyoming Public Records Act and may be disclosed to third parties.

From: Shannon Anderson
To: [Lynne Boomgaarden](#); [Jim Ruby](#); [Isaac Sutphin](#); [Jay Gilbertz](#); [andrew kuhlmann](#); [Jeffrey S. Pope](#); [bpcharlie@wbaccess.net](#); [James LaRock](#)
Cc: [Michael Klein](#); [j.sweeney@lhr-inc.com](#)
Subject: RE: Brook Mine
Date: Friday, February 24, 2017 10:10:15 AM

We will be mailing our petition today and will be sending it via email this afternoon. We also have no objection to consolidation with the other dockets or intervention in our soon-to-be-established docket, however we are filing a separate petition as we have different grounds for our petition than the other parties.

Shannon Anderson
Powder River Basin Resource Council
934 N. Main St., Sheridan, WY 82801
307-672-5809 cell: 307-763-0995
sanderson@powderriverbasin.org
Join us at www.powderriverbasin.org
Follow us at <https://twitter.com/PRBResCouncil>

From: Lynne Boomgaarden [mailto:lboomgaarden@crowleyfleck.com]
Sent: Friday, February 24, 2017 10:03 AM
To: Jim Ruby; Isaac Sutphin; Shannon Anderson; Jay Gilbertz; andrew kuhlmann; Jeffrey S. Pope (JSPope@hollandhart.com); bpcharlie@wbaccess.net; James LaRock
Cc: Michael Klein (m.klein@lhr-inc.com); j.sweeney@lhr-inc.com
Subject: RE: Brook Mine

Mr. Ruby – Can you please clarify whether the case number for intervention shouldn't be 17-4802, since 17-4801 was the docket that was dismissed? Big Horn Coal supports the Council hearing these matters together. Big Horn would not object to intervention by other objectors in EQC Docket 17-4802, or in the alternative, to the consolidation of EQC Docket 17-4802 with Dockets initiated by other objectors.

Regards,
Lynne

Lynne Boomgaarden



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privileged at law. It is not intended for transmission to, or receipt by, any unauthorized persons. If you have received this electronic mail transmission in error, please delete it from your system without copying it, and notify the sender by reply e-mail or by calling Crowley Fleck PLLP, so that our address record can be corrected.

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From: Jim Ruby [<mailto:jim.ruby@wyo.gov>]

Sent: Friday, February 24, 2017 9:20 AM

To: Lynne Boomgaarden <boomgaarden@crowleyfleck.com>; Isaac Sutphin <insutphin@hollandhart.com>; Shannon Anderson <sanderson@powderriverbasin.org>; Jay Gilbertz <JGilbertz@yonkeetoner.com>; andrew kuhlmann <andrew.kuhlmann@wyo.gov>; Jeffrey S. Pope (JSPope@hollandhart.com) <JSPope@hollandhart.com>; bpcharlie@wbaccess.net; James LaRock <james.larock@wyo.gov>

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To: [Jim Ruby](#); [Isaac Sutphin](#); [Shannon Anderson](#); [Jay Gilbertz](#); [andrew kuhlmann](#); [Jeffrey S. Pope](#) (JSPope@hollandhart.com); bpcharlie@wbaccess.net; [James LaRock](#)
Cc: [Michael Klein \(m.klein@lhr-inc.com\)](mailto:m.klein@lhr-inc.com); j.sweeney@lhr-inc.com
Subject: RE: Brook Mine
Date: Friday, February 24, 2017 10:03:38 AM

Mr. Ruby – Can you please clarify whether the case number for intervention shouldn't be 17-4802, since 17-4801 was the docket that was dismissed? Big Horn Coal supports the Council hearing these matters together. Big Horn would not object to intervention by other objectors in EQC Docket 17-4802, or in the alternative, to the consolidation of EQC Docket 17-4802 with Dockets initiated by other objectors.

Regards,
Lynne

Lynne Boomgaarden



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Sincerely,

Jim Ruby



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From: Jim Ruby
To: [Lynne Boomgaarden](#); [Isaac Sutphin](#); [Shannon Anderson](#); [Jay Gilbertz](#); [andrew kuhlmann](#); [Jeffrey S. Pope \(JSPope@hollandhart.com\)](#); [bpcharlie@wbaccess.net](#); [James LaRock](#)
Subject: Brook Mine
Date: Friday, February 24, 2017 9:19:34 AM

Dear Parties and Counsel:

As of now we have two appeals in the Brook Mine matter. The Council has three ways of handling this matter. We can have separate cases for each and every case which means separate hearings for each case. We can consolidate the cases at some point through a consolidation order or we can treat them as motions to intervene. The Council would appreciate your input on the process. If you wish to treat the process as motions to intervene than the Council would like you to file a one page motion requesting that your petitions (s) be treated as motions to intervene or if you haven't filed yet than you can simply make your choice and file a petition for contested case or file motions to intervene. The case number for intervention is 17-4801.

Sincerely,

Jim Ruby



From: Jay Gilbertz
To: [Jenny Wacker](#); Andrew.kuhlmann@wyo.gov; james.larock@wyo.gov; todd.parfitt@wyo.gov; sanderson@powderriverbasin.org; alan.edwards@wyo.gov; jim.ruby@wyo.gov; insutphin@hollandhart.com; jspope@hollandhart.com; tlsansonetti@hollandhart.com
Cc: [Lynne Boomgaarden](#); [Clayton Gregersen](#); [Wendy Drake](#); [Mary Brezik Fisher](#)
Subject: RE: Objector Fishers" Petition for a Hearing Before the EQC
Date: Thursday, February 23, 2017 5:16:42 PM
Attachments: [Petition For Contested Case Hearing.Fishers.pdf](#)

Attached is the Fishers' Petition for a contested case hearing.

Jay A. Gilbertz

Yonkee & Toner, LLP
P.O. Box 6288
319 West Dow Street
Sheridan, WY 82801
(307) 674-7451 (Phone)
(307) 672-6250 (Facsimile)

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Jay A. Gilbertz, WSB#6-3087
Yonkee & Toner, LLP
319 West Dow Street
P.O. Box 6288
Sheridan, WY 82801
(307) 674-7451
(307) 672-6250 (fax)
jgilbertz@yonkeetoner.com
Attorney for Objectors,
Mary Brezik-Fisher and David Fisher

**BEFORE THE ENVIRONMENTAL QUALITY COUNCIL
STATE OF WYOMING**

IN RE BROOK MINE APPLICATION)	
	)	DOCKET _____
TFN 6 2-025)	
)	

**OBJECTOR FISHERS' PETITION FOR A HEARING ON THEIR OBJECTIONS
BEFORE THE ENVIRONMENTAL QUALITY COUNCIL**

Objectors Mary Brezik-Fisher and David Fisher ("Fishers"), by and through their undersigned counsel, hereby submit this Petition and their demand for a contested case hearing before the Wyoming Environmental Quality Council in relation to the Fishers' objections to the proposed mining application and permit for the Brook Mine. In support of this demand, the following facts and sequence of events have transpired:

1. Mary Brezik-Fisher and David Fisher are landowners in Sheridan County, Wyoming at 32 Slater Creek Lane, Ranchester, WY 82839. The Fishers are represented by attorney Jay A. Gilbertz whose contact and other pertinent information are set forth above.
2. Because the DEQ has refused to provide the Fishers with an informal conference to present their objections and the Fishers have not otherwise been allowed to present

their objections in any hearing, the Fishers hereby demand that the EQC provide them with a contested case hearing before the Council as is required by Wyoming Statute §35-11-406(k).

3. The Fishers have objections to the proposed permit based on deficiencies, incompleteness, and other inadequacies and problems associated with the proposed mining and mine plan including, but not limited to, geotechnical and subsidence concerns, hydrological concerns, reclamation concerns and others. The Fishers set forth their objections and concerns in their letter to the DEQ which is attached hereto and incorporated by reference as Appendix 1¹. In addition, the Fishers adopt by reference the other concerns and objections raised by all other objectors as set forth in these parties' respective submissions to the DEQ as filed of record in EQC Docket No. 17-4801.
4. The Fisher lands are in close proximity to the proposed mining operations and within the zone of influenced property potentially impacted by the proposed mining. The Fishers are otherwise interested and effected residents of the State of Wyoming.
5. Brook Mining Company, LLC is a Wyoming limited liability company with its principal office located at 1101 Sugarview Drive, Ste. 201, Sheridan, WY 82801.
6. Brook Mine has submitted an application for a coal mining permit from the Wyoming Land Quality Division of the Department of Environmental Quality, DEQ File No. "TFN 6 2-025 (the "permit application").
7. According to the public notice, the coal mining permit area will be located in various Sections of Township 57N, Range 85W and various Sections of Township 57N, Range 84W Sheridan County, Wyoming (the "permit area").
8. Public Notice of the mine application was published by Brook Mining Co., LLC in the Sheridan Press in the form attached hereto as Appendix 2.
9. Pursuant to terms and instructions of the Public Notice published by Brook Mining Co., LLC, written objections to the proposed mining operation and application were to be delivered to and received by Kyle Wendtland, Administrator of the Land Quality Division, Department of Environmental Quality before the close of business on

¹ In Fishers' objections they raised a concern about a potential conflict of interest relative to Administrator Kyle Wendtland. Fishers have subsequently been informed that Kyle Wendtland has been fully recused from participation in this matter. Assuming this to be true, this topic will not be at issue in the contested case hearing. Fishers did not imply or intend to imply any impropriety by Kyle Wendtland or his brother Anthony Wendtland.

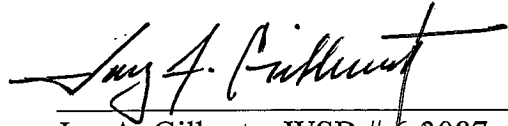
January 27, 2017. (See EQC Docket No. 17-4801.)

10. The Fishers along with several other objectors timely filed written objections to the proposed mining operation citing numerous concerns, and pursuant to the published notice from Brook Mine delivered those objections to the DEQ as directed. A copy of the Fishers' objections are incorporated by reference and attached hereto as Appendix 1.
11. The Fishers, together with other objectors, requested an informal public conference with the Director of DEQ, and that request was summarily denied.
12. In response to the objections filed by the Fishers and all the other Objectors, the DEQ referred the matter to the Environmental Quality Council ("EQC") which set a contested case hearing for February 13th and 14th, 2017 to be held in Cheyenne, Wyoming.
13. Prior to the established hearing date, the EQC invited briefing and held a hearing on the issue of whether the Objectors' complaints were properly before the Council as a result of the referral process used by the agency (the DEQ). Consequently, on February 7, 2017, the EQC issued an Order Vacating Contested Case Hearing And Setting Oral Argument on the issue for February 21, 2017.
14. The Oral Argument Hearing was held on February 21, 2017 and immediately afterward, the EQC dismissed Docket 17-4801. During its verbal pronouncements, the EQC indicated that each objector would be allowed to subsequently make a request for a contested case hearing before the EQC should any such objector wish to do so. An Order Of Dismissal was issued on February 22, 2017. (See Appendix 3 attached.)
15. Prior to the Oral Argument Hearing held on February 21, 2017, Objector Big Horn Coal filed a Petition For A Contested Case Hearing with EQC on February 15, 2017.
16. In light of the EQC's dismissal of Docket 17-4801, (which was done without the consent nor at the behest of the Fishers), the Fishers hereby demand a contested case hearing before the EQC at which their objections will be heard and addressed.

WHEREFORE, the Fishers hereby demand that the EQC set and conduct a contested case hearing before the EQC to hear and address the Fishers' objections to the proposed coal mining permit sought by Brook Mining Company, LLC.

DATED this 23rd day of February, 2017.

YONKEE & TONER, LLP

A handwritten signature in black ink, appearing to read "Jay A. Gilbertz", is written over a horizontal line.

Jay A. Gilbertz, WSB # 6-3087

Attorney for Objectors

Mary Brezik-Fisher and David Fisher

319 West Dow Street

P.O. Box 6288

Sheridan, WY 82801

Telephone: (307) 674-7451

Telefax: (307) 672-6250

CERTIFICATE OF SERVICE

I, Jay A. Gilbertz, hereby certify that on the 23rd day of February, 2017, I served a true and correct copy of the above and foregoing *via certified mail, return receipt requested*, duly addressed as follows:

David Bagley, Chairman
Environmental Quality Council
122 W. 25th Street
Herschler Bldg., Room 1714
Cheyenne, WY 82002

Thomas L. Sansonetti
Isaac N. Sutphin
Jeffrey Pope
2515 Warren Ave., Suite 450
Cheyenne, WY 82003-1347
Attorneys for Brook Mining, Co., LLC

Todd Parfitt, Director
Wyoming Department of Environmental
Quality
200 W. 17th Street
Cheyenne, WY 82002

I also hereby certify that on the 23rd day of February, 2017, I served a true and correct copy of the above and foregoing *via email transmission* to the following:

Andrew Kuhlmann
Asst. Attorney General
andrew.kuhlmann@wyo.gov

Todd Parfitt
Director, DEQ
Todd.Parfitt@wyo.gov

Alan Edwards
Deputy Director, DEQ
Alan.edwards@wyo.gov


Shannon Anderson
Powder River Basin Resource Council
sanderson@powderriverbasin.org

Isaac Sutphin and Jeff Pope
Attorneys for Brook Mine, LLC
INSutphin@hollandhart.com
jspope@hollandhart.com
jmkelley@hollandhart.com
csvec@hollandhart.com

Brooke Collins
38 Monarch Rd.
Ranchester, WY 82839
bpcharlie@wbaccess.net

Lynne Boomgaarden
Attorney for Big Horn Coal
lboomgaarden@crowleyfleck.com
jwacker@crowleyfleck.com
wdrake@crowleyfleck.com

Jim Ruby
Executive Officer, EQC
jim.ruby@wyo.gov



Jay A. Gilbertz

Copy to Kw
BJ
AK
AE

January 22, 2017

Via Federal Express (01/24/17)

Kyle Wendtland, Administrator
Department of Environmental Quality
Land Quality Division
200 W. 17th Street
Cheyenne, WY 82002

**RE: Ramaco, LLC/Brook Mine Permit
Sheridan County, Wyoming**

Dear Mr. Wendtland:

Our property in Sheridan County is in the group of potentially affected landowners to the proposed Brook Mine Permit, and we received the Public Notice regarding this action. We have resided in this historic valley since 1996 and have run livestock and haying operations on our property. The purpose of this letter is to issue a written objection to the proposed mine permit based on the following concerns:

1. **Substantially Incomplete Mine Plan.** The mine plan has changed or been revised numerous times. It has gone from an operation purportedly employing 200-400 workers to its current version employing approximately 18-20 workers with initial projections of mining up to ten million tons per year to a revised plan of mining only two million tons in the first few years. In simple terms, local landowners are not clear on exactly what the current mine operation will entail as the current mine plan does not adequately address specific issues (to name a few, as follows): Where will the load-out facility be located? Where will infrastructure facilities be located? What type of "mobile crusher" will be used? How will the coal be transported and where? How many trucks will be on the road, how often, and what route will they take? How often will blasting occur and what are the hours of operation? Who specifically will be conducting the mine operations and what experience do they have in this type of operation (We understand that Mr. Woodring will be merely a "consultant")? Does Ramaco have a buyer/market for its coal?
2. **Ramaco's lack of history in conducting mining operations in Wyoming.** Other coal companies conducting business in Wyoming have a history of operating their mines in cooperation with local landowners and in compliance with local, state, and federal rules, regulations, statutes and procedures. For some landowners in this area, Ramaco has already demonstrated a disregard

Appendix

for "the Wyoming way" of conducting business. In our particular case, folks employed by Ramaco were caught trespassing on our property and taking soil samples without authorization. In fact, they were so blatant about it that my husband and a neighbor were out working on a baler in our hay field one afternoon and noticed two people out in our field. Those folks made no effort to come forward and identify themselves. My husband went up to them and asked what they were doing on our property and they told him they had permission to be there on behalf of Ramaco. He responded that he was the owner of the property and had not given them permission. They took the soil samples anyway and then departed. That is just one incident of several we have heard about concerning Ramaco's lack of cooperation with local landowners which does not bode well with their future operations.

3. **Soil Subsidence Issues and Sinkholes.** There have been geological surveys conducted in this area regarding the effects of coal mine subsidence in Sheridan County, specifically with respect to the area where Ramaco's mine operation will occur. Landowners are very concerned about subsidence, soil disturbance, and sinkhole issues considering how extensively this area has been mined. The mine plan does not adequately address these issues, including the possibility of re-igniting underground coal fires and measures to be taken for coal fire suppression. It is apparent that blasting within such close proximity to the old mines could further worsen the ongoing subsidence issues in this area.
4. **Damage to Water Wells and Foundations.** Affected landowners have substantial concerns that blasting operations may cause damage to the structural integrity of their water wells and foundations of homes and buildings on their property, including increasing drawdown in domestic wells. It is well-documented that previous mine operations in this same area caused damage to water wells and some were so extensive they had to be replaced. There are inadequate provisions in the current mine plan which protect landowners' ground and surface water.
5. **Air Quality, Noise and Light, and Other Health and Environmental Concerns.** The Tongue River Valley where many of the affected landowners live regularly sustains high winds in the area. The mine plan does not adequately address dust suppression measures and how mining operations will control the coal dust, dust from trucks and crushers, toxic fumes, emissions from increased truck traffic and potentially unhealthy air quality emissions due to mining operations. (Apparently no coal will be transported via rail...is that correct?) Will there be any restrictions on hours of operation, especially during high wind events? There is no provision in the mine plan for creating

a sound barrier to minimize the noise. There are concerns about coal dust blanketing the area leaving layers of dust and grime on homes, buildings, vehicles, ranch equipment, etc. Many local landowners/ranchers have livestock and horse farms which could be affected. In addition, there are health concerns regarding asthma and respiratory conditions which could arise due to mining operations. Light from the mine site will adversely affect the quality of life for residents in this area. The mine plan does not adequately address these health and safety issues.

6. **Proximity of Mine Operations to Interstate 90.** The mine operations are in very close proximity to Interstate 90, a major US highway. The mine plan does not address issues concerning potential damage to highway infrastructure and bridges, dust storms, effects of blasting, etc. on this heavily traveled major thoroughfare.
7. **Potential Pollution and Water Degradation to Tongue River and Adjacent Creeks.** The Wyoming Attorney General's Office has been involved in water law litigation with the State of Montana for well over 7 years which is finally reaching a conclusion. This involved irrigation rights and disputes between the two states regarding the Yellowstone River Compact, including the Tongue River. Given the close proximity of the Tongue River to Ramaco's mining operations, there are serious concerns about sediment runoff, wastewater issues, and potential pollution of waterways. If the Tongue River or adjacent creeks and tributaries are adversely affected by these mining operations, then the State of Wyoming could face further costly and protracted litigation over these issues. The current mine plan does not adequately address this.
8. **Inadequate Bonding and Reclamation Concerns.** It is our understanding that the bond for Ramaco's permit is only \$375,000. This seems wholly insufficient considering the potential for major impacts on air quality, pollution of Tongue River, creeks, irrigation, livestock waterway systems, etc. In addition, the bond as currently proposed does not take into account subsidence issues into the future and reclamation of the facilities and the pits. Considering the substantial increase in truck traffic, damages to county roads (including the Frontage Road) and other paved roads could be very costly to maintain and repair for the county. The approximately ten-mile long trenches associated with this mine plan could certainly require costly reclamation efforts and the current bond surely would not provide compensation to cover anywhere near those costs. Similarly, with the tremendous increase in truck traffic and other traffic from the mines on county roads, including the Frontage Road, and other paved roads in the area, safety concerns for local landowners and members of the public are huge. The potential of someone being injured

or killed as a result of the increased truck traffic is a high probability. Hwy. 345 (Frontage Road to Ranchester) recently was designated with a highway speed of 70 mph. With members of the public (including motorcyclists) traveling at that high rate of speed and slow-moving mine trucks and heavy equipment utilizing that two-lane road with great frequency, the possibility of highway accidents is imminent. The mine plan does not address these issues.

9. **Accidents or Environmental Harm.** Ramaco does not have a history of operating a highwall coal mine such as what is being proposed. How can adjacent landowners and members of the public be assured that Ramaco is capable of rectifying any potential serious accidents or harm that may occur as a result of its operations?

We understand that Ramaco faced stiff opposition to a similar plan of operation in Nottingham, Pennsylvania. Legislators, affected landowners, and members of the public (en masse) have been very vocal in expressing their concerns about deleterious effects the mining operation there could have on their quality of life, water and soil issues, and public health and safety.

10. **Impacts on Irrigation, Livestock, Wildlife, Hunting, Fishing, Recreational Activities.** The Tongue River Reservoir is located in close proximity to the mine operations and there is a very real potential that this area could be adversely affected which will have an impact on members of the public (from Wyoming and Montana) who recreate at the reservoir, including swimming, boating, fishing. A substantial number of ranchers in the area within close proximity to the mining operations have irrigation rights and conduct agricultural operations. If the waterways, ditches, drainages, reservoirs become polluted then the livelihood of a great many people in the area will be drastically affected, including impacts on livestock watering systems. In addition, the area has abundant wildlife which will also suffer.

11. **Black Diamond Trail Designation.** In addition to the prospect of the mining operations affecting the area valley designated as an alluvial valley floor, in September, 2012 the area along the frontage road between Sheridan and Ranchester (Hwy. 345) was designated as the Black Diamond Historic Mine Trail by the Sheridan Community Land Trust and the Wyoming Historic Preservation Work Group in conjunction with the Wyoming State Historic Preservation Office and Wyoming State Parks and Cultural Resources. Although not clearly defined in the mine plan, this area (Hwy 345) along the frontage road will sustain substantial truck traffic and will be impacted by dust, other air quality issues, road damage, etc. and may have an effect on this historic trail designation. There are no provisions in the current mine plan

addressing this historic designation to ensure its protection.

12. **Kleenburn Recreation Area.** This area which is in extremely close proximity to the mine operations (just east of the Acme exit off Interstate 90) is owned and operated by Sheridan County. The Wyoming Game and Fish is involved in stocking the ponds which provide members of the public the opportunity to fish for trout, largemouth bass, catfish and perch. Since its inception a few years ago, this recreation area has provided a countless number of folks, including tourists, with many hours of recreation, fishing, field trips for local school children, canoeing adventures, hiking, and many other forms of recreation. Potential pollution (air and water), noise, light, dust and truck traffic will greatly impact this area and pose adverse effects on the health and safety of not only local residents but members of the public at large. The mine plan does not adequately address this issue.
13. **Conflict of Interest.** The area landowners are concerned about a potential conflict of interest concerning Kyle Wendtland, Administrator for the Land Quality Division, whose brother, Tony Wendtland (Sheridan, Wyoming), is an attorney for Randall Atkins, CEO of Ramaco. Even if Kyle Wendtland recused himself from presiding over certain aspects of this mine plan, what assurances can be given to affected landowners that this process will be conducted, reviewed and monitored without bias or preference given to Ramaco's interests over the legitimate concerns of the public before, during, and after the mine operation? The very fact that landowners are required to submit objections to Kyle Wendtland is disconcerting. We have heard that Tony Wendtland may no longer be local counsel for Ramaco. Regardless of the current relationship between Attorney Wendtland and Ramaco, the fact is that Mr. Wendtland has provided legal representation to Ramaco throughout this critical mine permitting process.
14. **Adverse Effect On Property Values and Quality Of Life.** Local landowners are very worried about serious impacts on property values if the current mine plan is approved and they are equally concerned about threats to their quality of life. There are quite a number of landowners in this area whose property values could substantially diminish causing a significant reduction in the tax base for the county. Adverse effects from the mining operation will not only diminish property values but more importantly will endanger public health and safety and create a public nuisance.
15. **Viability of the Mine Operation.** Is the extraction of 10 million tons of coal per year even viable? Folks in this area are quite skeptical. Some who have worked in the coal mines here state that in the years of prime production, the

most that Big Horn Coal ever extracted was approximately 4 million tons. Given the potential for major detrimental impacts of Ramaco's proposed operation, is it really worth it?

CONCLUSION

We are not attempting to preclude Brook Mining Company from operating a coal mine in the proposed area, but we have legitimate concerns about the mining operation under its current plan causing permanent and irreparable harm to a pristine area rich in history which has been enjoyed by Wyoming families for generations. This area has such a documented history that a number of books and articles have been published in attempts to enlighten folks about its history and preserve the heritage of this region. Local historians and others have frequently conducted lectures and presentations highlighting the history of the area. In addition, the local museum in Sheridan has devoted specific exhibits and dioramas to exemplify the historical significance of this longstanding mining community.


Initial projections gauging an economic boom to this community (and the State as a whole) as a result of the proposed Brook Mine have proven to be substantially distorted and misleading, and promises to provide an unrealistic number of jobs in an economically depressed area should not be the incentive for approving a mining operation which may result in devastation to this community and the State of Wyoming in the long run. Several of the issues and concerns identified above have not been addressed, and they represent a public nuisance to local property owners as well as significant threats to public health and safety.

We are hereby requesting an informal hearing with the director of DEQ on this matter.

Thank you for your attention.

Sincerely,


Mary Brezik-Fisher


David Fisher

(32 Slater Creek Lane, Ranchester, WY 82839)

cc: Steve Maier, Chairman
Sheridan County Board of Commissioners

Public Notice

The Brook Mining Co., LLC of 1101 Sugarview Drive, Suite 201, Sheridan, WY 82801 has applied for a coal mining permit from the Land Quality Division of the Department of Environmental Quality for the State of Wyoming. The coal mining permit area will be located in: Sections 10, 11, 12, 13, 14 and 15 Township 57N, Range 85W, and Sections 7, 8, 9, 10, 15, 17, 18, 20, 21, 22 and 27 Township 57N, Range 84W Sheridan County, Wyoming. The Brook Mine is located approximately 6 miles Northwest of Sheridan, Wyoming. This area can be found on the Acme and Monarch USGS quadrangle maps. The proposed operation is scheduled to begin July 2017 and is estimated to continue until 2032. The land, after mining, will be returned to a grazing land use. Information regarding the proposed mining operation and reclamation procedures may be reviewed in the Office of the Land Quality Division of the Department of Environmental Quality in Cheyenne and Sheridan, Wyoming, the office of RAMACO in Sheridan, WY, or the Sheridan County Clerk's Office Sheridan, Wyoming. Written objections to the proposed mining operation must be received by the Administrator of the Land Quality Division, Department of Environmental Quality, 200 W. 17th Street, Cheyenne, WY 82002, before the close of business January 27, 2017. The Director may hold an informal conference if requested, hear the complaint and take action on the application in accordance with the Department's Rules of Practice and Procedure. The complainants shall have a right of appeal to the Environmental Quality Council where the complaint will be heard a second time. A conference shall be held if the Director determines that the nature of the complaint or the position of the complainants indicates that an attempt to informally resolve the disputes is preferable to a contested case proceeding. An informal conference or a public hearing shall be held within twenty (20) days after the final date for filing objections unless a different period is stipulated to by the parties. The Council or Director shall publish notice of the time, date and location of the hearing or conference in a newspaper of general circulation in the locality of the proposed operation once a week for two (2) consecutive weeks immediately prior to the hearing or conference. The hearing would be conducted as a contested case in accordance with the Wyoming Administrative Procedure Act (W.S. §16-3-101 through §16-3-115), and the right of judicial review would be afforded as provided in that act. All parties as given in W.S. §35-11-406(j) will be mailed a copy of this notice. The Wyoming Oil and Gas Commission will be mailed a copy of the application mine plan map as required by W.S. §35-11-406(j).

Appendix

**BEFORE THE ENVIRONMENTAL QUALITY COUNCIL
STATE OF WYOMING**

IN RE BROOK MINE APPLICATION

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DOCKET 17-4801

TFN 6 2-025

ORDER OF DISMISSAL

On the 21st day of February, 2017, the Council held a hearing on its own motion in Room 1699, Herschler Building, 1st Floor West, 122 West 25th St. Cheyenne WY 82009. The issue heard was whether there is a proper appeal before the Council at this time necessitating a contested case.

Council members present were Megan Degenfelder, Nick Agopian, Tim Flitner, Meghan Lally, Dr. Dave Bagley, and Rich Fairservis. Council member Aaron Clark was absent. Present on behalf of the parties were Isaac Sutphin, Jeffrey Pope, and Thomas Sansonetti on behalf of Brook Mine LLC., Andrew Kuhlman and James LaRock on behalf of the Department of Environmental Quality, Shannon Anderson on behalf of Powder River Basin Resource Council, Lynnette Boomgaarden on behalf of Big Horn Coal, and Jay Gilbertz on behalf of Mary and David Brezik- Fisher.

After reviewing the pleadings and hearing oral argument from the parties, the Council unanimously finds that there currently is not a proper appeal before it necessitating a contested case. Currently, no interested person, as part of this docket, has filed a petition for a contested case with the Council that would allow the Council to exercise its jurisdiction over the Brook Mine permit application. Following his denial of requests for an informal conference, the

Appendix

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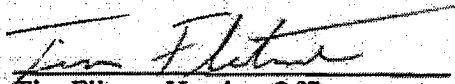

FEB 22 2017

**Jim Ruby, Executive Secretary
Environmental Quality Council**

Director of the Department of Environmental Quality referred this matter directly to the Council on January 30, 2017, for the Council's review and determination at a contested case matter. However, the Council may not exercise any authority over the Brook Mine permit application on a referral from the Director. Under Wyoming Statutes § 35-11-406(k) and (p) and the Department of Environmental Quality's rules of practice and procedure, the Council may only exercise jurisdiction over the Brook Mine permit application after an interested person has filed a petition for a contested case with the Council – something not done as part of this docket. The Council, in this docket, is without authority to accept jurisdiction over the Brook Mine permit application through the referral from the Director.

IT IS HEREBY ORDERED that this docket, in its entirety, is dismissed.

ENTERED this 22nd day of February, 2017.


Tim Flitner, Hearing Officer
Environmental Quality Council 

From: Jan Kelley
To: lboomgaarden@crowleyfleck.com; cgregersen@crowleyfleck.com; todd.parfitt@wyo.gov; sanderson@powderriverbasin.org; andrew.kuhlmann@wyo.gov; james.larock@wyo.gov; alan.edwards@wyo.gov; jgilbertz@yonkeetoner.com; bpcharlie@wbaccess.net; [Jim Ruby](mailto:Jim.Ruby); mayor@ranchesterwyoming.com
Cc: [Thomas Sansonetti](mailto:Thomas.Sansonetti); [Isaac Sutphin](mailto:Isaac.Sutphin); [Jeffrey S. Pope](mailto:Jeffrey.S.Pope); [Carri Svec](mailto:Carri.Svec)
Subject: In re Brook Mine Application (Civil Action No. 17-4802) - Brook Mine's Motion to Dismiss Big Horn Coal Company's Petition for a Contested Case Hearing
Date: Wednesday, February 22, 2017 4:25:47 PM
Attachments: [2017-02-22 Brook Mine's Motion to Dismiss BHC's Petition for a Contested....pdf](#)
[Exhibit A - Order of Dismissal.pdf](#)
[Exhibit B - 1983 Lease Release Agreement.pdf](#)
[Exhibit C - Big Horn Objection.pdf](#)

Attached please find Brook Mine's Motion to Dismiss Big Horn Coal Company's Petition for a Contested Case Hearing with exhibits.

Jan Kelley

*Assistant to Isaac Sutphin, JoAnna DeWald,
and Sami Falzone*

Holland & Hart LLP

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CONFIDENTIALITY NOTICE: This message is confidential and may be privileged. If you believe that this email has been sent to you in error, please reply to the sender that you received the message in error; then please delete this e-mail. Thank you.

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Isaac N. Sutphin, P.C. (Wyo. State Bar # 6-3711)
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ATTORNEYS FOR PERMIT APPLICANT
BROOK MINING COMPANY, LLC

**BEFORE THE ENVIRONMENTAL QUALITY COUNCIL
STATE OF WYOMING**

IN RE BROOK MINE APPLICATION)	
	)	Civil Action No. 17-4802
TFN 6 2-025)	

**BROOK MINE’S MOTION TO DISMISS BIG HORN COAL COMPANY’S PETITION FOR
A CONTESTED CASE HEARING**

INTRODUCTION

On February 15, 2017, Big Horn Coal Company petitioned the Council to hold a contested case hearing on its objections to Brook Mine’s permit application. Big Horn’s request comes 19 days after the final day to object, 19 days after the final day to request an informal conference with the Director of DEQ, and 19 days after the deadline to request a hearing with the Council. Big Horn’s request also comes 34 years after Big Horn agreed not to oppose Brook’s mine plans. Big Horn is just too late; and their request should be denied.

Big Horn’s petition is based on Wyo. Stat. §§ 35-11-406(k) and (p), 2. As this Council recently held, objectors wishing to have their case heard by the Council must request a formal hearing pursuant to Section 406(k). Only then will the Council hear objections to a surface coal mining permit application. In dismissing the previously-docketed contested case involving all

objections to Brook's application, including Big Horn's objection, the Council decided that before it has jurisdiction to hear a contested case, an objector must request a hearing. The Council's decision means that a hearing request filed with the Council must occur on the same timetable as a request for an informal conference with the DEQ under Section 406(k). Big Horn's request does not meet that timetable; so the Council has no jurisdiction to hear it. *See* Council's Order of Dismissal, 2 filed today, February 22, 2017 in Docket 17-4801 (Ex. A).

Even if Big Horn had made a timely request, it had no right to make one. Big Horn promised that if Brook sought to develop a mine where Brook now seeks to, Big Horn would not "oppose any such mine plan before any governmental agency and will take no action, direct or indirect, to induce any federal, state, or local agency to disapprove or otherwise object to such mine plan." (Ex. A, 1983 Lease Release Agreement, 2.) Big Horn has broken that promise twice. First, when it refused to consent to Brook's mine plan and opposed Brook before this very Council. And now when it objected to Brook's permit application. Big Horn's strategy has become clear—convince state agencies to deny or at least needlessly delay Brook's permit application. These efforts fly in the face of Big Horn's contractual duties and are the opposite of what Big Horn promised 34 years ago. The time has come to enforce Big Horn's promise.

ARGUMENT

I. Big Horn's request for a contested case hearing is untimely.

Under the Act, the public had 30 days after the final publication date of Brook's permit application to object or comment. Wyo. Stat. Ann. § 35-11-406(j), (k). Section 406(k) allows someone who comments or objects to request an informal conference with the DEQ Director. *Id.* That request must occur within the 30-day statutory period because the informal conference with the director shall take place within 20 days "after the final date for filing objections...." *Id.* at (k); DEQ Rules of Practice and Procedure Ch. 3 § 3.

Because the Council decided that an objector must request a contested case hearing to get one, the same deadlines and procedures in Section 406(k) apply. (Ex. A, 2.) Section 406(k) creates deadlines to ensure the permit application process moves forward in a timely manner. Thus, whether requesting an informal conference or a public hearing, the deadline is the same.

But Big Horn did not meet this deadline. (Ex. A, 2.) Brook's final day of publishing its permit application was December 27, 2016. The public had until January 27, 2017 to object or comment. Big Horn objected within that time period and requested an informal conference with the director. But Big Horn waited until February 15, 2017 to request a contested case hearing—19 days after the deadline. (Big Horn's Jurisdiction Brief, 5.) Even that request was contingent on the DEQ Director denying a renewed request for an informal conference, a procedure not set out in statutes or regulations. Simply put, Big Horn did not request a contested case within 30 days of the final publication date. Their Petition is untimely and should be dismissed.

Big Horn may contend that the statute does not set a deadline to request a contested case. That's the problem. The statute contemplates either an informal conference or a hearing within 20 days of the final date to file objections. Although the Council decided that the statute also requires an objector request a contested case before the Council has jurisdiction, that process must follow the deadlines set forth in the statute because the Council has no authority to create new procedures or deadlines not already provided in the statute. *Amoco Production Co. v. State Bd. of Equalization*, 12 P.3d 668, 673 (Wyo. 2000) (explaining an agency's power depends upon statutes, so "they must find within the statute warrant for the exercise of any authority which they claim.") Big Horn asked for this process and now must live with the consequences.

II. Big Horn has no right to a contested case hearing.

It does not matter if Big Horn met the deadline for requesting a contested case because Big Horn cannot request one. Doing so violates its obligations to Brook. As the Council knows

from the Order in Lieu of Consent Hearing and discussed on September 28, 2016, Big Horn agreed not to oppose any mine plan before a governmental agency and take no steps to get a state agency to disapprove of the mine plan when it executed the 1983 Lease Release Agreement. (Ex. B, 2.) But that is exactly what Big Horn has done. Big Horn's objection letter states it "feels strongly that the Brook Mine permit application should not be approved or deemed technically complete." (Ex. C, Big Horn Objection, 10.)

The Council should not enable Big Horn to breach its contract with Brook. Instead, it should exercise its authority to dismiss Big Horn's request. The Council has the authority to exclude Big Horn before any hearing if it finds that Big Horn engaged in "contemptuous conduct" or has used "dilatory tactics." Wyo. Admin. Code § ENV PP Ch. 1 Sec. 13. Big Horn has done both by ignoring its contractual obligation to Brook.

Contemptuous conduct is conduct that shows a lack of respect for something or someone. Meriam-Webster's Dictionary. Big Horn's refusal to keep its promises to Brook shows a lack of respect for Brook and the law. It does not require a court to decide that Big Horn has broken its promise to Brook; the Council can review the plain language of the 1983 Agreement to make that determination. *Claman v. Popp*, 279 P.3d 1003, 1013 (Wyo. 2012) (analyzing a contract begins with its "plain language.") Big Horn's choice to break its promises shows it does not respect Brook or Wyoming law. See *Schlinger v McGhee*, 268 P.3d 264, 268 (Wyo. 2012) (explaining how Wyoming law enforces parties' contracts). Wyoming case law compels the Council to dismiss Big Horn's request.

Big Horn's reason for breaking its promises is simple—delay. Big Horn has used the order in lieu of consent process and the public comment process to needlessly delay Brook's mine permit. Big Horn first asked this Council to deny an order in lieu needed for the permit

process to proceed. Even though Brook prevailed, Big Horn's stance added months to the process. Big Horn has objected again seeking to delay permit approval. Big Horn has also tried to delay the statutorily required 20-day hearing to some unknown date months later. Simply put, Big Horn has spent more than a year using procedural hurdles to derail and delay Brook's permit application despite promising the opposite. That is the very definition of a dilatory tactic.

Should Big Horn's broken promises not be enough to dismiss, the Council should limit what Big Horn can present. Big Horn objected extensively to Brook's mine plan and reclamation plan during the order in lieu of consent process—and lost. Big Horn's current objections repeat many of the same arguments. For example, Big Horn continues to object to an alleged lack of detail in the mine and reclamation plans. But Wyoming law does not allow Big Horn the chance to argue issues already raised and decided between the same parties. *Slavens v. Board of County Comm'rs for Unita County*, 854 P.2d 683, 685-86 (Wyo. 1993) (explaining that collateral estoppel applies to administrative proceedings barring relitigation of the same claims.) This means that if the Council allows Big Horn to participate at all, Big Horn should only be permitted to address objections 10, 11, 14, and 15. All other objections either repeat objections raised in the order in lieu process or could have been raised then.

CONCLUSION

The Council has spoken on the need for objectors to request a contested case. (Ex. A, 2.) But that has consequences for all objectors. None of the objectors, Big Horn included, have filed a request for a contested case hearing within the deadlines set out in Section 406(k). (Ex. A, 2.) Big Horn's late request does not excuse its failure to meet the deadline. Besides not meeting its obligations under the statute, Big Horn has shown that it will not meet its obligations to Brook. Big Horn contracted away the right to object to Brook's permit application 34 years ago. The

Council should not allow Big Horn to violate the terms of the 1983 Release Agreement.

Therefore, Brook requests the Council dismiss Big Horn's February 15, 2017 Petition for a contested case hearing.

Without waiving any of its arguments, Brook respectfully asserts that if the Council decides to hear Big Horn's objections, the Council must proceed expeditiously. The Environmental Quality Act unequivocally sets out a 20-day timeline for holding an informal conference or a public hearing. Even giving Big Horn the benefit of allowing its late-filed Petition to proceed, the Council is statutorily obligated to hold a hearing on Big Horn's objections by March 7, 2017.

DATED: February 22, 2017.



Thomas L. Sansonetti (Wyo. State Bar # 43354)
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Jeffrey S. Pope (Wyo. State Bar # 7-4859)
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insutphin@hollandhart.com
jspope@hollandhart.com

ATTORNEYS FOR PERMIT APPLICANT
BROOK MINING COMPANY, LLC

CERTIFICATE OF SERVICE

I hereby certify that on February 22, 2017, I served a true and correct copy of the foregoing by email to the following:

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Ranchester, WY 82839
bpcharlie@wbaccess.net

Mayor Peter Clark
Town of Ranchester
mayor@ranchesterwyoming.com

David Bagley
Jim Ruby
Environmental Quality Council
Jim.ruby@wyo.gov



Exhibit A

**BEFORE THE ENVIRONMENTAL QUALITY COUNCIL
STATE OF WYOMING**

IN RE BROOK MINE APPLICATION

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DOCKET 17-4801

TFN 6 2-025

ORDER OF DISMISSAL

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After reviewing the pleadings and hearing oral argument from the parties, the Council unanimously finds that there currently is not a proper appeal before it necessitating a contested case. Currently, no interested person, as part of this docket, has filed a petition for a contested case with the Council that would allow the Council to exercise its jurisdiction over the Brook Mine permit application. Following his denial of requests for an informal conference, the

FILED

FEB 22 2017

**Jim Ruby, Executive Secretary
Environmental Quality Council**

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IT IS HEREBY ORDERED that this docket, in its entirety, is dismissed.

ENTERED this 22nd day of February, 2017.




Tim Flitner, Hearing Officer
Environmental Quality Council 

Exhibit B

RELEASE AGREEMENT

THIS RELEASE, made this 6th day of May, 1983, is by and between SHERIDAN-WYOMING COAL COMPANY, INC., a Delaware corporation, whose address for purposes of this Release is c/o Kennedy, Connor and Healy, P.O. Box 607, Sheridan, Wyoming 82801 (hereinafter called the "Lessor"), and BIG HORN COAL COMPANY, a Wyoming corporation, of Sheridan, Wyoming, whose address for purposes hereof is One Thousand Kiewit Plaza, Omaha, Nebraska 68131 (hereinafter called the "Lessee").

WITNESSETH:

WHEREAS, Lessor and Lessee entered into a certain Coal Mining Lease on June 28, 1954, and Supplemental Coal Mining Lease Agreements dated February 15, 1956, October 1, 1957, and September 9, 1977, and entered into a certain Coal Mining Lease dated June 12, 1979, to lease certain property situate in Sheridan County, Wyoming, and more particularly described in Schedule "A" attached hereto and by this reference incorporated herein; and

WHEREAS, Lessee exercised by letter on September 5, 1968, the option provision in the Coal Mining Lease dated June 28, 1954, to extend the lease term for fifteen years, which subsequently provided for that lease to terminate on June 30, 1984; and

WHEREAS, Lessor and Lessee desire to settle certain claims with respect to the Leases and to mutually terminate certain obligations thereunder;

NOW, THEREFORE, in consideration of the mutual covenants and agreements of the parties herein contained, the Lessor and Lessee agree as follows:

1. Lessee agrees to release, relinquish, and surrender unto Lessor all right, title, interest, claim and demand in and to the Leases insofar as they cover certain coal ("Released Coal") situate in Sheridan County, Wyoming, and more particularly described in Schedule "B" attached hereto and by this reference incorporated herein. Lessee will release its interest in the Released Coal to the Lessor by executing and recording this Release, as provided by Section 34-2-130, Wyoming Statutes (1977).

2. Lessee agrees that its obligations under the Leases with respect to property covered by the present Pits 1, 4, and 5 and more particularly described by Schedule "C" attached hereto and by this reference incorporated herein, will continue in force and effect until June 30, 1984.

3. Lessee agrees to quit, vacate, and surrender possession of the property covered by the present Pit 5 to Peter Kiewit Sons' Co. on June 30, 1984.

4. Lessor shall be entitled to retake possession of any of the above-described Released Coal which is not currently in Lessor's possession immediately upon execution of this Agreement, and shall be relieved from further duties and obligations under the aforementioned lease with respect to the Released Coal.

5. Lessor expressly consents and agrees to allow Lessee to leave intact any and all permanent structures, stockpiles, or spoil materials (referred to herein collectively as "structures and stockpiles") currently located in Sections 9, 10, 14, 15, 21, and the N $\frac{1}{2}$ of Section 22 of T. 57N., R. 84W., 6th P.M., as more specifically identified in Schedule D attached hereto. Unless Lessor's express written consent is received, any temporary or permanent structures or stockpiles located south of old Wyoming State Highway 338 in the SE $\frac{1}{4}$ of Section 22 or the N $\frac{1}{2}$ NE $\frac{1}{4}$ and NE $\frac{1}{2}$ NW $\frac{1}{4}$ of Section 27 shall be located at Lessee's sole risk and expense, and shall be subject to the following express conditions: The placement of any temporary or permanent structures or stockpiles in that part of Section 22 south of old Wyoming State Highway 338 and in Section 27 shall be subject to the terms and conditions of the Road Relocation Agreement, dated August 7, 1981, between Big Horn Coal Company and Sheridan-Wyoming Coal Company. In addition, Lessee agrees to move any structures and stockpiles, including the relocation of Wyoming State Highway 338, as necessary, at its sole cost and expense, at such time as the Lessor, or its successors in interest, presents to Lessee a mine plan approved by all applicable governmental agencies to mine the coal in either Section 22 or 27. If the Lessor makes application for approval of a plan to mine any of the coal in the pertinent portions of these two sections, its application shall in no way be prejudiced by the existence of any structures or stockpiles or the location of State Highway 338 in these sections. Lessee will not oppose any such mine plan before any governmental agency and will take no action, direct or indirect, to induce any federal, state, or local agency to disapprove or otherwise object to such mine plan. If approval is conditioned upon Lessee's consent to remove or relocate the road or any structures or stockpiles, Lessee shall not withhold such consent. Lessor reserves the right to seek specific performance of this obligation in addition to any and all remedies available to Lessor including all remedies provided under the Road Relocation Agreement. The parties recognize that the payment of monetary damages will not adequately and sufficiently compensate Lessor in the event Lessee breaches its obligation to move the highway and any structures or stockpiles located on Section 27 and south of old Wyoming State Highway 338 in Section 22. Lessee expressly waives, and shall be estopped from asserting any defenses to Lessor's claim for specific performance of these obligations. If Lessee breaches

8/7/81 Road Re-
location Agrmt.

its obligation, Lessor may, at its option, undertake to relocate the highway and move any structures or stockpiles located on said parts or Sections 22 and 27, and Lessee agrees to reimburse Lessor for any and all costs and expenses resulting from such action.

6. With respect to the coal in those areas described in Schedule B that is to be released, Lessee agrees that it will, upon execution of this Agreement, continue to perform within eighteen months thereafter all abandonment, reclamation, and related procedures required by any applicable law or regulation subject to Paragraph 7 of this Release Agreement. With respect to the coal in those areas described in Schedule C that is to be released on June 30, 1984, Lessee agrees that it will, "by no later than December 31, 1985, perform all abandonment, reclamation and related procedures required by any applicable law or regulation. It is understood, however, that the final reclamation for the identified portion of Section 15 which involves the Pit 3 extension out-of-pit stockpile area, will not necessarily be completed until June of 1987 and that that portion identified in the N $\frac{1}{4}$ of Section 22, and north of old Wyoming State Highway 338 in the SE $\frac{1}{4}$ of Section 22 will need to be redisturbed in the early 1990's with placement of out-of-pit soil from the Pit 1 southeast extension. Such reclamation and restoration activities shall be conducted diligently and in compliance with all applicable federal, state or local laws and regulations, as the same may exist or be enacted or amended from time to time.

7. Lessee agrees to apply for transfer to Lessor, at the option of the Lessor, of those permits and governmental authorizations identified in Schedule E attached hereto and incorporated by this reference with respect to the Released Coal within thirty (30) days from the date of execution of this Release Agreement. Lessee also agrees to transfer, at the option of the Lessor, to the Lessor any and all permits and governmental authorizations with respect to the property covered by the present Pits 1 and 4 by June 30, 1984.

8. Lessee hereby agrees to and does hereby assume all liability for and indemnify, protect, save, and hold harmless Lessor and Lessor's assigns and successors from and against any and all losses, costs, expenses, attorneys' fees, claims, demands, suit, and actions of any character whatsoever (hereinafter referred to collectively as "Liabilities") imposed upon or incurred by the Lessor on account of or arising directly or indirectly out of or in connection with the operations of Lessee with respect to the Released Coal. In the event that any Liabilities arise or are contributed to by the negligence of the Lessor, Lessee's liability for payment of such Liabilities shall be reduced in proportion to the amount of Lessor's negligence.

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A circular seal with a double-lined border. The text "AMERICAN NATIONAL COAL COMPANY, INCORPORATED" is written along the top inner edge, and "DELAWARE" is at the bottom. In the center, the word "SELL" is prominently displayed between two horizontal lines. To the right of the seal, the date "MARCH 1920" is printed.

By:

Title:



By:

Title:

GENERAL SECRETARY - State of Nebraska
DONALD M. GREGG
My Comm. Exp. July 12, 1985

STATE OF CONNECTICUT)
COUNTY OF Fairfield) ss.

Florena D. V.

FLORENCE D. VERRIER
NOTARY PUBLIC
MY COMMISSION EXPIRES MARCH 31, 1987

Schedule A

TO THAT CERTAIN RELEASE AGREEMENT

DATED May 6, 1983

BY AND BETWEEN

THE SHERIDAN-WYOMING COAL COMPANY, INC.

AND

BIG HORN COAL COMPANY

ALL COAL

Coal situate in Sheridan County, Wyoming and subject to the provisions of the Coal Mining Lease dated June 28, 1954, and Supplemental Coal Mining Lease Agreements dated February 15, 1956, October 1, 1957, and September 9, 1977, and the Coal Mining Lease dated June 12, 1979, refers to and is identified by any and all coal owned by SHERIDAN-WYOMING COAL COMPANY, INC., in Sheridan County which is subject to an option to lease, and all coal presently leased and outlined on the Property Map attached to this Schedule A and described as follows:

T. 57 N., R. 84 W., 6th P.M.:

Section 9:	E1/2	320 acres
Section 10:	W1/2	320 acres
Section 14:	That portion of SW1/4SW1/4 located south and west of the center of the Tongue River	11 acres
Section 15:	All of the NW1/4	160 acres
	SW1/4	160
	SW1/4NE1/4	40
	W1/2SE1/4	80
	That portion of NE1/4SE1/4 located southwest of the center of the Tongue River	6
	SE1/4SE1/4	40
	A tract of land in the NE1/4NE1/4 described as	

follows: "Beginning at a point on the west line of the NE1/4NE1/4 of Section 15, which point lies 150 ft. north of the southwest corner of the NE1/4NE1/4 of said Section 15; thence northeasterly to a point on the east line of the NE1/4NE1/4 of said Section 15, which point lies 150 ft. south of the northeast corner of the NE1/4NE1/4 of said Section 15, thence south to the southeast corner of the NE1/4NE1/4 of said Section 15, thence west to the southwest corner of the NE1/4NE1/4 of said Section 15; thence north along the west line of the NE1/4NE1/4 of said Section 15 to the point of beginning."

20 acres

But excepting the following described two parcels of land from said Section 15.

The land in the SW1/4 belonging to Carl Weissman and Sons described as follows: "Beginning at a point 50 ft. north 26°54'30" west of a point which is 1,984.5 ft. north 31°23' east from the southwest corner; thence north 69°6' west 100.51 ft.; thence north 26°54'30" west 420.82 ft.; thence north 24°54' east 127.24 ft.; thence south 86°14' east 509.5 ft.; thence south 26°55' east 363.2 ft.; thence south 69°6' west 477.6 ft. to the point of beginning."

(less 6 acres)

Also that tract belonging to Big Horn Coal Company known as the Acme townsite and

more particularly described as follows: "Beginning at a point 20 ft. west of the northwest corner of SE1/4SW1/4 of Section 15; thence north 0°42' west, a distance of 300 ft. along the east boundary of the present County Road; thence due east a distance of 130 ft.; thence south a distance of 300 ft., more or less, to the north boundary of the SE1/4SW1/4 of said Section 15; thence east along said boundary line a distance of 1,223 ft. to the northeast corner of the SE1/4SW1/4 of Section 15; thence south along the east boundary of said quarter section to the center of the present channel of Goose Creek; thence northwesterly along the center of Goose Creek to a point 20 ft. west of the west boundary of the SE1/4SW1/4 of Section 15; thence north to the point of beginning."

(less 25 acres)

Section 20: That portion of NE1/4 south of the county road which was formerly U.S. Highway 87
N1/2SE1/4
SE1/4SE1/4

122 acres
80
40

Section 21: That portion of N1/2 located north of BNRR right-of-way, except a tract of land described as follows: "All that part of the SW1/4NW1/4 of said Section 21 lying north of the north boundary line of the C.B.&Q. Railroad Company (BNRR) right-of-way."

151 acres

Section 22: ALL

640 acres

Section 27: NW1/4	160 acres
Section 28: That portion of E1/2 north of Wyoming State Highway 339	254 acres
	<hr/>
Subtotal	2604 acres, more or less
Less Section 15 exceptions	31 acres, more or less
	<hr/>
Total	2573 acres, more or less

Schedule B

TO THAT CERTAIN RELEASE AGREEMENT

DATED May 6, 1983

BY AND BETWEEN

THE SHERIDAN-WYOMING COAL COMPANY, INC.

AND

BIG HORN COAL COMPANY

RELEASED COAL

Coal situate in Sheridan County, Wyoming and described in the foregoing Release Agreement as the "Released Coal" refers to and identifies any and all coal owned by SHERIDAN-WYOMING COAL COMPANY, INC., in Sheridan County which is subject to an option to lease, and the coal which is presently leased and is described by the Property Map attached to Schedule A which is outlined in red and described as follows:

T. 57 N., R. 84 W., 6th P.M.:

Section 9:	S1/2NW1/4SE1/4	20 acres
	S1/2SE1/4	80
Section 10:	S1/2S1/2SW1/4	40 acres
Section 15:	Northerly 3/8 (990 ft., more or less) of NW1/4	60 acres
Section 20:	That portion of NE1/4 south of the county road which was formerly U.S. Highway 87	122 acres
	N1/2SE1/4	80
	SE1/4SE1/4	40

Section 21:	That portion of N1/2 located north of BNRR right-of-way, except a tract of land described as follows: "All that part of the SW1/4NW1/4 of said Section 21 lying north of the north boundary line of the C.B.&Q. Railroad Company (BNRR) right-of-way."	151 acres
Section 22:	W1/2 That portion of SE1/4 south of the south boundary of the right of way for the old Wyoming State Highway 338	320 acres 83
Section 27:	NW1/4	160 acres
Section 28:	That portion of E1/2 north of Wyoming State Highway 339	254 acres
Total		<hr/> 1410 acres, more or less

Schedule C

TO THAT CERTAIN RELEASE AGREEMENT
DATED May 6, 1983

BY AND BETWEEN
THE SHERIDAN-WYOMING COAL COMPANY, INC.
AND
BIG HORN COAL COMPANY

PITS 1, 4, 5

Coal situate in Sheridan County, Wyoming and described in the foregoing Release Agreement as the coal covered by the present Pits 1, 4, and 5 refers to and identifies the section of the Property Map attached to Schedule A which is outlined in blue and green and described as follows:

Section 9:	NE1/4	160 acres
	NE1/4SE1/4	40
	N1/2NW1/4SE1/4	20
Section 10:	NW1/4	160 acres
	N1/2SW1/4	80
	N1/2S1/2SW1/4	40
Section 14:	That portion of SW1/4SW1/4 located south and west of the center of the Tongue River	11 acres
Section 15:	All of the NW1/4 except the northerly 3/8 (990 ft., more or less) thereof	100 acres
	SW1/4	160
	SW1/4NE1/4	40
	W1/2SE1/4	80
	That portion of NE1/4SE1/4 located southwest of the center of the Tongue River	6
	SE1/4SE1/4	40
	A tract of land in the NE1/4NE1/4 described as	

246

follows: "Beginning at a point on the west line of the NE1/4 NE1/4 of Section 15, which point lies 150 ft. north of the southwest corner of the NE1/4 NE1/4 of said Section 15; thence north-easterly to a point on the east line of the NE1/4 NE1/4 of said Section 15, which point lies 150 ft. south of the northeast corner of the NE1/4 NE1/4 of said Section 15, thence south to the southeast corner of the NE1/4 NE1/4 of said Section 15, thence west to the southwest corner of the NE1/4 NE1/4 of said Section 15; thence north along the west line of the NE1/4 NE1/4 of said Section 15 to the point of beginning."

20 acres

But excepting the following described two parcels of land from said Section 15.

The land in the SW1/4 belonging to Carl Weissman and Sons described as follows: "Beginning at a point 50 ft. north 26°54'30" west of a point which is 1,984.5 ft. north 31°23' east from the southwest corner; thence north 69°6' west 100.51 ft.; thence north 26°54'30" west 420.82 ft.; thence north 24°54' east 127.24 ft.; thence south 86°14' east 509.5 ft.; thence south 26°55' east 363.2 ft.; thence south 69°6' west 477.6 ft. to the point of beginning."

(less 6 acres)

Also that tract belonging to Big Horn Coal Company known as the Acme townsite and more particularly described as follows: "Beginning at a point 20 ft. west of the northwest corner of SE1/4SW1/4 of Section 15; thence north 0°42' west, a distance of 300 ft. along the east boundary of the present County Road; thence due east a distance of 130 ft.; thence south a distance of 300 ft., more or less, to the north boundary of the SE1/4SW1/4 of said Section 15; thence east along said boundary line a distance of 1,223 ft. to the northeast corner of the SE1/4SW1/4 of Section 15; thence south along the east boundary of said quarter section to the center of the present channel of Goose Creek; thence northwesterly along the center of Goose Creek to a point 20 ft. west of the west boundary of the SE1/4SW1/4 of Section 15; thence north to the point of beginning."

(less 25 acres)

Section 22: NE1/4

That portion of SE1/4 located north of the south boundary of the right of way for the old Wyoming State Highway 338

160 acres

77

Subtotal

1194 acres, more or less

Less Section 15 exceptions

31 acres, more or less

Total

1163 acres, more or less

Schedule D

TO THAT CERTAIN RELEASE AGREEMENT

DATED May 6, 1983

BY AND BETWEEN

THE SHERIDAN-WYOMING COAL COMPANY, INC.

AND

BIG HORN COAL COMPANY

ENCUMBERED SURFACE

Property situate in Sheridan County, Wyoming and described in the foregoing Release Agreement, refers to and identifies that property upon which Big Horn Coal Company has placed or will place permanent structures or stockpiles and is described as follows:

T57N, R84W, 6th P.M.

- Section 9: NE1/4 (160 acres)
- Section 10: S1/2SW1/4 (80 acres)
- Section 14: That portion of the SW1/4SW1/4 located south and west of the center of the Tongue River (11 acres)
- Section 15: W1/2SE1/4 (80 acres)
That portion of the NE1/4SE1/4 located southwest of the center of the Tongue River (6 acres)
SE1/4SE1/4 (40 acres)
N1/2NE1/4 (80 acres)
SW1/4NE1/4 (40 acres)
NW1/4 (160 acres)
- Section 21: The portion of the N1/2 located north of BNRR right-of-way, except a tract of land described as follows:
"All that part of the SW1/4NW1/4 of said Section 21 lying north of the north boundary line of the C.B. & Q. Railroad Company (BNRR) right-of-way." (151 acres)
- Section 22: N1/2 (320 acres)

Schedule E

TO THAT CERTAIN RELEASE AGREEMENT

DATED May 6, 1983

BY AND BETWEEN

THE SHERIDAN-WYOMING COAL COMPANY, INC.

AND

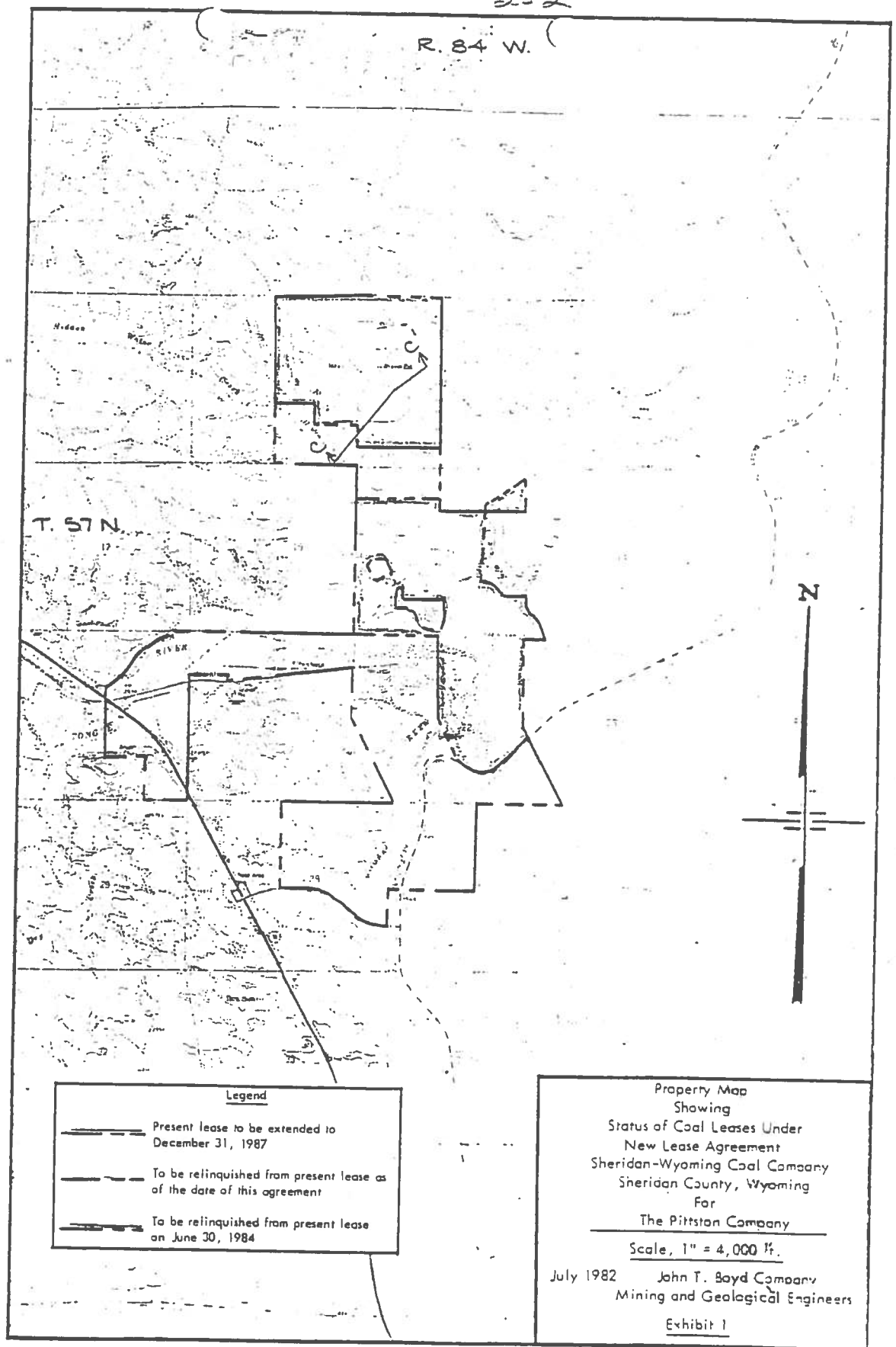
BIG HORN COAL COMPANY

LIST OF PERMITS

The following list of permits represent those permits that shall be transferred by the Lessee to the Lessor, upon Lessor's request, in order for Lessor to continue coal mining operations on the Released Coal:

Permit to Mine
Air Quality Permit
Wastewater Discharge Permit
Solid Waste Management and Disposal Permit
NPDES Discharge Permit
Construction Permit
Blasting/Explosives Permit
Sanitation Permit
MSHA
FCC

All transferrable local permits covering land use, air quality, water quality, etc.



BHC00200

Exhibit C



**BIG HORN COAL COMPANY
10980 SOUTH JORDAN GATEWAY
SOUTH JORDAN, UT 84095**

January 25, 2017

Wyoming Department of Environmental Quality
Land Quality Division
200 W. 17th Street
Cheyenne, WY 82002

ATTN: Mr. Alan Edwards, Assistant Administrator

**RE: Objections to Proposed Brook Mine Permit Application, Sheridan County,
Wyoming**

Dear Mr. Wendtland,

Big Horn Coal Company (BHCC) writes to provide objections to the Brook Mine permit application.

During the course of our review, we discovered that the information was inconsistent among the locations noted in the public notice. We advised Brook Mine's legal counsel of the inconsistency on December 20, 2016. We are not aware if the information was updated to correct the inconsistency between the locations.

Our objections are based upon what BHCC believes to be the most accurate, up-to-date information and relate primarily to the permit application's lack of adequately addressing hydrologic issues that could significantly affect existing and future water rights, the quantity and quality of surface water and groundwater within and adjacent to BHCC, the potential for coal seam fires to erupt in both the open pit and subsurface openings and the potential for miner safety and environmental harm proposed in the permit Mine Plan. The objections are referenced to text section headings, exhibits and addenda of the permit application Mine and Reclamation Plan.

Objection No. 1 – Mine Plan & Rec Plan Review

Big Horn Coal has reviewed the proposed mine and reclamation plan and is concerned with the general lack of detail contained in the proposed plan. It appears that no sampling, testing or analytical work of any sort has been performed to support the surface and highwall mine designs and plans. It is Big Horn Coal's opinion that excavating in the area, surrounding the Big Horn Mine will create a large safety concern and environmental

liability as the TR-1 trench cut could become inundated with water from the historic backfill of the BHCC spoils of Pit 1 and Pit 2.

BHCC would like to put on record that it is providing written notice of its concerns so Brook Mine and other affected parties have notice and are aware of these issues and that Big Horn Coal is not responsible for any personal, property or environmental damage or other loss due to the disturbance activities associated with the Brook Mine, its affiliated companies or successors in interest.

BHCC has not consented to overlapping permit boundaries nor has it been indemnified of any disturbance related to Brook Mine's proposed activities as it relates to the reclamation obligations and BHCC's reclamation liabilities.

Objection No. 2 – Section MP.4; Exhibit MP.4-1; Section MP.5; Section MP.13; Addendum MP-6

Section MP.4 and Exhibit MP.4-1 provide plans for the development of a highwall mining trench through and the development of highwall mining panels beneath reclaimed backfill of BHCC Pits 1 and 2 adjacent to Goose Creek and the Tongue River in the southeastern portion of the Brook Mine permit area. The trench would penetrate through the bottom of the backfill allowing mining of Carney coal found about 70 feet beneath the backfill. The backfill of the proposed trench area averages about 90 feet thick. The northeast corner of the highwall panel area appears on Exhibit MP.4-1 to be equivalent to the Brook Mine permit boundary, and would be less than 100 feet from the bank of the Tongue River. On Figure MP-6.1-1 of Addendum MP-6, the highwall mining panels are shown even closer to the Tongue River channel, and the reason for the disparity between the figure and Exhibit MP.4-1 is unexplained. BHCC is very concerned over and objects to the permit's disturbance, affected and permit boundaries all being equivalent to the mining panel boundary in this most environmentally sensitive area adjacent to the bank of the Tongue River. The affected area boundary shown on Exhibit MP.4-1 around the other proposed mining panels typically extends well beyond the disturbance boundary for reasons unexplained in the Mine Plan.

Mine Plan Section MP.4, together with all Mine Plan text inclusive of Section MP.13 and Addendum MP-6, are silent on the subject of the special textural and hydrologic characteristics of the proposed southeastern highwall mining area in Sections 15 and 22, T57N, R84W. The area is unique in that the strata overlying the coal to be mined includes a thick layer of unconsolidated, saturated backfill exhibiting shallow groundwater elevations of 20 feet or less below ground surface where existing ground elevations are 3600 feet and lower. The water surface in BHCC's postmining Reservoir 14 in the SESE Sec. 15 is an expression of the groundwater table. The groundwater throughout Pits 1 and 2 is directly connected to and recharged by Goose Creek and the Tongue River, as documented in the Big Horn Mine's Reclamation History, Groundwater Restoration Demonstration (GRD) approved by the WDEQ/LQD as Change No. 9 to Permit 213-T5 in August 2002. The GRD verifies that the Pits 1 and 2 backfill resaturated very rapidly, indicative of unconsolidated, porous material connected to perennial stream recharge sources nearby. Mine Plan Section MP.4 is silent on the subject of managing massive sloughing that may occur in the saturated and nonsaturated backfill of the southeastern highwall mining area as the highwall mining trenches are excavated through the backfill to the base of Carney coal. Section MP-5 of the Mine Plan also fails to present an

alternative water management and treatment plan to be followed should groundwater inflow volumes exceed infrastructure design capacities.

BHCC finds the assessment of potential land subsidence and the remediation plan presented for land subsidence in Addendum MP-6 to be inadequate relative to protecting the value and function of its lands, particularly for protecting the stability of the Tongue River and the quality of shallow groundwater connected to the river. Addendum MP-6 does not absolutely discount the possibility of land subsidence above the highwall miner holes, nor does it provide a plan for the discontinuation of any southeastern area highwall mining should subsidence occur in the lowlands contiguous to Tongue River or Goose Creek. The environmental implications of subsidence developing adjacent to Tongue River and Goose Creek are so severe as to warrant, at a minimum, a permit commitment to temporarily or permanently cease all mining throughout all of the southeastern highway mining area should any subsidence develop in any of the area at any time. The permit's plan for "backfilling will commence within 12 months of a subsidence location being identified if self-healing is not providing sufficient remediation" (Section MP-6.4, Addendum MP-6) is environmentally unacceptable for the southeastern highwall mining area because: 1) the stability and alignment of Goose Creek and Tongue River could be jeopardized should subsidence occur, and; 2) any groundwater quality impacts associated with underground coal fires developing in mine openings would have direct and essentially immediate access to Goose Creek and Tongue River via the shallow groundwater table.

The subsidence control plan presented in Addendum MP-6 is inadequate. It appears that no analytical work of any sort (sampling, material testing, etc.) has been performed in support of the highwall mining design presented in the mine plan. Additionally, it also appears that no geotechnical work of any sort has been performed. Addendum MP-6 discusses general assumptions for highwall mining penetration depths, entry widths, cutting heights and support pillars. This information is presented somewhat anecdotally and in the case of the support pillars, it states that "Support pillars will be designed to have a width equal to or exceeding the maximum extraction thickness anticipated in a highwall mining hole based on the mine's geologic model. This width-to-height ratio of at least 1:1 results in pillar stability factors that exceed recommended values suggested by National Institute for Occupational Safety and Health's (NIOSH) ARMPS-HWM stability program for the overburden thicknesses expected. Pillar dimension will also be in accordance with Brook Mine's Ground Control Plan approved by MSHA."

No material strength data (coal strength, overburden strength, interburden strength, etc.) is provided in the mine plan document. BHCC suspects that no material strength information has been gathered or determined. Can the NIOSH stability factors actually be achieved? This is unknown at this point as no definitive geotechnical and material strength data has been presented in the mine plan. The coals present in this area are of a younger age. Younger age coals have much weaker strengths than older age, deeper coals and it is quite possible that the safety and stability factors needed to safely and effectively execute the highwall mining approach presented in the mine plan cannot be achieved. BHCC insists that further analysis be performed to definitively prove that the web and barrier pillars dimensions are appropriate and that they will meet NIOSH's minimum stability factor of 1.3.

Very little highwall mining has been performed in Wyoming. Highwall mining has been performed relatively recently at the Bridger Mine, which is located in Southwest Wyoming.

While the exact details are unknown, BHCC is aware of at least one “cascading pillar failure” at that operation and fortunately, there were no injuries. It is suspected that this failure was caused by improper pillar layout and design. BHCC is concerned that the anecdotal mine design presented in this document is inadequate and must be performed with proper analytical data.

Objection No. 3 – Section MP.5.9; Section MP.6.2; Addendum MP-3; Section MP.8

The groundwater model of Addendum MP-3 was improperly constructed and executed because the model does not recognize the unique textural and hydraulic characteristics of saturated backfill in BHCC’s Pits 1 and 2, but instead simulates the backfill in the same fashion as native overburden strata (see Section 4.0 of Addendum MP-3). Section 2.5.1 of Addendum MP-3 states “no site-specific hydraulic conductivity information is available for the over/interburden (model) layers”. In fact, hydraulic conductivity data are available for the backfill from former monitor wells in the Pit 1 and Pit 2 area and for the Plachek Pit backfill. That data are provided in the GRD referenced under Objection No. 1 above. Hydraulic conductivity values assigned to the spoils together with all other “overburden” strata in the model are very small (less than one tenth) relative to those shown for backfill in the GRD. The groundwater model ignores determination of the spatial extent of drawdown in the water table of Pit 1 and Pit 2 backfill that is connected to the water table in Tongue River and Goose Creek alluvium, which in turn is supplied by flows in both streams. The text of Section MP.6.2.3 states “Drawdowns of the overburden were not modeled and only isolated sands where encountered are expected to be affected”.

Section 4.9 and Figure 4.9-11 of Addendum MP-3 shows where the groundwater model was used to predict water table drawdown in Tongue River valley alluvium at “alluvial target” points distributed over nearly a six-mile reach of the valley floor. Section 4.9 states that “the maximum impact to the Tongue River alluvium is conservatively estimated to reach 2.5 feet of drawdown near the river”. Addendum MP-3 and Section MP.6.2 provide no description or drawing of the spatial distribution of drawdown during mining in BHCC’s saturated backfill or in the alluvium of Tongue River and Goose Creek that is hydraulically connected to the backfill. Neither does the groundwater model explore potential permanent groundwater elevation changes associated with the highwall mining panels acting as drains to the backfill and alluvial water table via the highwall trench pits. Water table drawdown approaching 2.5 feet in the alluvium of Tongue River valley over a valley distance of nearly six miles would in fact represent a very large volume water loss that would likely cause stream flow losses.

The groundwater model of Addendum MP-3 fails to report groundwater inflow rates to any of the proposed mine excavations. Section MP.8 of the Mine Plan states “It is estimated that the total water use will be approximately 400 million gallons per year.” This is equivalent to an average daily use rate of 760 gallons per minute, about 3.36 acre-feet per day, or about 1,226 acre-feet per year. The Mine Plan does not identify the specific source(s) of the water beyond mentioning that “Industrial water will be obtained from groundwater wells or from water collected in sediment and flood control reservoirs”. The groundwater model of Addendum MP-3 does not include the effects of withdrawing any groundwater from wells for industrial or other uses, nor does it include the effects of dewatering wells mentioned in Section MP.5.9. In short, the Mine Plan is devoid of a hydrologic budget identifying specific groundwater sources, the quantity of industrial

water projected to be available from flood control reservoirs and sediment ponds, and the determination of what would remain of groundwater and surface water supplies while supplying the industrial water needs. BHCC is concerned that the value of its surface estate and future options for developing its surface estate could be marginalized by such a large water use demand, especially considering that water demands at Wyoming coal mines are primarily consumptive.

Objection No. 4 – Section MP.11; Addendum MP-5

The fire control plan referenced in Section MP.11 and presented in Addendum MP-5 describes measures to be taken to prevent and control fires in the mine pits, fires in the mine's processing and shop facilities, equipment fires and rangeland fires. BHCC objects, however to the Mine Plan and Addendum MP-5 not providing plans to control and extinguish new subsurface coal fires that may develop or existing subsurface coal fires that may become rekindled or enlarged as a result of the highwall mining panels that will be opened outboard of the highwall trench openings.

Attachment 1 provided with this Objection No. 4 is a drawing showing the approximate extent of underground coal mine fires in the area of proposed highwall mining in Sections 10 and 15, T57N, R84W, as reported by the U.S. Geological Survey in 1980. The fires in this particular area originated with mining of the Monarch coal. This and other nearby historic underground mines have long been known to exhibit numerous subsidence features and underground coal mine fires, and in the late 1980s BHCC received approval from the WDEQ/LQD to permanently place nearly 10 million bank cubic yards of overburden over the area shown on Attachment 1 in an attempt to reclaim the subsidence and control the fire. That unique reclamation feature is known as the Pit 3 Subsidence Dump in Big Horn Mine's reclamation history. The proposed highwall mining will develop mine openings in the Carney and Masters coal seams beneath the Monarch seam in areas that are known to still exhibit evidence of underground coal fires. Plumes of steam and smoke have been observed again over the general area of Sections 10 and 15 this winter of 2016-2017. These observations indicate that, in places, the perimeter of the historic subsurface coal seam fires has expanded notable distances from the referenced 1980 boundary delineation.

The subsidence control plan of Addendum MP-6 does little to guarantee the long-term protection of BHCC's surface estate especially where highwall mining panels will be driven beneath underground coal mine fires having a long history of activity. Section MP-6.2 of Addendum MP-6 provides numerical calculations for subsidence chimney heights, but there is no investigation of the potential that the historic mine fires may have compromised the structural integrity of strata underlying the fires and overlying the coals targeted for highwall panel mining (the interburden), leaving the interburden more prone to subside than normal. BHCC is particularly concerned and objects to highwall mining beneath or adjacent to pre-existing underground mine fires because of the potential for oxygen and water to be transmitted from the highwall mining openings to "hotspots" in the seams already burning via highwall trenches or via fractured or subsided interburden above the panel openings. BHCC strongly disagrees with the legitimacy of the plan stated in Section MP-6.4 of Addendum MP-6 which states "Backfilling will also be performed if it is determined that the introduction of water and oxygen could contribute to spontaneous ignition of the remaining coal not extracted from the highwall mining operations". BHCC

contends it to be common knowledge in the mining industry that oxygen and water are key catalysts in causing spontaneous combustion in coal, whether the coal be in mine openings or in stockpiles. BHCC also believes that the introduction of additional water and air to a coal seam already on fire is especially problematic.

Section MP-6.3 of Addendum MP-6 commits to maintaining highwall mining mapping and subsidence documentation in a subsidence report that will be available for inspection. BHCC objects to the Mine Plan not committing to freely submitting the highwall mining mapping and subsidence documentation report to all owners of surface estate within the Brook Mine permit area. BHCC also objects to the fact that the Subsidence Monitoring and Assessment reporting of Section MP-6.3 does not include mapping, photographing and describing all evidence of surface or underground coal fires occurring within the Brook Mine permit area whenever such evidence becomes available throughout the life of the mining and post-mining periods.

Objection No. 5 – Section MP.1.3; Exhibit MP.1-1

The mine plan on Page MP-5, identifies the “disturbance boundary includes all lands that will be physically and directly disturbed during mining.” Exhibit MP.1-1 shows the disturbance boundary as a dashed orange symbol that outlines an entire pink hatched polygon, identified as “DISTURBANCE FOR YEAR 2016,” located in Sections 15, 21, 22 and 27 of Township 57 North, Range 84 West.

Within the pink hatched polygon, there are existing assets to Big Horn Coal Company. These assets include a rail spur, water tank, pump house, access roads, fences and land owned by BHCC. Also within the pink hatch polygon is the mainline of the Burlington Northern Railroad and associated lands owned by Burlington Northern.

Based on the definition of Disturbance Boundary as indicated on page MP-5, does Brook Mine indeed have the rights to physically and directly disturb these lands within the pink hatched polygon? From the public record, BHCC has not been able to determine whether Brook Mine has secured surface owner consent from all surface owners, including the railroad, for these activities

Objection No. 6 – Section MP.1.5

The mine plan states on Pages MP-5 and continue onto page MP-6 that “Coal will either be temporarily stored in the pit or directly hauled off site.”

There is no mention in the permit as to where the coal will be hauled off site. Additionally there is no known agreement with the County of Sheridan, indicating approval to haul mineral across county roads.

Objection No. 7 – Section MP.1.9

The mine plan states on Pages MP-7 that “The Brook Mine will operate in conjunction with Taylor Quarry (Permit No. SP-757)... The Mine will work with Taylor Quarry to minimize impacts on Taylor Quarry’s operation.”

The following paragraph states "The Brook Mine will not obstruct Big Horn Coal's (Permit 231-T8) Shop, Bridge, and Rail Road Siding as they exist in Big Horn Coal's 2015 Annual Report. An access road equivalent to the existing improved road will be provided if proposed stockpiles or pits should restrict the existing access as shown on Exhibit MP.1-1.

To remain consistent with the statements made in regards to the Taylor Quarry, Big Horn Coal requests that the paragraph referencing Big Horn to be replaced and restated as follows:

"The Brook Mine will operate in conjunction with the Big Horn Mine and that the Brook Mine will work with Big Horn Coal to minimize impacts to Big Horn Coal operations. Specifically, Brook Mine will not obstruct Big Horn Coal's (Permit 213-T8) Shop, Bridge, and Rail Road Siding as they exist in Big Horn Coal's 2015 Annual Report. An access road equivalent to the existing improved road will be provided if proposed stockpiles or pits should restrict the existing access as shown on Exhibit MP.1-1."

Big Horn Coal requests that the text be updated in the previous paragraph to reference the correct permit number for Big Horn Coal Company as (Permit 213-T8).

Objection No. 8 – Section MP.3.1, Section MP.3.1.3 – Roads; Exhibit MP.3-1

As stated in the mine plan on Page MP-11, "Primary roads are any road used for transporting mineral or spoil, or frequently used for access or other purposes for a period in excess of six months, or roads to be retained for postmining use."

WDQ/LQD Rules and Regulations (R&R) Chapter 4, Section 2(j)(vii):

Primary roads.

(A) Certification. The construction or reconstruction of primary roads shall be certified in a report to the Administrator by a registered professional engineer. The report shall indicate that the primary road has been constructed or reconstructed as designed and in accordance with the approved plan. The report shall be available for review at the mine site within 30 days following the completion of construction of each primary road.

Mine plan Exhibit MP.3-1, titled Transportation Network identifies proposed primary haulroads as a solid black line, for the use of transporting mineral or spoil. Yet, there are no haulroads identified in the SE quarter of Section 15, Sections 21, 22 or 27. If the Brook Mine plans to haul mineral or spoil materials from the proposed Trench Cut (TR-1), there should be indication of a primary haul road leaving TR-1, accompanied by a certification of the road design. Unless there are no plans of transporting mineral or spoil from the TR-1 area.

Objection No. 9 – Section MP.4.2.3 – Stockpiles; Exhibit MP.4-3

The mine plan states on Page MP-16, "Stockpiles will not be constructed on unsuitable backfill."

Mine plan Exhibit MP.4-3, Stockpile Locations identifies Topsoil Stockpile TS-1B proposed location within an area known as the Placheck Pit. This area was mined by Big Horn Coal from 1956 through 1963. It is Big Horn Coal's understanding that the proposed area beneath TS-1B is indeed unsuitable material and that topsoil should not be placed in the area as proposed on Exhibit MP.4-3. Additionally, Big Horn Coal is not aware of a surface owner consent document between Brook Mining Company and the Burlington Northern Railroad that would allow the crossing of the mainline with loaded haul trucks.

Objection No. 10 – Section MP.6.1; Exhibit MP.7-1

Exhibit MP.7-1 represents the operational Surface Water and Groundwater Monitoring Program. There are only two downstream surface water monitoring sites, identified as Big Horn No. 2 Reservoir and Big Horn No. 14 Reservoir. The text on page MP-41 of the Mine Plan states "However, the Big Horn No. 2 Reservoir and Big Horn No. 14 Reservoir will be disturbed by facilities disturbance."

Big Horn Coal believes there is inadequate downstream monitoring in the proposed plan. Upon disturbing of Big Horn No. 2 Reservoir and Big Horn No. 14 Reservoir, there will be no sites downstream of the Brook Mine to collect adequate surface and groundwater data to prove that there are no off site environmental impacts from the proposed operation.

Objection No. 11 - Addendum MP-2, Exhibit MP-2

The proposed Sediment Pond SP-8 is located within the current postmine approved Reservoir 14 constructed by BHCC. The bottom elevation of Reservoir 14 is currently at 3575 with a peak elevation at 3589. Sediment Pond SP-8 bottom elevation is proposed at 3585 with a high water elevation proposed at 3590. It is noted below the area capacity table on Exhibit 13, "1. Pond is entirely incised. No Spillway hydraulics are provided."

These elevations lead BHCC to believe the plan for construction of SP-8 will require Reservoir 14 to be completely backfilled prior to construction of SP-8. BHCC requests that the reconstruction and the water quality within Reservoir 14 be restored to pre-mining conditions before final bond release is allowed.

Objection No. 12 – Exhibit MP.4-1; Exhibit MP.4-2; Exhibit MP.4-5; Exhibit RP.5-1

The proposed mine plan indicates that topsoil and overburden removal will occur upon the BHCC Property and within the TR-1 area in years 1 and 2 of operation. Exhibit MP.4-1 shows coal removal to occur over the same first two years of operation. Exhibit MP.4-5 shows the overburden backfill sequence within TR-1 will occur in year 2. Exhibit RP.5-1 shows the topsoil replacement sequence within the BHCC Property occurring in years 12-16.

BHCC objects to this timeline of topsoil replacement upon its property. The BHCC property is the first to be disturbed and the last to be reclaimed. BHCC asks the question as to why every other proposed disturbance area is backfilled and topsoiled within a 2 to 3 year time frame except around the BHCC facilities area. The topsoil replacement timeframe is unacceptable and not contemporaneous in accordance with the Surface Mining Control and Reclamation Act, (SMCRA) and it is requested that the final

reclamation around the BHCC Property be within the 2 to 3 year time frame, similar to all other areas around the mine.

Objection No. 13 – Section MP.1.2.1; Figure MP.1-2.

Section MP.1.2.1 discusses the work that will be done to “prepare for highwall mining” and describes how the “trenches” will be constructed to “create working areas for highwall mining equipment”. This section of the mine plan states that “The highwalls will have a 65-degree bench slope to provide a stable trench environment. Where the trench intersects the burnt Monarch coal seam, a 35-foot wide safety bench will be added. Where the Carney and Masters coal seams come close to convergence, a vertical wall will be used to maintain the desired pit width.” Earlier, under Objection No. 2, BHCC discussed the presence of saturated backfill where trench TR-1 is planned to be excavated. Section MP.1.2.1 does not address in any fashion the fact that trench TR-1 will be constructed in an area containing a significant amount of saturated backfill material. In our opinion, utilizing a 65-degree bench slope in this material will be impossible as the saturated backfill will not safely stand at this angle. Furthermore, no geotechnical information (sampling, testing or analysis) supporting slope stability assumptions for the surface mining or highwall mining operations have been provided in the mine plan. BHCC finds the information regarding highwall bench slope angles presented in MP.1.2.1 to be inadequate given the variability of non-coal material that will be encountered during excavation of trenches in support of the highwall mining operation.

Objection No. 13 – Section MP.1.2.1; Figure MP.1-2.

Section MP.1.2.1 discusses the work that will be done to “prepare for highwall mining” and describes how the “trenches” will be constructed to “create working areas for highwall mining equipment”. This section of the mine plan states that “The highwalls will have a 65-degree bench slope to provide a stable trench environment. Where the trench intersects the burnt Monarch coal seam, a 35-foot wide safety bench will be added. Where the Carney and Masters coal seams come close to convergence, a vertical wall will be used to maintain the desired pit width.” Earlier, under Objection No. 2, BHCC discussed the presence of saturated backfill where trench TR-1 is planned to be excavated. Section MP.1.2.1 does not address in any fashion the fact that trench TR-1 will be constructed in an area containing a significant amount of saturated backfill material. In our opinion, utilizing a 65-degree bench slope in this material will be impossible as the saturated backfill will not safely stand at this angle. Furthermore, no geotechnical information (sampling, testing or analysis) supporting slope stability assumptions for the surface mining or highwall mining operations have been provided in the mine plan. BHCC finds the information regarding highwall bench slope angles presented in MP.1.2.1 to be inadequate given the variability of non-coal material that will be encountered during excavation of trenches in support of the highwall mining operation.

Objection No. 14 – Section MP.4.4.1

It is a well-known fact within the mining industry that the term “Reserves” connotes that the mineral being extracted can be done so economically. BHCC opines that the mining approach presented in the mine plan cannot be done economically. Based on our internal

knowledge; the operating cost for a contractor to perform highwall mining is in the \$8/Ton to \$12/Ton range, which is very close to the domestic spot price for this type of coal. By the time the other costs for the surface mining to develop the highwall mining, transportation, G&A, etc. are taken into consideration, this operation appears to be completely uneconomical.

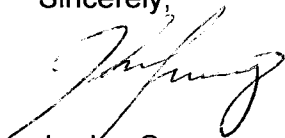
The market for this coal is unclear. The two closest coal mines, Decker and Spring Creek, serve the domestic and international market. Port capacity to the international market is constrained and it is unlikely that Brook Mine will secure access. Domestic demand has been in decline and is significantly oversupplied. Without a definitive market, the Brook Mine is at risk of commencing operations, producing product it cannot sell economically, and reclamation obligations that it cannot fund.

Objection No. 15 – Section MP.15

Objection No. 4 above introduces the fact that the underground mine fires in this area are still burning and have expanded. Section MP.15 does not, in any way, address that the burned areas have expanded. A surface mine excavation that comes in contact with a historic mine fire could be catastrophic in many ways, including: impacting the safety of mine workers, damage to equipment, wildfire initiation, etc. BHCC believes this mine plan has not adequately addressed surface mining activities that will occur near underground mines and insists that the Brook Mine operators must perform the necessary testing and analysis to prove that the proposed mine plan will not be impacted by historic mine fires. Specifically, attachment 1 provided with Objection No. 3 above shows that trench TR-2 is planned very near an area that was burning and is likely still burning. Given that the burned area has likely expanded, this area should not be disturbed at all.

In conclusion, Big Horn Coal Company feels strongly that the Brook Mine permit application should not be approved or deemed technically complete. The mine and reclamation plan lack a significant amount of detail that is required for a technical completeness determination, as stated in the above mentioned objections.

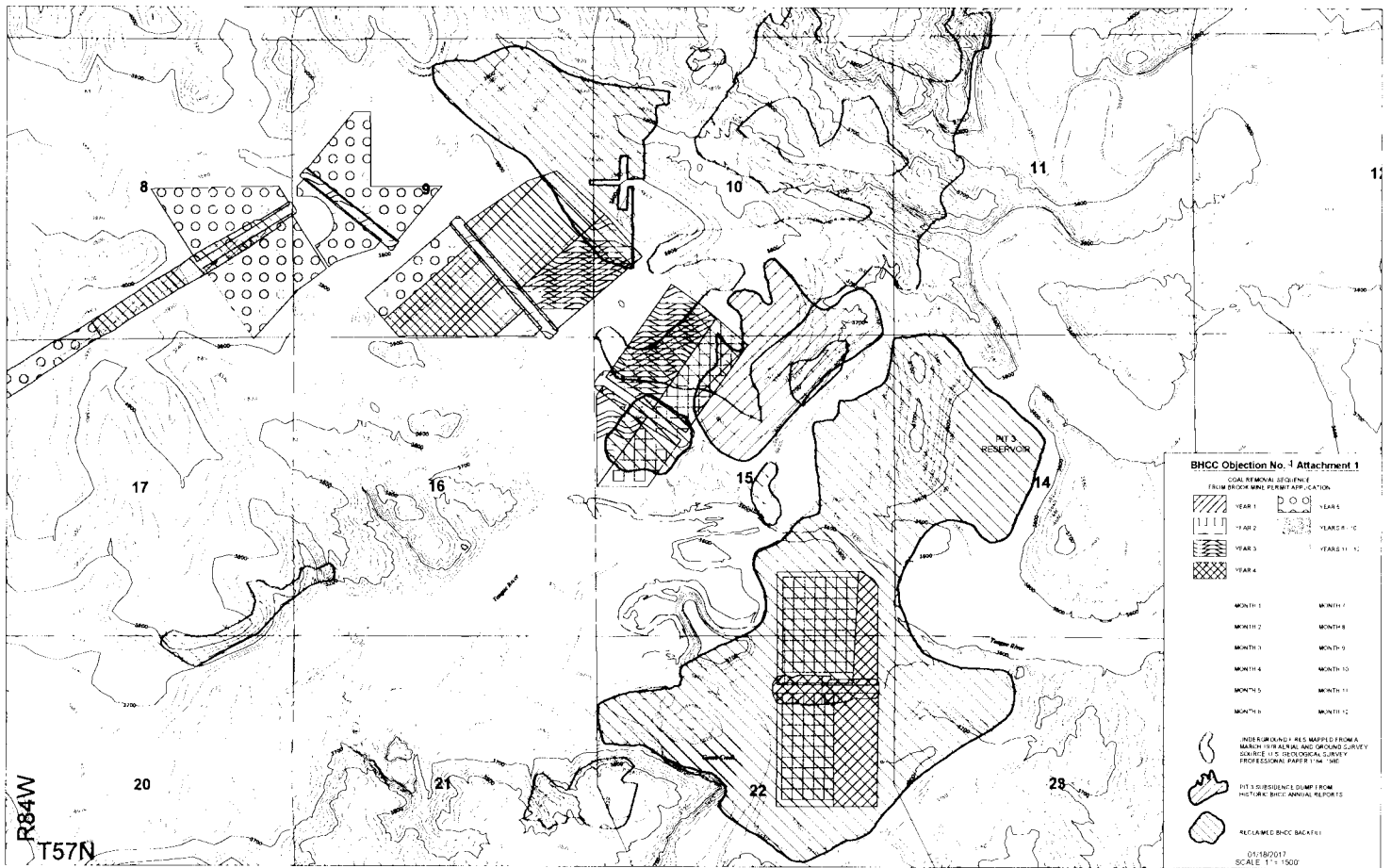
Sincerely,

A handwritten signature in black ink, appearing to read 'Jordan Sweeney', written over a horizontal line.

Jordan Sweeney

General Manager
Big Horn Coal Company

Attachment: BHCC Objection No.4 Attachment 1



From: Lynne Boomgaarden
To: [Jim Ruby](#); [Isaac Sutphin](#); [James LaRock](#); [Jeffrey S. Pope](#); [Shannon Anderson](#); andrew.kuhlmann@wyo.gov; bpcharlie@wbaccess.net; [Clayton Gregersen](#); jgilbertz@yonkeetoner.com; tlsansonetti@hollandhart.com; todd.parfitt@wyo.gov
Cc: EQC-All@wyo.gov; [Michael Klein \(m.klein@lhr-inc.com\)](mailto:Michael.Klein@m.klein@lhr-inc.com)
Subject: RE: EQC Docket No. 17-4801
Date: Thursday, February 16, 2017 1:43:01 PM

Thank you, Mr. Ruby. I will appear in person for oral argument.

Regards,

Lynne

Lynne Boomgaarden



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From: Jim Ruby [mailto:jim.ruby@wyo.gov]

Sent: Thursday, February 16, 2017 1:18 PM

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jgilbertz@yonkeetoner.com; tlsansonetti@hollandhart.com; todd.parfitt@wyo.gov

Cc: EQC-All@wyo.gov

Subject: Re: EQC Docket No. 17-4801

Each party will be given 5 minutes during oral arguments the tentative order is Ms. Anderson. Ms. Boomgaarden. Mr. Gilbertz. Ms. Collins. Mr. Kuhlman and Mr. Pope. If the parties prefer a different order of presentation. Feel free to make a suggestion. Have a great weekend and I will see you on Tuesday.

Jim

On Wed, Feb 15, 2017 at 2:32 PM Shannon Anderson <sanderson@powderriverbasin.org> wrote:

Parties:

Please find attached our brief in response to the EQC's Order of last week.

I will be appearing in person at next week's oral arguments. Jim, if you could advise us of the general time parameters & order of the parties for the argument, that would be very helpful.

Thank you,
Shannon

Shannon Anderson
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E-Mail to and from me, in connection with the transaction of public business, is subject to the Wyoming Public Records Act and may be disclosed to third parties.

From: Jim Ruby
To: [Isaac Sutphin](#); [James LaRock](#); [Jeffrey S. Pope](#); [Lynne Boomgaarden](#); [Shannon Anderson](#); [andrew.kuhlmann@wyo.gov](#); [bpcharlie@wbaccess.net](#); [cgregersen@crowleyfleck.com](#); [jgilbertz@yonkeetoner.com](#); [tlsansonetti@hollandhart.com](#); [todd.parfitt@wyo.gov](#)
Cc: [EQC-All@wyo.gov](#)
Subject: Re: EQC Docket No. 17-4801
Date: Thursday, February 16, 2017 1:18:19 PM

Each party will be given 5 minutes during oral arguments the tentative order is Ms. Anderson. Ms. Boomgaarden. Mr. Gilbertz. Ms. Collins. Mr. Kuhlman and Mr. Pope. If the parties prefer a different order of presentation. Feel free to make a suggestion. Have a great weekend and I will see you on Tuesday.

Jim

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Thank you,

Shannon

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Join us at www.powderriverbasin.org

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To: [Jan Kelley](mailto:Jan.Kelley@crowleyfleck.com); lboomgaarden@crowleyfleck.com; jwacker@crowleyfleck.com; wdrake@crowleyfleck.com; todd.parfitt@wyo.gov; andrew.kuhlmann@wyo.gov; sanderson@powderriverbasin.org; alan.edwards@wyo.gov; bpcharlie@wbaccess.net
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Subject: RE: In re Brook Mine Application - Fisher's Brief
Date: Wednesday, February 15, 2017 4:52:23 PM
Attachments: [Fishers" Notice To Appear By Telephone.pdf](#)
[Fishers" Brief.pdf](#)

Attached is the Fishers' Brief and a copy of the Notice of intent to attend the hearing by telephone.

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Attorney for Objectors,

Mary Brezik-Fisher and David Fisher

BEFORE THE ENVIRONMENTAL QUALITY COUNCIL

IN RE BROOK MINE APPLICATION

DOCKET 17-4801

TFN 6 2-025

NOTICE TO APPEAR BY TELEPHONE

Jay A. Gilbertz, counsel for Objectors Mary Brezik-Fisher and David Fisher, and pursuant to the Order Vacating Contested Case Hearing And Setting Oral Argument dated February 7, 2017, hereby provides advance notice to the Council that he will be appearing by telephone for the oral argument hearing set for February 21, 2017 at 1:30 p.m. Please provide the call-in number to participate in this hearing.

DATED this 15th day of February, 2017.

YONKEE & TONER, LLP

Jay A. Gilbertz, WSB # 6-3087

Attorney for Objectors

Mary Brezik-Fisher and David Fisher

319 West Dow Street

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Sheridan, WY 82801

Telephone: (307) 674-7451

Telefax: (307) 672-6250

CERTIFICATE OF SERVICE

I, Jay A. Gilbertz, hereby certify that on the 15th day of February, 2017, I served a true and correct copy of the above and foregoing *by electronic transmission*, duly addressed as follows:

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andrew.kuhlmann@wyo.gov

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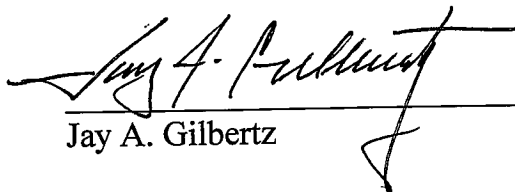
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jim.ruby@wyo.gov

Via U.S. Mail:

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Council Business Coordinator
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Attorney for Objectors,
Mary Brezik-Fisher and David Fisher

**BEFORE THE ENVIRONMENTAL QUALITY COUNCIL
STATE OF WYOMING**

IN RE BROOK MINE APPLICATION)
) **DOCKET 17-4801**
TFN 6 2-025)
)

**FISHERS' BRIEF REGARDING WHETHER A
CONTESTED CASE HEARING IS PROPERLY BEFORE
THE EQC AT THIS TIME**

Mary Brezik-Fisher and David Fisher, through their undersigned attorney, hereby file this brief in relation to the issue of whether a contested case hearing is properly before the Environmental Quality Council at this time.

I. Procedural Background

Brook Mining Company, LLC filed an application for a mining permit with the Wyoming Department of Environmental Quality (DEQ) in relation to a surface coal mine which Brook proposes in and near the alluvial Tongue River Valley just north of Sheridan, Wyoming. DEQ personnel evidently considered the permit application ready for publication

and thus authorized Brook Mining to send direct notice to affected landowners and publish general public notice of the pending application in the newspaper. Both the direct notice to the Fishers and the notice published in the paper stated that *"The Director may hold an informal conference if requested, hear the complaint and take action on the application in accordance with the Department's Rules of Practice and Procedure. The complainants shall have a right of appeal to the Environmental Quality Council where the complaint will be heard a second time."* (See copy of Notice attached as Appendix 1). The notice was clearly suggestive that the DEQ would initially hear the complaints of the objectors and that at a later time the EQC would hear any continuing complaints "a second time".

The Fishers and numerous other parties filed objections and all, or nearly all, objectors requested an informal conference with the Director as they were directed to do in the notices. Rather than providing an informal conference, the DEQ decided to refer this matter directly to the EQC to hear the objectors' complaints for the first time. For the reasons explained below, this was inappropriate and in violation of the Department's own Rules and Regulations. The EQC must return this matter to the DEQ with direction that the Director Todd Parfitt or an appropriate Administrator¹ conduct the informal conference.

¹ The Administrator of the Land Quality Division is Kyle Wendtland. Mr. Wendtland is the brother of attorney Tony Wendtland of Sheridan, Wyoming. The Fishers are informed that Tony Wendtland has an attorney-client relationship with RAMACO or Brook Mine and has advocated on behalf of the entities' plans for the Brook Mine. This creates a clear conflict of interest or at least the appearance of such a conflict and Kyle Wendtland should not be involved in any decisions in relation to this mine application.

II. The Department of Environmental Quality's Rules and Regulations Dictate that the Objecting Parties Must be Given an Informal Conference with the DEQ Prior to this Matter Being Taken up by the Environmental Quality Council.

The Fishers' position on this matter is best understood by addressing the issue in the context of the statutes and regulations which apply, the DEQ's own controlling Rules of Practice and Procedure and the legal arguments of the various objectors.

Wyoming Statute § 35-11-406(k) provides that any party objecting to the coal mining permit must file their written objections within 30 days after the last date that notice of the pending coal mining application is published in the newspaper. That same section of the statute goes on to say that the Director shall hold an informal conference if one is requested by any objector but suggests the DEQ has the discretion to decide if it is "preferable" for the matter to be addressed in an informal conference or to decide to refer the objections to the EQC for a full contested case proceeding. (See Wyo. Stat. 35-11-406(k) LexisNexis 2015.)

Fishers, Powder River Basin Resource Council and other objectors take issue with this assumed discretionary power of the DEQ to forego the informal conference. Fishers and the other objectors contend that Wyoming's statute providing the DEQ with the discretion to forego the informal hearing is contrary to the Federal minimum requirements under these circumstances. Under Federal environmental law, there is no discretion regarding the informal conference associated with a proposed coal mine. The law states that "the regulatory agency *shall* then hold an informal conference in the locality of the proposed mining" 30 U.S.C. § 1263(b) (emphasis added).

It is a basic tenet of environmental law that Wyoming may only exercise control over the application and administration of environmental protection laws *so long as* Wyoming's environmental rules and regulations are drafted and applied in at least as stringent and protective a manner as the federal counterpart law – in this case, the Surface Mining Control and Reclamation Act, 30 U.S.C. § 1201, et seq. (“SMCRA”). Therefore, Wyoming DEQ's regulations, application and enforcement must be no less protective, no less stringent and no less effective than the federal rules. 30 U.S.C. § 1253; 30 C.F.R. § 730.5. As stated above, under Federal law, the informal conference is mandatory in nature and not discretionary. (See 30 U.S.C. § 1263(b)).

Importantly, however, the DEQ's own Rules of Practice appear to resolve the statute's inconsistency with Federal law and afford the same protection and procedure as that afforded under SMCRA. (See DEQ Rules of Practice and Procedure Chapter 3 § 3(a)). Rule 3(a) relates directly and specifically to surface coal mining permits and states that an informal conference *shall* be conducted by DEQ. The only discretionary aspect of the DEQ's own rule is that the DEQ is vested with the discretion to decide whether the objectors will be given access to the proposed mine site itself. DEQ's rule at Chapter 3, §3, also states the conference should be held in “the locality of the proposed mining operation or at the state capitol, at the option of the requester”. This essentially mirrors the Federal rule's requirement that the conference be held in the “locality of the proposed mining”. (See 30 U.S.C. § 1263(b).) Put another way, any “discretion” afforded by Wyo. Stat §35-11-406(k) to the DEQ is negated or removed by DEQ's own Rules and Regulations which make the

informal conference mandatory – just like the Federal law counterpart set forth in SMCRA.

It is likely that the DEQ's own rule, which affords the absolute right to an informal conference, was purposefully constructed to ensure Wyoming's procedure for dealing with coal mining applications was in harmony with the minimum procedure established by Federal law on this same point. The Wyoming Environmental Quality Council must hold the DEQ to its own rules and require that an informal conference be conducted in Sheridan County, Wyoming – the locality of the proposed mining operation.

III. The Rules of Practice and Procedure Provide for a Stay of Proceedings before the EQC for the Purposes of facilitating an Informal Review by the Director.

DEQ's Rules of Practice and Procedure, Chapter 6, provide for an informal review by the Director of the DEQ of any action or proposed action by DEQ during the pendency of an appeal to the EQC. Rules of Practice and Procedure, Chapter 6, §4(a) provides:

(a) Where an appeal to the Council of the Administrator's decision is afforded, a petition should be filed with the Council within the time provided by law. This proceeding will be stayed if an informal conference with the Director is requested until the Director has made his determination. If the petitioner is not satisfied with the Director's determination, he shall inform the Council that he wishes to proceed with appeal to the Council. The Council shall conduct the hearing as if the informal hearing had not occurred, provided however, that the Director's decision may be introduced into evidence.

In this case all (or nearly all) of the Objectors requested an informal conference from the outset. If not clear by their previous written requests on this topic, the Fishers hereby demand an informal conference with the Director on this matter. The Fishers' prior filing of objections otherwise satisfies any requirement for identification of the issues which the Fishers would like to address in the conference. Similarly, the filed objections of the other

objectors outline their concerns which they wanted addressed at the informal conference. As it stands, the EQC has had this matter referred to it – a matter in which the DEQ has not made any determinations as to whether or not to grant the permit. All the objecting parties have requested an informal conference on this coal mining application but such a conference has not been provided contrary to the DEQ's own rules. The DEQ's and EQC's Rules of Practice and Procedure dictate that these proceedings be "stayed" pending the Director of the DEQ conducting an informal conference and making a "determination". A EQC contested case hearing is only appropriate after a determination has been rendered by the Director and after one or more of the objectors request such a hearing in light of the Director's determination.

IV. Enforcement of DEQ's own Rules and Regulations also Helps to Resolve the Procedural Due Process and Other Practical Problems Caused by Disregarding the Mandatory Requirement for an Informal Hearing.

As part of the initial filings with the EQC, the Fishers raised objections based on due process grounds. Fishers and several other objectors who joined in this motion contend that by moving forward with an extremely abbreviated pre-hearing schedule so that a full-blown contested case could be started just a few days after the objections were filed deprived the objectors of any meaningful way to prepare for this important hearing and denied them the right to engage in the discovery otherwise provided by the Administrative Procedure Act. Those arguments and contentions will not be repeated here, but Fishers adopt by reference their prior objections and the brief on this subject filed with the EQC relating to these procedural deficiencies.

There is a fundamental difference between being prepared to present complaints and observations in an informal setting within 20 days and being fully prepared for a contested case trial-like adjudication in just 20 days. If the EQC stays this matter as it must and directs the Department to comply with its own rules by providing the informal hearing, any subsequent contested case hearing would not be subject to this impermissibly truncated pre-hearing procedure. Put another way, these serious due process problems are likely resolved by enforcing the DEQ's own rules.

Yet another problem is created by proceeding directly to a contested case proceeding in lieu of an informal conference. Under Wyo. Stat. § 35-11-406(p), after the conclusion of the contested case proceeding before the EQC, the EQC should issue findings of fact and a "decision on the application". Thereafter, the Director shall "issue or deny" the permit within 15 days. However, before any coal mining permit is granted, the Administrator must make *in writing* all findings required by Wyo. Stat. §35-11-406(n). To the best of the Fishers' knowledge these findings have not yet been made by the Administrator. Consequently, if the EQC were to proceed with a contested case hearing at this time, it could face a subsequent appeal as to the Administrator's findings under Subsection (n) of the statute. On the other hand, requiring the DEQ to follow its own rules would alleviate the potential for multiple appeals to the EQC.

WHEREFORE, and for the foregoing reasons set forth above, the Fishers request that the Environmental Quality Council direct the DEQ to follow its own established Rules of Practice and Procedure and direct the DEQ to have the Director Todd Parfitt conduct an

informal conference in Sheridan County, Wyoming.

DATED this 15th day of February, 2017.

YONKEE & TONER, LLP

A handwritten signature in black ink, appearing to read "Jay A. Gilbertz", is written over a horizontal line.

Jay A. Gilbertz, WSB # 6-3087

Attorney for Objectors

Mary Brezik-Fisher and David Fisher

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CERTIFICATE OF SERVICE

I, Jay A. Gilbertz, hereby certify that on the 15th day of February, 2017, I served a true and correct copy of the above and foregoing *by electronic transmission*, duly addressed as follows:

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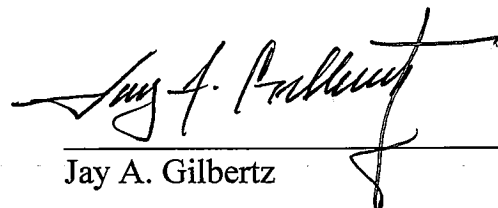
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Jay A. Gilbertz

Public Notice

The Brook Mining Co., LLC of 1101 Sugarview Drive, Suite 201, Sheridan, WY 82801 has applied for a coal mining permit from the Land Quality Division of the Department of Environmental Quality for the State of Wyoming. The coal mining permit area will be located in: Sections 10, 11, 12, 13, 14 and 15 Township 57N, Range 85W, and Sections 7, 8, 9, 10, 15, 17, 18, 20, 21, 22 and 27 Township 57N, Range 84W Sheridan County, Wyoming. The Brook Mine is located approximately 6 miles Northwest of Sheridan, Wyoming. This area can be found on the Acme and Monarch USGS quadrangle maps. The proposed operation is scheduled to begin July 2017 and is estimated to continue until 2032. The land, after mining, will be returned to a grazing land use. Information regarding the proposed mining operation and reclamation procedures may be reviewed in the Office of the Land Quality Division of the Department of Environmental Quality in Cheyenne and Sheridan, Wyoming, the office of RAMACO in Sheridan, WY, or the Sheridan County Clerk's Office Sheridan, Wyoming. Written objections to the proposed mining operation must be received by the Administrator of the Land Quality Division, Department of Environmental Quality, 200 W. 17th Street, Cheyenne, WY 82002, before the close of business January 27, 2017. The Director may hold an informal conference if requested, hear the complaint and take action on the application in accordance with the Department's Rules of Practice and Procedure. The complainants shall have a right of appeal to the Environmental Quality Council where the complaint will be heard a second time. A conference shall be held if the Director determines that the nature of the complaint or the position of the complainants indicates that an attempt to informally resolve the disputes is preferable to a contested case proceeding. An informal conference or a public hearing shall be held within twenty (20) days after the final date for filing objections unless a different period is stipulated to by the parties. The Council or Director shall publish notice of the time, date and location of the hearing or conference in a newspaper of general circulation in the locality of the proposed operation once a week for two (2) consecutive weeks immediately prior to the hearing or conference. The hearing would be conducted as a contested case in accordance with the Wyoming Administrative Procedure Act (W.S. §16-3-101 through §16-3-115), and the right of judicial review would be afforded as provided in that act. All parties as given in W.S. §35-11-406(j) will be mailed a copy of this notice. The Wyoming Oil and Gas Commission will be mailed a copy of the application mine plan map as required by W.S. §35-11-406(j).

Appendix

From: Jenny Wacker
To: Andrew.kuhlmann@wyo.gov; james.larock@wyo.gov; todd.parfitt@wyo.gov; sanderson@powderriverbasin.org; mayor@ranchesterwyoming.com; bpcharlie@wbaccess.net; jgilbertz@vonkeetoner.com; alan.edwards@wyo.gov; jim.ruby@wyo.gov; insutphin@hollandhart.com; jspope@hollandhart.com; tlsansonetti@hollandhart.com
Cc: [Lynne Boomgaarden](#); [Clayton Gregersen](#); [Wendy Drake](#); [Jenny Wacker](#)
Subject: Objector Big Horn Coal Company's Petition for a Hearing Before the EQC and Exhibit
Date: Wednesday, February 15, 2017 4:35:57 PM
Attachments: [Objector Big Horn Coal Company's Petition for a Hearing Before the EQC.pdf](#)
[Exhibit to Petition for Hearing.pdf](#)

Attached please find *Objector Big Horn Coal Company's Petition for a Hearing Before the EQC and Exhibit to Petition for Hearing*.

Thank you,

Jenny Wacker



Jenny Wacker

Administrative Assistant to Lynne Boomgaarden and Keith Burron

OFFICES:
BILLINGS BISMARCK BOZEMAN BUTTE CASPER CHEYENNE HELENA KALISPELL MISSOULA SHERIDAN WILLISTON

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ATTORNEYS FOR OBJECTORS
BIG HORN COAL COMPANY

**BEFORE THE ENVIRONMENTAL QUALITY COUNCIL
STATE OF WYOMING**

IN RE BROOK MINE APPLICATION)	
	)	Docket No. _____
)	
TFN 6 2-025)	

**OBJECTOR BIG HORN COAL COMPANY'S PETITION FOR A
HEARING BEFORE THE ENVIRONMENTAL QUALITY COUNCIL**

Big Horn Coal Company ("Big Horn"), by and through it undersigned counsel, Crowley Fleck PLLP, hereby submits this Petition for Hearing before the Environmental Quality Council (the "Council").

This matter arises from the coal mining permit application of Brook Mining Company, LLC ("Brook Mine") and the numerous objections related thereto. First and foremost, Big Horn asserts that it requested and has renewed its request for an informal conference in this matter, and that DEQ should reconsider Big Horn's and

the other objectors' requests for an informal conference.¹ In the event that DEQ confirms its decision to deny the requests for an informal conference, Big Horn now requests a contested case hearing before the Council regarding Brook Mine's permit application and Big Horn's objections thereto pursuant to Wyo. Stat. Ann. § 35-11-112(a)(iv),(c)(ii); -406(k),(p).

Facts

1. Big Horn Coal Company is a Wyoming corporation, active and in good standing, with its principal office located at 110980 South Jordan Gateway, South Jordan, Utah. Big Horn is wholly owned by LHR Coal, LLC and LHR Coal, LLC is wholly owned by Lighthouse Resources, Inc.

2. Brook Mining Company, LLC is a Wyoming limited liability company with its principal office located at 1101 Sugarview Drive, Ste. 201, Sheridan, WY.

3. Brook Mine has submitted an application for a coal mining permit from the Land Quality Division of the Department of Environmental Quality for the State of Wyoming, DEQ File No. TFN 6 2-025 (the "permit application").

¹ Big Horn asserts that numerous requests for an informal conference were made during the period for filing objections to Brook Mine's permit application pursuant to Wyo. Stat. Ann. § 35-11-406(k). In furtherance of its initial request and given the current, unique procedural posture of this matter, Big Horn has also formally renewed its request for an administrative, informal conference, attached hereto as **Exhibit A**. This request for a contested case hearing before the Council is contingent on a confirmed denial of an opportunity for informal conference and to ensure that the objections of Big Horn are properly presented and considered.

4. According to the public notice, the coal mining permit area will be located in: Sections 10, 11, 12, 13, 14 and 15 of Township 57N, Range 85W and Sections 7, 8, 9, 10, 15, 17, 18, 20, 21, 22, and 27 of Township 57N, Range 84W Sheridan County, Wyoming (the “permit area”).

5. Big Horn is the owner of real property interests in the permit area that will be negatively affected by proposed mining operations.

6. Big Horn has existing rights and reclamation obligations pursuant to its existing Mine Permit No. 213-T8, which lies within the boundaries of Brook Mine’s proposed mine permit area.

7. Pursuant to the Public Notice of Brook Mining Co., LLC Permit Application, written objections to the proposed mining operation were to be received by the Administrator of the Land Quality Division, Department of Environmental Quality before the close of business on January 27, 2017. *See* EQC Docket No. 17-4801.

8. Big Horn, along with several other parties, timely filed written objections to the proposed mining operation citing numerous concerns, including but not limited to, highly technical issues regarding the accuracy and completeness of Brook Mine’s mine and reclamation plans due to a lack of testing, data, and analysis to support present conclusions on hydrologic impacts, material strength, sloughing, and dangers related to existing subsurface fire activity and subsidence. The objections primarily address concerns pertaining to human health, safety and

the likely environmental impacts of the proposed mining operation. *See* EQC Docket No. 17-4801.

Request for Hearing

Big Horn now requests that the Environmental Quality Council schedule and hold a contested case hearing in this matter, in accordance with the Wyoming Administrative Procedure Act, whereby the Council will make findings of fact and issue a determination on the permit application.

Issues to be Determined at the Hearing

1. Whether Brook Mine has satisfied its obligations to ensure that the permit application is in compliance with Wyoming's Environmental Quality Act and all applicable state laws, and that Brook Mine has demonstrated that it has or can meet all requirements set forth in Wyo. Stat. Ann. § 35-11-406(n).
2. Whether Brook Mine has met and satisfied all conditions and requirements for submission and approval of its permit application, mining plan and reclamation plan found in the Environmental Quality Act and the Rules and Regulations of the Wyoming Department of Environmental Quality, including but not limited to those from Wyo. Admin. Code ENV LQD Ch. 2 and Ch. 12.

WHEREFORE, Big Horn hereby requests that the Environmental Quality Council schedule and hold a contested case hearing in this matter whereby:

1. The Council shall issue findings of fact and a decision on the permit application within sixty (60) days after the final hearing. Wyo. Stat. Ann. § 35-11-406(p).

2. The Director of the Department of Environmental Quality shall issue or deny the permit within fifteen (15) days of the Council's findings and decision. *Id.*
3. The parties shall be afforded right of judicial review from any action resulting from this hearing as provided in the Wyoming Administrative Procedure Act. *Id.* at -406(k).

DATED: February 15, 2017.

By



Lynnette Boomgaarden (WSB # 5-2837)

Clayton H. Gregersen (WSB # 7-5677)

Crowley Fleck PLLP

237 Storey Boulevard, Suite 110

Cheyenne, WY 82009

(307) 426-4100

Attorneys for Objectors

Big Horn Coal Company

CERTIFICATE OF SERVICE

I hereby certify that on February 15, 2017, a true and correct copy of the foregoing was served by certified mail, return receipt requested, to the following:

David Bagley
Chairman, EQC
122 W. 25th
Herschler Bldg. 1W, Room 1714
Cheyenne, WY 82002

Todd Parfitt, Director
Wyoming Department of Environmental
Quality
200 W. 17th Street
Cheyenne, WY 82002

Thomas L. Sansonetti
Isaac N. Sutphin
Jeffrey Pope
2515 Warren Ave., Suite 450
P.O. Box 1347
Cheyenne, WY 82003-1347
Attorneys for Brook Mining Co., LLC

I hereby certify that on February 15, 2017, a true and correct copy of the foregoing was served by email to the following:

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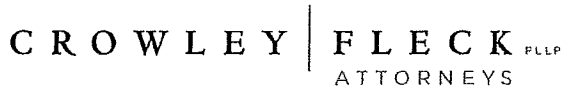
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Town of Ranchester
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David Bagley
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Environmental Quality Council
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Alan Edwards
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EXHIBIT A



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February 15, 2017

VIA: *Kyle.Wendtland@wyo.gov*
Todd.Parfitt@wyo.gov

Kyle Wendtland, Administrator
Land Quality Division
Wyoming Department of Environmental Quality
200 W. 17th Street, Suite 10
Cheyenne, WY 82002

Todd Parfitt, Director
Wyoming Department of Environmental Quality
200 W. 17th Street
Cheyenne, WY 82002

**RE: Renewed Request for an Informal Conference regarding Big Horn
Coal Company's Written Objections to Brook Mining Co., LLC's
Coal Mining Permit Application, DEQ File No. TFN 6 2-025**

Dear Mr. Wendtland and Mr. Parfitt,

On behalf of Big Horn Coal Company ("Big Horn"), and for the reasons stated in Objector Big Horn Coal Company's Brief Addressing Whether the Environmental Quality Council Presently has Jurisdiction over this Matter, I am renewing Big Horn's previous request for an administrative informal conference pursuant to Wyo. Stat. Ann. § 35-11-406(k) and Wyo. Admin. Code ENV PP Ch. 3 § 3.

The requested conference shall be for the purpose of considering Big Horn's written objections to Brook Mining Company's surface coal mining permit application, DEQ File No. TFN 6 2-025, filed with Mr. Wendtland on January 25, 2017. In accordance with the Rules and Regulations, the primary issues to be addressed at this conference shall include: (1) whether Brook Mine has or can meet its burden of satisfying all requirements for permit approval

pursuant to Wyo. Stat. Ann. § 35-11-406(n) and the related Rules and Regulations; and (2) the merits of Big Horn's technical objections to Brook Mine's permit application, which primarily relate, but are not limited, to hydrologic data and impacts, material testing and data, sloughing, existing subsurface fire activity and related controls, and subsidence.¹ Big Horn staunchly believes these issues can be best addressed, and possibly resolved or narrowed, in the context of an open, candid, informal conference with Big Horn representatives, Brook Mine and its consultants, and the DEQ technicians who reviewed and will take action on Brook Mine's mine and reclamation plans and any accompanying data. Pursuant to Wyo. Admin. Code ENV PP Ch. 3 § 1, Big Horn requests that a record of the conference be made.

Big Horn does not request that the conference be held in the locality of the proposed mining operation and does not request access to the proposed permit area. However, if another interested party requests these accommodations, Big Horn has no objection thereto.

Big Horn requests that the informal conference be held as soon as practicable.

Sincerely,

CROWLEY FLECK PLLP



LYNNE BOOMGAARDEN

¹ A copy of Big Horn's objections to the Brook Mine permit application filed in this matter is attached hereto as **Exhibit A**.

EXHIBIT A



**BIG HORN COAL COMPANY
10980 SOUTH JORDAN GATEWAY
SOUTH JORDAN, UT 84095**

January 25, 2017

Wyoming Department of Environmental Quality
Land Quality Division
200 W. 17th Street
Cheyenne, WY 82002

ATTN: Mr. Alan Edwards, Assistant Administrator

**RE: Objections to Proposed Brook Mine Permit Application, Sheridan County,
Wyoming**

Dear Mr. Wendtland,

Big Horn Coal Company (BHCC) writes to provide objections to the Brook Mine permit application.

During the course of our review, we discovered that the information was inconsistent among the locations noted in the public notice. We advised Brook Mine's legal counsel of the inconsistency on December 20, 2016. We are not aware if the information was updated to correct the inconsistency between the locations.

Our objections are based upon what BHCC believes to be the most accurate, up-to-date information and relate primarily to the permit application's lack of adequately addressing hydrologic issues that could significantly affect existing and future water rights, the quantity and quality of surface water and groundwater within and adjacent to BHCC, the potential for coal seam fires to erupt in both the open pit and subsurface openings and the potential for miner safety and environmental harm proposed in the permit Mine Plan. The objections are referenced to text section headings, exhibits and addenda of the permit application Mine and Reclamation Plan.

Objection No. 1 – Mine Plan & Rec Plan Review

Big Horn Coal has reviewed the proposed mine and reclamation plan and is concerned with the general lack of detail contained in the proposed plan. It appears that no sampling, testing or analytical work of any sort has been performed to support the surface and highwall mine designs and plans. It is Big Horn Coal's opinion that excavating in the area, surrounding the Big Horn Mine will create a large safety concern and environmental

liability as the TR-1 trench cut could become inundated with water from the historic backfill of the BHCC spoils of Pit 1 and Pit 2.

BHCC would like to put on record that it is providing written notice of its concerns so Brook Mine and other affected parties have notice and are aware of these issues and that Big Horn Coal is not responsible for any personal, property or environmental damage or other loss due to the disturbance activities associated with the Brook Mine, its affiliated companies or successors in interest.

BHCC has not consented to overlapping permit boundaries nor has it been indemnified of any disturbance related to Brook Mine's proposed activities as it relates to the reclamation obligations and BHCC's reclamation liabilities.

Objection No. 2 – Section MP.4; Exhibit MP.4-1; Section MP.5; Section MP.13; Addendum MP-6

Section MP.4 and Exhibit MP.4-1 provide plans for the development of a highwall mining trench through and the development of highwall mining panels beneath reclaimed backfill of BHCC Pits 1 and 2 adjacent to Goose Creek and the Tongue River in the southeastern portion of the Brook Mine permit area. The trench would penetrate through the bottom of the backfill allowing mining of Carney coal found about 70 feet beneath the backfill. The backfill of the proposed trench area averages about 90 feet thick. The northeast corner of the highwall panel area appears on Exhibit MP.4-1 to be equivalent to the Brook Mine permit boundary, and would be less than 100 feet from the bank of the Tongue River. On Figure MP-6.1-1 of Addendum MP-6, the highwall mining panels are shown even closer to the Tongue River channel, and the reason for the disparity between the figure and Exhibit MP.4-1 is unexplained. BHCC is very concerned over and objects to the permit's disturbance, affected and permit boundaries all being equivalent to the mining panel boundary in this most environmentally sensitive area adjacent to the bank of the Tongue River. The affected area boundary shown on Exhibit MP.4-1 around the other proposed mining panels typically extends well beyond the disturbance boundary for reasons unexplained in the Mine Plan.

Mine Plan Section MP.4, together with all Mine Plan text inclusive of Section MP.13 and Addendum MP-6, are silent on the subject of the special textural and hydrologic characteristics of the proposed southeastern highwall mining area in Sections 15 and 22, T57N, R84W. The area is unique in that the strata overlying the coal to be mined includes a thick layer of unconsolidated, saturated backfill exhibiting shallow groundwater elevations of 20 feet or less below ground surface where existing ground elevations are 3600 feet and lower. The water surface in BHCC's postmining Reservoir 14 in the SESE Sec. 15 is an expression of the groundwater table. The groundwater throughout Pits 1 and 2 is directly connected to and recharged by Goose Creek and the Tongue River, as documented in the Big Horn Mine's Reclamation History, Groundwater Restoration Demonstration (GRD) approved by the WDEQ/LQD as Change No. 9 to Permit 213-T5 in August 2002. The GRD verifies that the Pits 1 and 2 backfill resaturated very rapidly, indicative of unconsolidated, porous material connected to perennial stream recharge sources nearby. Mine Plan Section MP.4 is silent on the subject of managing massive sloughing that may occur in the saturated and nonsaturated backfill of the southeastern highwall mining area as the highwall mining trenches are excavated through the backfill to the base of Carney coal. Section MP-5 of the Mine Plan also fails to present an

alternative water management and treatment plan to be followed should groundwater inflow volumes exceed infrastructure design capacities.

BHCC finds the assessment of potential land subsidence and the remediation plan presented for land subsidence in Addendum MP-6 to be inadequate relative to protecting the value and function of its lands, particularly for protecting the stability of the Tongue River and the quality of shallow groundwater connected to the river. Addendum MP-6 does not absolutely discount the possibility of land subsidence above the highwall miner holes, nor does it provide a plan for the discontinuation of any southeastern area highwall mining should subsidence occur in the lowlands contiguous to Tongue River or Goose Creek. The environmental implications of subsidence developing adjacent to Tongue River and Goose Creek are so severe as to warrant, at a minimum, a permit commitment to temporarily or permanently cease all mining throughout all of the southeastern highway mining area should any subsidence develop in any of the area at any time. The permit's plan for "backfilling will commence within 12 months of a subsidence location being identified if self-healing is not providing sufficient remediation" (Section MP-6.4, Addendum MP-6) is environmentally unacceptable for the southeastern highwall mining area because: 1) the stability and alignment of Goose Creek and Tongue River could be jeopardized should subsidence occur, and; 2) any groundwater quality impacts associated with underground coal fires developing in mine openings would have direct and essentially immediate access to Goose Creek and Tongue River via the shallow groundwater table.

The subsidence control plan presented in Addendum MP-6 is inadequate. It appears that no analytical work of any sort (sampling, material testing, etc.) has been performed in support of the highwall mining design presented in the mine plan. Additionally, it also appears that no geotechnical work of any sort has been performed. Addendum MP-6 discusses general assumptions for highwall mining penetration depths, entry widths, cutting heights and support pillars. This information is presented somewhat anecdotally and in the case of the support pillars, it states that "Support pillars will be designed to have a width equal to or exceeding the maximum extraction thickness anticipated in a highwall mining hole based on the mine's geologic model. This width-to-height ratio of at least 1:1 results in pillar stability factors that exceed recommended values suggested by National Institute for Occupational Safety and Health's (NIOSH) ARMPS-HWM stability program for the overburden thicknesses expected. Pillar dimension will also be in accordance with Brook Mine's Ground Control Plan approved by MSHA."

No material strength data (coal strength, overburden strength, interburden strength, etc.) is provided in the mine plan document. BHCC suspects that no material strength information has been gathered or determined. Can the NIOSH stability factors actually be achieved? This is unknown at this point as no definitive geotechnical and material strength data has been presented in the mine plan. The coals present in this area are of a younger age. Younger age coals have much weaker strengths than older age, deeper coals and it is quite possible that the safety and stability factors needed to safely and effectively execute the highwall mining approach presented in the mine plan cannot be achieved. BHCC insists that further analysis be performed to definitively prove that the web and barrier pillars dimensions are appropriate and that they will meet NIOSH's minimum stability factor of 1.3.

Very little highwall mining has been performed in Wyoming. Highwall mining has been performed relatively recently at the Bridger Mine, which is located in Southwest Wyoming.

While the exact details are unknown, BHCC is aware of at least one “cascading pillar failure” at that operation and fortunately, there were no injuries. It is suspected that this failure was caused by improper pillar layout and design. BHCC is concerned that the anecdotal mine design presented in this document is inadequate and must be performed with proper analytical data.

Objection No. 3 – Section MP.5.9; Section MP.6.2; Addendum MP-3; Section MP.8

The groundwater model of Addendum MP-3 was improperly constructed and executed because the model does not recognize the unique textural and hydraulic characteristics of saturated backfill in BHCC's Pits 1 and 2, but instead simulates the backfill in the same fashion as native overburden strata (see Section 4.0 of Addendum MP-3). Section 2.5.1 of Addendum MP-3 states “no site-specific hydraulic conductivity information is available for the over/interburden (model) layers”. In fact, hydraulic conductivity data are available for the backfill from former monitor wells in the Pit 1 and Pit 2 area and for the Plachek Pit backfill. That data are provided in the GRD referenced under Objection No. 1 above. Hydraulic conductivity values assigned to the spoils together with all other “overburden” strata in the model are very small (less than one tenth) relative to those shown for backfill in the GRD. The groundwater model ignores determination of the spatial extent of drawdown in the water table of Pit 1 and Pit 2 backfill that is connected to the water table in Tongue River and Goose Creek alluvium, which in turn is supplied by flows in both streams. The text of Section MP.6.2.3 states “Drawdowns of the overburden were not modeled and only isolated sands where encountered are expected to be affected”.

Section 4.9 and Figure 4.9-11 of Addendum MP-3 shows where the groundwater model was used to predict water table drawdown in Tongue River valley alluvium at “alluvial target” points distributed over nearly a six-mile reach of the valley floor. Section 4.9 states that “the maximum impact to the Tongue River alluvium is conservatively estimated to reach 2.5 feet of drawdown near the river”. Addendum MP-3 and Section MP.6.2 provide no description or drawing of the spatial distribution of drawdown during mining in BHCC's saturated backfill or in the alluvium of Tongue River and Goose Creek that is hydraulically connected to the backfill. Neither does the groundwater model explore potential permanent groundwater elevation changes associated with the highwall mining panels acting as drains to the backfill and alluvial water table via the highwall trench pits. Water table drawdown approaching 2.5 feet in the alluvium of Tongue River valley over a valley distance of nearly six miles would in fact represent a very large volume water loss that would likely cause stream flow losses.

The groundwater model of Addendum MP-3 fails to report groundwater inflow rates to any of the proposed mine excavations. Section MP.8 of the Mine Plan states “It is estimated that the total water use will be approximately 400 million gallons per year.” This is equivalent to an average daily use rate of 760 gallons per minute, about 3.36 acre-feet per day, or about 1,226 acre-feet per year. The Mine Plan does not identify the specific source(s) of the water beyond mentioning that “Industrial water will be obtained from groundwater wells or from water collected in sediment and flood control reservoirs”. The groundwater model of Addendum MP-3 does not include the effects of withdrawing any groundwater from wells for industrial or other uses, nor does it include the effects of dewatering wells mentioned in Section MP.5.9. In short, the Mine Plan is devoid of a hydrologic budget identifying specific groundwater sources, the quantity of industrial

water projected to be available from flood control reservoirs and sediment ponds, and the determination of what would remain of groundwater and surface water supplies while supplying the industrial water needs. BHCC is concerned that the value of its surface estate and future options for developing its surface estate could be marginalized by such a large water use demand, especially considering that water demands at Wyoming coal mines are primarily consumptive.

Objection No. 4 – Section MP.11; Addendum MP-5

The fire control plan referenced in Section MP.11 and presented in Addendum MP-5 describes measures to be taken to prevent and control fires in the mine pits, fires in the mine's processing and shop facilities, equipment fires and rangeland fires. BHCC objects, however to the Mine Plan and Addendum MP-5 not providing plans to control and extinguish new subsurface coal fires that may develop or existing subsurface coal fires that may become rekindled or enlarged as a result of the highwall mining panels that will be opened outboard of the highwall trench openings.

Attachment 1 provided with this Objection No. 4 is a drawing showing the approximate extent of underground coal mine fires in the area of proposed highwall mining in Sections 10 and 15, T57N, R84W, as reported by the U.S. Geological Survey in 1980. The fires in this particular area originated with mining of the Monarch coal. This and other nearby historic underground mines have long been known to exhibit numerous subsidence features and underground coal mine fires, and in the late 1980s BHCC received approval from the WDEQ/LQD to permanently place nearly 10 million bank cubic yards of overburden over the area shown on Attachment 1 in an attempt to reclaim the subsidence and control the fire. That unique reclamation feature is known as the Pit 3 Subsidence Dump in Big Horn Mine's reclamation history. The proposed highwall mining will develop mine openings in the Carney and Masters coal seams beneath the Monarch seam in areas that are known to still exhibit evidence of underground coal fires. Plumes of steam and smoke have been observed again over the general area of Sections 10 and 15 this winter of 2016-2017. These observations indicate that, in places, the perimeter of the historic subsurface coal seam fires has expanded notable distances from the referenced 1980 boundary delineation.

The subsidence control plan of Addendum MP-6 does little to guarantee the long-term protection of BHCC's surface estate especially where highwall mining panels will be driven beneath underground coal mine fires having a long history of activity. Section MP-6.2 of Addendum MP-6 provides numerical calculations for subsidence chimney heights, but there is no investigation of the potential that the historic mine fires may have compromised the structural integrity of strata underlying the fires and overlying the coals targeted for highwall panel mining (the interburden), leaving the interburden more prone to subside than normal. BHCC is particularly concerned and objects to highwall mining beneath or adjacent to pre-existing underground mine fires because of the potential for oxygen and water to be transmitted from the highwall mining openings to "hotspots" in the seams already burning via highwall trenches or via fractured or subsided interburden above the panel openings. BHCC strongly disagrees with the legitimacy of the plan stated in Section MP-6.4 of Addendum MP-6 which states "Backfilling will also be performed if it is determined that the introduction of water and oxygen could contribute to spontaneous ignition of the remaining coal not extracted from the highwall mining operations". BHCC

contends it to be common knowledge in the mining industry that oxygen and water are key catalysts in causing spontaneous combustion in coal, whether the coal be in mine openings or in stockpiles. BHCC also believes that the introduction of additional water and air to a coal seam already on fire is especially problematic.

Section MP-6.3 of Addendum MP-6 commits to maintaining highwall mining mapping and subsidence documentation in a subsidence report that will be available for inspection. BHCC objects to the Mine Plan not committing to freely submitting the highwall mining mapping and subsidence documentation report to all owners of surface estate within the Brook Mine permit area. BHCC also objects to the fact that the Subsidence Monitoring and Assessment reporting of Section MP-6.3 does not include mapping, photographing and describing all evidence of surface or underground coal fires occurring within the Brook Mine permit area whenever such evidence becomes available throughout the life of the mining and post-mining periods.

Objection No. 5 – Section MP.1.3; Exhibit MP.1-1

The mine plan on Page MP-5, identifies the “disturbance boundary includes all lands that will be physically and directly disturbed during mining.” Exhibit MP.1-1 shows the disturbance boundary as a dashed orange symbol that outlines an entire pink hatched polygon, identified as “DISTURBANCE FOR YEAR 2016,” located in Sections 15, 21, 22 and 27 of Township 57 North, Range 84 West.

Within the pink hatched polygon, there are existing assets to Big Horn Coal Company. These assets include a rail spur, water tank, pump house, access roads, fences and land owned by BHCC. Also within the pink hatch polygon is the mainline of the Burlington Northern Railroad and associated lands owned by Burlington Northern.

Based on the definition of Disturbance Boundary as indicated on page MP-5, does Brook Mine indeed have the rights to physically and directly disturb these lands within the pink hatched polygon? From the public record, BHCC has not been able to determine whether Brook Mine has secured surface owner consent from all surface owners, including the railroad, for these activities

Objection No. 6 – Section MP.1.5

The mine plan states on Pages MP-5 and continue onto page MP-6 that “Coal will either be temporarily stored in the pit or directly hauled off site.”

There is no mention in the permit as to where the coal will be hauled off site. Additionally there is no known agreement with the County of Sheridan, indicating approval to haul mineral across county roads.

Objection No. 7 – Section MP.1.9

The mine plan states on Pages MP-7 that “The Brook Mine will operate in conjunction with Taylor Quarry (Permit No. SP-757)... The Mine will work with Taylor Quarry to minimize impacts on Taylor Quarry's operation.”

The following paragraph states "The Brook Mine will not obstruct Big Horn Coal's (Permit 231-T8) Shop, Bridge, and Rail Road Siding as they exist in Big Horn Coal's 2015 Annual Report. An access road equivalent to the existing improved road will be provided if proposed stockpiles or pits should restrict the existing access as shown on Exhibit MP.1-1.

To remain consistent with the statements made in regards to the Taylor Quarry, Big Horn Coal requests that the paragraph referencing Big Horn to be replaced and restated as follows:

"The Brook Mine will operate in conjunction with the Big Horn Mine and that the Brook Mine will work with Big Horn Coal to minimize impacts to Big Horn Coal operations. Specifically, Brook Mine will not obstruct Big Horn Coal's (Permit 213-T8) Shop, Bridge, and Rail Road Siding as they exist in Big Horn Coal's 2015 Annual Report. An access road equivalent to the existing improved road will be provided if proposed stockpiles or pits should restrict the existing access as shown on Exhibit MP.1-1."

Big Horn Coal requests that the text be updated in the previous paragraph to reference the correct permit number for Big Horn Coal Company as (Permit 213-T8).

Objection No. 8 – Section MP.3.1, Section MP.3.1.3 – Roads; Exhibit MP.3-1

As stated in the mine plan on Page MP-11, "Primary roads are any road used for transporting mineral or spoil, or frequently used for access or other purposes for a period in excess of six months, or roads to be retained for postmining use."

WDQ/LQD Rules and Regulations (R&R) Chapter 4, Section 2(j)(vii):

Primary roads.

(A) Certification. The construction or reconstruction of primary roads shall be certified in a report to the Administrator by a registered professional engineer. The report shall indicate that the primary road has been constructed or reconstructed as designed and in accordance with the approved plan. The report shall be available for review at the mine site within 30 days following the completion of construction of each primary road.

Mine plan Exhibit MP.3-1, titled Transportation Network identifies proposed primary haulroads as a solid black line, for the use of transporting mineral or spoil. Yet, there are no haulroads identified in the SE quarter of Section 15, Sections 21, 22 or 27. If the Brook Mine plans to haul mineral or spoil materials from the proposed Trench Cut (TR-1), there should be indication of a primary haul road leaving TR-1, accompanied by a certification of the road design. Unless there are no plans of transporting mineral or spoil from the TR-1 area.

Objection No. 9 – Section MP.4.2.3 – Stockpiles; Exhibit MP.4-3

The mine plan states on Page MP-16, "Stockpiles will not be constructed on unsuitable backfill."

Mine plan Exhibit MP.4-3, Stockpile Locations identifies Topsoil Stockpile TS-1B proposed location within an area known as the Placheck Pit. This area was mined by Big Horn Coal from 1956 through 1963. It is Big Horn Coal's understanding that the proposed area beneath TS-1B is indeed unsuitable material and that topsoil should not be placed in the area as proposed on Exhibit MP.4-3. Additionally, Big Horn Coal is not aware of a surface owner consent document between Brook Mining Company and the Burlington Northern Railroad that would allow the crossing of the mainline with loaded haul trucks.

Objection No. 10 – Section MP.6.1; Exhibit MP.7-1

Exhibit MP.7-1 represents the operational Surface Water and Groundwater Monitoring Program. There are only two downstream surface water monitoring sites, identified as Big Horn No. 2 Reservoir and Big Horn No. 14 Reservoir. The text on page MP-41 of the Mine Plan states "However, the Big Horn No. 2 Reservoir and Big Horn No. 14 Reservoir will be disturbed by facilities disturbance."

Big Horn Coal believes there is inadequate downstream monitoring in the proposed plan. Upon disturbing of Big Horn No. 2 Reservoir and Big Horn No. 14 Reservoir, there will be no sites downstream of the Brook Mine to collect adequate surface and groundwater data to prove that there are no off site environmental impacts from the proposed operation.

Objection No. 11 - Addendum MP-2, Exhibit MP-2

The proposed Sediment Pond SP-8 is located within the current postmine approved Reservoir 14 constructed by BHCC. The bottom elevation of Reservoir 14 is currently at 3575 with a peak elevation at 3589. Sediment Pond SP-8 bottom elevation is proposed at 3585 with a high water elevation proposed at 3590. It is noted below the area capacity table on Exhibit 13, "1. Pond is entirely incised. No Spillway hydraulics are provided."

These elevations lead BHCC to believe the plan for construction of SP-8 will require Reservoir 14 to be completely backfilled prior to construction of SP-8. BHCC requests that the reconstruction and the water quality within Reservoir 14 be restored to pre-mining conditions before final bond release is allowed.

Objection No. 12 – Exhibit MP.4-1; Exhibit MP.4-2; Exhibit MP.4-5; Exhibit RP.5-1

The proposed mine plan indicates that topsoil and overburden removal will occur upon the BHCC Property and within the TR-1 area in years 1 and 2 of operation. Exhibit MP.4-1 shows coal removal to occur over the same first two years of operation. Exhibit MP.4-5 shows the overburden backfill sequence within TR-1 will occur in year 2. Exhibit RP.5-1 shows the topsoil replacement sequence within the BHCC Property occurring in years 12-16.

BHCC objects to this timeline of topsoil replacement upon its property. The BHCC property is the first to be disturbed and the last to be reclaimed. BHCC asks the question as to why every other proposed disturbance area is backfilled and topsoiled within a 2 to 3 year time frame except around the BHCC facilities area. The topsoil replacement timeframe is unacceptable and not contemporaneous in accordance with the Surface Mining Control and Reclamation Act, (SMCRA) and it is requested that the final

reclamation around the BHCC Property be within the 2 to 3 year time frame, similar to all other areas around the mine.

Objection No. 13 – Section MP.1.2.1; Figure MP.1-2.

Section MP.1.2.1 discusses the work that will be done to “prepare for highwall mining” and describes how the “trenches” will be constructed to “create working areas for highwall mining equipment”. This section of the mine plan states that “The highwalls will have a 65-degree bench slope to provide a stable trench environment. Where the trench intersects the burnt Monarch coal seam, a 35-foot wide safety bench will be added. Where the Carney and Masters coal seams come close to convergence, a vertical wall will be used to maintain the desired pit width.” Earlier, under Objection No. 2, BHCC discussed the presence of saturated backfill where trench TR-1 is planned to be excavated. Section MP.1.2.1 does not address in any fashion the fact that trench TR-1 will be constructed in an area containing a significant amount of saturated backfill material. In our opinion, utilizing a 65-degree bench slope in this material will be impossible as the saturated backfill will not safely stand at this angle. Furthermore, no geotechnical information (sampling, testing or analysis) supporting slope stability assumptions for the surface mining or highwall mining operations have been provided in the mine plan. BHCC finds the information regarding highwall bench slope angles presented in MP.1.2.1 to be inadequate given the variability of non-coal material that will be encountered during excavation of trenches in support of the highwall mining operation.

Objection No. 13 – Section MP.1.2.1; Figure MP.1-2.

Section MP.1.2.1 discusses the work that will be done to “prepare for highwall mining” and describes how the “trenches” will be constructed to “create working areas for highwall mining equipment”. This section of the mine plan states that “The highwalls will have a 65-degree bench slope to provide a stable trench environment. Where the trench intersects the burnt Monarch coal seam, a 35-foot wide safety bench will be added. Where the Carney and Masters coal seams come close to convergence, a vertical wall will be used to maintain the desired pit width.” Earlier, under Objection No. 2, BHCC discussed the presence of saturated backfill where trench TR-1 is planned to be excavated. Section MP.1.2.1 does not address in any fashion the fact that trench TR-1 will be constructed in an area containing a significant amount of saturated backfill material. In our opinion, utilizing a 65-degree bench slope in this material will be impossible as the saturated backfill will not safely stand at this angle. Furthermore, no geotechnical information (sampling, testing or analysis) supporting slope stability assumptions for the surface mining or highwall mining operations have been provided in the mine plan. BHCC finds the information regarding highwall bench slope angles presented in MP.1.2.1 to be inadequate given the variability of non-coal material that will be encountered during excavation of trenches in support of the highwall mining operation.

Objection No. 14 – Section MP.4.4.1

It is a well-known fact within the mining industry that the term “Reserves” connotes that the mineral being extracted can be done so economically. BHCC opines that the mining approach presented in the mine plan cannot be done economically. Based on our internal

knowledge; the operating cost for a contractor to perform highwall mining is in the \$8/Ton to \$12/Ton range, which is very close to the domestic spot price for this type of coal. By the time the other costs for the surface mining to develop the highwall mining, transportation, G&A, etc. are taken into consideration, this operation appears to be completely uneconomical.

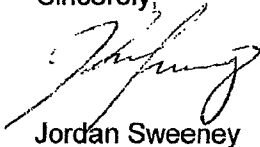
The market for this coal is unclear. The two closest coal mines, Decker and Spring Creek, serve the domestic and international market. Port capacity to the international market is constrained and it is unlikely that Brook Mine will secure access. Domestic demand has been in decline and is significantly oversupplied. Without a definitive market, the Brook Mine is at risk of commencing operations, producing product it cannot sell economically, and reclamation obligations that it cannot fund.

Objection No. 15 – Section MP.15

Objection No. 4 above introduces the fact that the underground mine fires in this area are still burning and have expanded. Section MP.15 does not, in any way, address that the burned areas have expanded. A surface mine excavation that comes in contact with a historic mine fire could be catastrophic in many ways, including: impacting the safety of mine workers, damage to equipment, wildfire initiation, etc. BHCC believes this mine plan has not adequately addressed surface mining activities that will occur near underground mines and insists that the Brook Mine operators must perform the necessary testing and analysis to prove that the proposed mine plan will not be impacted by historic mine fires. Specifically, attachment 1 provided with Objection No. 3 above shows that trench TR-2 is planned very near an area that was burning and is likely still burning. Given that the burned area has likely expanded, this area should not be disturbed at all.

In conclusion, Big Horn Coal Company feels strongly that the Brook Mine permit application should not be approved or deemed technically complete. The mine and reclamation plan lack a significant amount of detail that is required for a technical completeness determination, as stated in the above mentioned objections.

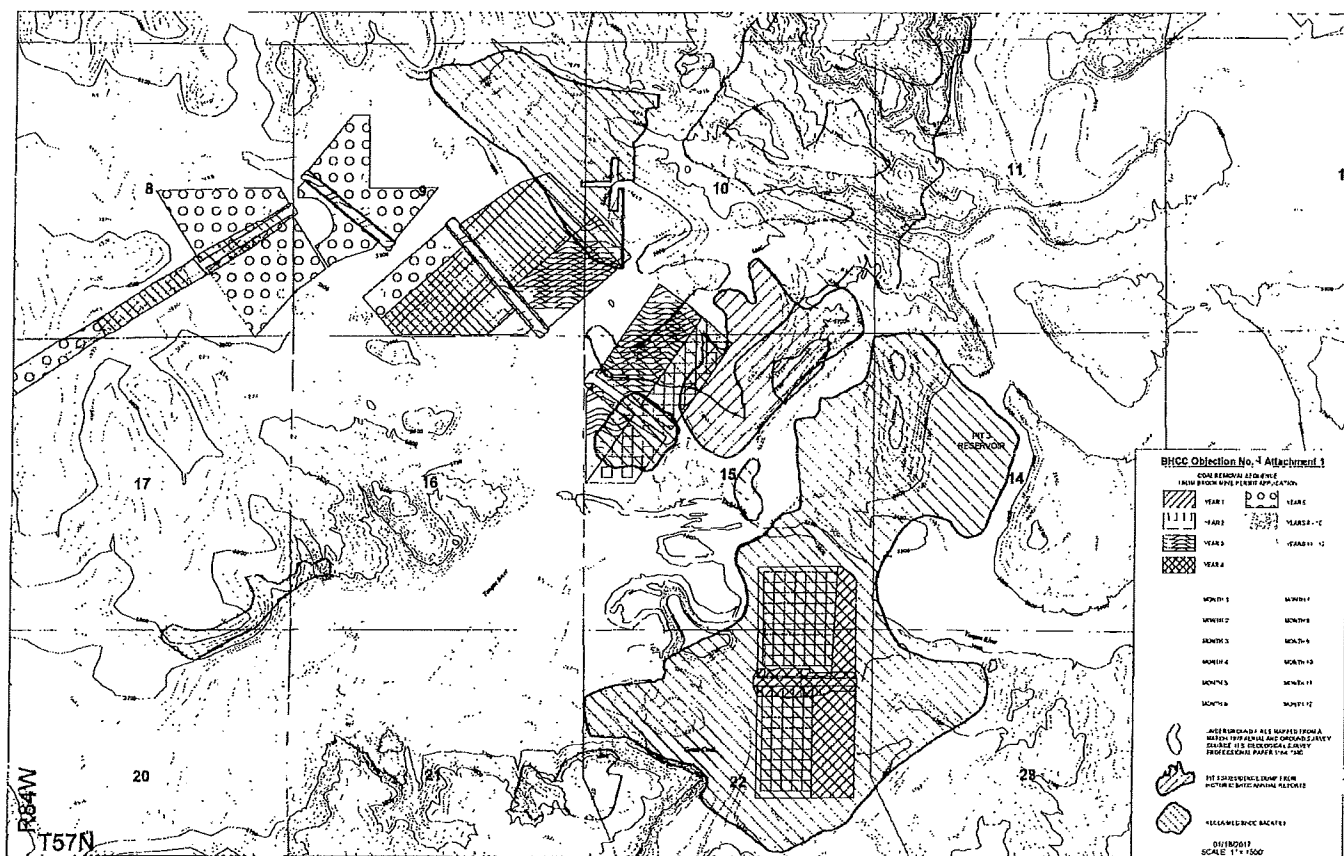
Sincerely,



Jordan Sweeney

General Manager
Big Horn Coal Company

Attachment: BHCC Objection No.4 Attachment 1



From: Jenny Wacker
To: Andrew.kuhlmann@wyo.gov; james.larock@wyo.gov; alan.edwards@wyo.gov; insutphin@hollandhart.com; jspope@hollandhart.com; bpcharlie@wbaccess.net; todd.parfitt@wyo.gov; sanderson@powderriverbasin.org; mayor@ranchesterwyoming.com; jgilbertz@yonkeetoner.com; jim.ruby@wyo.gov
Cc: [Lynne Boomgaarden](#); [Clayton Gregersen](#); [Jenny Wacker](#); [Wendy Drake](#)
Subject: BHCC - Brief and Exhibits
Date: Wednesday, February 15, 2017 4:35:17 PM
Attachments: [Objector Big Horn Coal Company's Brief Addressing Whether the Environmental Quality Council Presently Has Jurisdiction Over This Matter.pdf](#)
[Exhibits to Brief - BHCC .pdf](#)

Attached please find *Objector Big Horn Coal Company's Brief Addressing Whether the Environmental Quality Council Presently Has Jurisdiction Over This Matter* and *Exhibits to Brief* filed with the EQC today.

Thank you,

Jenny Wacker



Jenny Wacker

Administrative Assistant to Lynne Boomgaarden and Keith Burron

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ATTORNEY FOR OBJECTORS
BIG HORN COAL COMPANY

**BEFORE THE ENVIRONMENTAL QUALITY COUNCIL
STATE OF WYOMING**

IN RE BROOK MINE APPLICATION)	
	)	Docket No. 17-4801
)	
TFN 6 2-025)	

**OBJECTOR BIG HORN COAL COMPANY'S BRIEF ADDRESSING WHETHER
THE ENVIRONMENTAL QUALITY COUNCIL PRESENTLY HAS
JURISDICTION OVER THIS MATTER**

Big Horn Coal Company ("Big Horn"), by and through its undersigned counsel, timely submits this brief pursuant to the Environmental Quality Council's (the "Council") February 7, 2017 Order Vacating Contested Case Hearing and Setting Oral Argument (the "Order").

INTRODUCTION

This matter involves the current, unique procedural posture of Big Horn's and other interested parties' objections to Brook Mining Company, LLC's ("Brook Mine") surface coal mining permit application under the Wyoming Environmental Quality Act (the "Act") and the Department of Environmental Quality's ("DEQ") Rules of Practice and Procedure

(the “Rules”). The Order specifically requested that the parties brief the following issue: “whether there is a proper appeal before the Council at this time that necessitates a contested case.”¹ Wyo. Stat. Ann. § 35-11-406, read as a whole, answers the question posed: Absent a request for hearing from an interested person, the Council has no jurisdiction over this matter. Accordingly, there is no proper appeal before the Council at this time that necessitates a contested case.

PROCEDURAL BACKGROUND

Pursuant to Wyo. Stat. Ann. § 35-11-406(j) and (k), notice of Brook Mine’s permit application was published and interested persons were afforded the right to file written objections to the application with the Administrator through January 27, 2017. *See Exhibit A, Public Notice of Brook Mining Co., LLC Permit Application.*

Numerous parties, including Big Horn, filed written objections to the application and specifically requested an informal conference as provided by the Rules and Wyo. Stat. Ann. § 35-11-406(k). *See* EQC Dkt. No. 17-4801. No party requested a contested case hearing before the Council. *Id.* On January 30, 2017, DEQ Director Todd Parfitt informed Big Horn and the other objectors that he had determined an informal conference was unlikely to be successful in resolving the disputes and that he was “referring this permit application to the [Council] for their review and determination at a contested case hearing.” *See e.g. Exhibit B, DEQ Letter to Big Horn.* On that same date, following numerous informal email communications from Council staff concerning the immediate scheduling

¹ Because no decision has been made regarding Brook Mine’s permit application, any contested case at this stage would need to flow from a request for a hearing/protest to a permit, not an appeal. *See* Wyo. Admin. Code ENV PP Ch. 1 § 3.

of a pre-hearing conference, and prior to Big Horn's receipt of Director Parfitt's decision regarding its request for an informal conference, the Council ordered the parties to appear for a pre-hearing conference in the docketed contested case, on February 2, 2017. **Exhibit C, Pre-hearing Conference Order.** The parties were informed that "[f]ailure to appear at the pre-hearing conference may result in dismissal from this case." *Id.* Following the pre-hearing conference, the Council issued a Scheduling Order setting a contested case hearing for February 13 and 14, 2017, with all motions, responses, discovery and disclosures to occur in the week leading up to the hearing. **Exhibit D, Amended Order for Contested Case Hearing.** Big Horn and other objectors responded to the Scheduling Order by raising due process concerns. *See* EQC Dkt. No. 17-4801. Objector Powder River Basin Resource Council further specifically challenged the Council's jurisdiction to hold a contested case hearing at this time and requested a remand of the proceedings back to the Director, with instructions to conduct an informal conference, as requested. *Id.*

The Council then issued the Order vacating the contested case hearing, requesting briefs on the jurisdictional issue, and setting oral argument for February 21, 2017. **Exhibit E, Order Vacating Contested Case Hearing and Setting Oral Argument.**

ARGUMENT

I. Absent a Request by an Interested Person, the Council has No Jurisdiction over this Matter.

For surface coal mining operations, the Act provides interested persons the right to file written objections to a permit application with the Land Quality Division Administrator for a period of thirty (30) days, and if requested, the Director may hold an informal

conference to take action on the permit application in accordance with DEQ's rules of practice and procedure. Wyo. Stat. Ann. § 35-11-406(k). The statute further provides that "[a]n informal conference or a public hearing shall be held within twenty (20) days after the final date for filing objections unless a different period is stipulated to by the parties," and that a hearing shall be conducted as a contested case hearing. *Id.* Subsection (k), read alone, suggests that after the time for filing objections has expired either an informal conference or a contested case hearing must be held. Subsection (k) does not address the possibility that a request for an informal conference might be denied, the timing or communication of such decision to the requesting party within the 20-day window, or otherwise set forth what would necessarily trigger a hearing under those circumstances and when. Wyo. Stat. Ann. § 35-11-406(p) sheds important additional light on this issue by stating that "if no informal conference or hearing *is requested*" the Director must render a decision on the application within thirty (30) days of the notice period. *Id.* (emphasis added). Read as a whole, then, the statutory language makes clear that both an informal conference and a hearing before the Council must be initiated on the request of an interested person. *See id.*

The Council is a creature of statute and may only exercise those powers given to it by the legislature. In other words, the Council "must find within the statute warrant for the exercise of any authority which it claim[s]." *Exxon Mobil Corp. v. Wyoming Dept. of Revenue*, 266 P.3d 944, 951 (Wyo. 2011) (citing *Amoco Prod. Co. v. Wyo. State Bd. of Equalization*, 12 P.3d 668, 673 (Wyo.2000)). Here, nothing within the statute warrants a conclusion that the Council may exercise any authority over the Brook Mine permit

application simply on a referral from the Director following his denial of the objectors' requests for an informal conference. To the contrary, as illustrated above, the legislature understandably gave the objectors the right to request (or decline to request) a hearing before the Council. As of the date of the Order, no such request had been made and the Council presently has no jurisdiction over this matter.

II. Given the Unique Course of Events in this Matter, Big Horn Coal Respectfully Renews its Request for an Informal Conference, or in the Alternative Requests a Contested Case Hearing before the Council, in Order to Preserve All Its Rights as an Interested Person.

Beyond the jurisdictional issue addressed above, the statutes and Rules do not set forth a clear procedural path or timeline in the event DEQ denies a request(s) for an informal conference. For example, Wyo. Stat. Ann. § 35-11-406(k) indicates the Director has sole discretion whether to hold an informal conference and that the Director would conduct the informal conference. Chapter 6, §1 of the Rules speaks to the Director's authority to *review* by informal conference any decision, order or notice by the Administrator, but does not provide that the Director may conduct an informal review in the first instance. Moreover, section 5 of this same chapter expressly prohibits the Director from reviewing "any informal conference proceeding requested and held pursuant to [Wyo. Stat. Ann.] § 35-11-406(k)."

The Rules imply that the authority to conduct an informal conference requested pursuant to Wyo. Stat. Ann. § 35-11-406(k) has been delegated to the Administrator with a direct appeal of any action following the informal conference to the Council. See Wyo.

Admin. Code ENV PP Ch. 1 §17(b) (an interested person may appeal any administrative decision *following* an informal conference related to a surface coal mining operation to the Council within 30 days of notice of the decision). Consistent with the timeline set forth in Wyo. Stat. Ann. § 35-11-406(k), Chapter 3, § 3 of the Rules further provides that any informal conference requested of *the Administrator* on a surface coal mining permit be held “within 20 days after the final date for filing objections unless a different period is stipulated to by the parties.” The Rules simply fail, however, to address what occurs following the Director’s or Administrator’s denial of a request for an informal conference, and when. No amount of briefing can fill these gaps or rectify these uncertainties.

Big Horn staunchly believes that its objections to Brook Mine’s permit application - critical, technical issues primarily related to hydrologic data and impacts, material testing and data, sloughing, existing subsurface fire activity and related controls, and subsidence - would be most efficiently and effectively addressed in the context of an open, candid, informal conference with Big Horn Coal representatives, Brook Mine and its consultants, and the DEQ technicians who reviewed Brook Mine’s mine and reclamation plans and any accompanying data; not in the context of a hotly contested, “battle of the experts” presentation to the Council. If DEQ is willing to revisit this issue, Big Horn will defer to the DEQ whether any informal conference on the Brook Mine permit application would be conducted by the Administrator or the Director.

For these reasons, contemporaneous with filing this brief, Big Horn has submitted to the Administrator a renewed request for an informal conference pursuant to Wyo. Stat. Ann. § 35-11-406(k) and the Rules, Chapter 3, § 3. *See Exhibit F*. Given the referenced

uncertainties and the possibility no informal conference will be held, contemporaneous with filing this brief and within 20 days after the final date for filing objections, Big Horn also has filed with the Council and served upon the Director and the parties, a petition for hearing in accordance with the Rules, Chapter 1, § 3. *See Exhibit G.* Big Horn further asserts that because no party timely objected to the Council's briefing and oral argument schedule, and because the statute allows the parties to stipulate to a different period, any claim asserting a failure to comply with the 20-day hearing/conference requirement under Wyo. Stat. Ann. § 35-11-406(k) or any prejudice arising therefrom has been waived. *See Amoco Production Co.*, 7 P.3d at 906 (Wyo. 2000) (holding that "[i]f a party has an opportunity to object to the administrative tribunal's procedural rulings and fails to do so, it waives its right to challenge the administrative tribunal's procedure on appeal").

CONCLUSION

For the reasons set forth above, an informal conference before the Director or Administrator is the best context for discussion and possible resolution of all or at least some of Big Horn's and other objectors' concerns with Brook Mine's mine permit application. The Council may exercise jurisdiction over this matter only: (1) if an appeal is filed following an informal conference, or (2) no informal conference is held and pursuant to Big Horn's or any other party's request for a contested case hearing.

[Signature page to follow.]

DATED: February 15, 2017.

By 

Lynnette Boomgaarden (WSB # 5-2837)

Clayton H. Gregersen (WSB # 7-5677)

Crowley Fleck PLLP

237 Storey Boulevard, Suite 110

Cheyenne, WY 82009

(307) 426-4100

Attorney for Objectors

Big Horn Coal Company

CERTIFICATE OF SERVICE

I hereby certify that on February 15, 2017, a true and correct copy of the foregoing was served by email to the following:

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*Attorney for Mary Brezik-Fisher and
David Fisher*

Jim Ruby
Environmental Quality Council
Jim.ruby@wyo.gov


A handwritten signature in blue ink, reading "Lynette Boonsgaarden". The signature is written in a cursive style and is positioned above a horizontal line.

EXHIBIT A

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 Wyoming Department of Environmental Quality

Brook Mining Co., LLC - Coal Mining Permit Application 2nd Notice

Wyoming Department of Environmental Quality sent this bulletin at 01/11/2017 03:59 PM MST

Wyoming Department of Environmental Quality | [view as a webpage](#)

 Wyoming Department of Environmental Quality

Public Notice of Brook Mining Co., LLC Permit Application

The Brook Mining Co., LLC of 1101 Sugarview Drive, Suite 201, Sheridan, WY 82801 has applied for a coal mining permit from the Land Quality Division of the Department of Environmental Quality for the State of Wyoming. The coal mining permit area will be located in: Sections 10, 11, 12, 13, 14 and 15 Township 57N, Range 85W, and Sections 7, 8, 9, 10, 15, 17, 18, 20, 21, 22 and 27 Township 57N, Range 84W Sheridan County, Wyoming. The Brook Mine is located approximately 6 miles Northwest of Sheridan, Wyoming. This area can be found on the Acme and Monarch USGS quadrangle maps.

The proposed operation is scheduled to begin July 2017 and is estimated to continue until 2032. The land, after mining, will be returned to a grazing land use. Information regarding the proposed mining operation and reclamation procedures may be reviewed in the Office of the Land Quality Division of the Department of Environmental Quality in Cheyenne and Sheridan, Wyoming, the office of RAMACO in Sheridan, WY, or the Sheridan County Clerk's Office Sheridan, Wyoming. Written objections to the proposed mining operation must be received by the Administrator of the Land Quality Division, Department of Environmental Quality, 200 W. 17th Street, Cheyenne, WY 82002, before the close of business January 27, 2017. The Director may hold an informal conference if requested, hear the complaint and take action on the application in accordance with the Department's Rules of Practice and Procedure. The complainants shall have a right of appeal to the Environmental Quality Council where the complaint will be heard a second time. A conference shall be held if the Director determines that the nature of the complaint or the position of the complainants indicates that an attempt to informally resolve the disputes is preferable to a contested case proceeding. An informal conference or a public hearing shall be held within twenty (20) days after the final date for filing objections unless a different period is stipulated to by the parties. The Council or Director shall publish notice of the time, date and location of the hearing or conference in a newspaper of general circulation in the locality of the proposed

operation once a week for two (2) consecutive weeks immediately prior to the hearing or conference. The hearing would be conducted as a contested case in accordance with the Wyoming Administrative Procedure Act (W.S. §16-3-101 through §16-3-115), and the right of judicial review would be afforded as provided in that act. All parties as given in W.S. §35-11-406(j) will be mailed a copy of this notice. The Wyoming Oil and Gas Commission will be mailed a copy of the application mine plan map as required by W.S. §35-11-406(j).

Please note that the Wyoming Department of Environmental Quality Cheyenne Office has moved.
The new address is:

200 West 17th Street
Cheyenne, WY 82002

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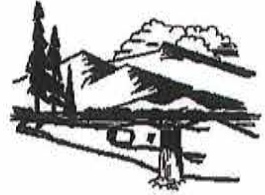
EXHIBIT B



Matthew H. Mead, Governor

Filed: 1/30/2017 4:31:23 PM WEOC
Department of Environmental Quality

*To protect, conserve and enhance the quality of Wyoming's
 environment for the benefit of current and future generations.*



Todd Parfitt, Director

Mr. Jordan Sweeney
 Big Horn Coal Co.
 10980 S. Jordan Gateway
 South Jordan, UT 84095

**RE: Proposed Brook Mine Permit Application, Sheridan County – TFN 6 2/025
 Public Comment Period**

Dear Mr. Sweeney:

Your letter regarding the proposed Brook Mine permit application has been received by the Department of Environmental Quality (DEQ). The public notice and approval process for such surface coal mine permit applications is addressed in Wyoming Statute § 35-11-406. Several of the comment letters received by the DEQ requested an informal conference be conducted on the permit application and on specific objections to the application.

I have carefully considered the objections received and determined that an attempt to informally resolve the disputes is unlikely to be successful through the informal conference process. Therefore, I am referring this permit application to the Environmental Quality Council (EQC) for their review and determination at a contested case hearing. Your comment letter, and all others received by the Department are being forwarded to the EQC. The EQC will be in contact with you regarding arrangements for a hearing before them. If you would like to contact the EQC directly for more details regarding their process, they can be reached at:

Wyoming Environmental Quality Council
 122 W. 25th
 Herschler Bldg. 1W, Room 1714
 Cheyenne, WY 82002
 Phone: (307) 777-7170
 Email: eqc-all@wyo.gov

Thank you for sharing your comments with the Department regarding this proposed new mine permit application. Your participation in the public review process is important and very helpful to the Department and the State.

Sincerely,

Todd Parfitt
 Director

Date: Jan. 30, 2017

cc: Alan Edwards, Deputy Director DEQ
 Jim Ruby, Executive Secretary, Wyoming Department of Environmental Quality

200 West 17th Street • Cheyenne, WY 82002 • <http://deq.wyoming.gov> • Fax (307) 635-1784

ADMIN/OUTREACH (307) 777-7937	ABANDONED MINES (307) 777-6145	AIR QUALITY (307) 777-7391	INDUSTRIAL SITING (307) 777-7369	LAND QUALITY (307) 777-7756	SOLID & HAZ. WASTE (307) 777-7752	WATER QUALITY (307) 777-7781
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EXHIBIT C

**BEFORE THE ENVIRONMENTAL QUALITY COUNCIL
STATE OF WYOMING**

IN RE BROOK MINE APPLICATION

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DOCKET 17-4801

TFN 6 2-025

ORDER

The Parties shall appear for a short pre-hearing conference in this matter that will be conducted on Thursday, February 2, 2017 at 10:30 a.m. via telephone conference call and in the Board of Equalization Board Room, 1st Floor West of the Herschler Building, Cheyenne, Wyoming. The Parties shall provide the EQC office with a direct telephone number and an email address where they can be reached for the pre-hearing on or before noon on February 1, 2017. Failure to appear at the pre-hearing conference may result in dismissal from this case.

DATED this 30th day of January, 2017.


Nick Agopian, Hearing Officer
Environmental Quality Council

CERTIFICATE OF SERVICE

I, James Ruby, certify that at Cheyenne, Wyoming, on the 31th day of January, 2017, I served a copy of the foregoing Scheduling Conference Order by electronic mail or by depositing copies of the same in the United States mail, postage prepaid, and addressed to the following:

John Barbula
124 Kleenburn Rd.
Ranchester WY 82839

Anton Bocek
11 Slater Creek Lane
Ranchester WY 82839

Brook Collins
38 Monarch Rd
Ranchester WY 82839

and by electronic mail to the following:

Andrew Kuhlmann
Asst. Attorney General
andrew.kuhlmann@wyo.gov

Todd Parfitt
Director, DEQ
Todd.Parfitt@wyo.gov


Alan Edwards
Deputy Director, DEQ
Alan.edwards@wyo.gov

Shannon Anderson
Powder River Basin Resource Council
sanderson@powderriverbasin.org

Isaac Sutphin
Attorney for Brook Mine
INSutphin@hollandhart.com

Mayor Peter Clark
Town of Ranchester
mayor@ranchesterwy.com

Lynn Boomgaarden
Attorney for Big Horn Coal
lboomgaarden@crowleyfleck.com
jwacker@crowleyfleck.com
wdrake@crowleyfleck.com



Jim Ruby, Executive Officer
Environmental Quality Council
122 W. 25th Street
Herschler Bldg., Rm. 1714
Cheyenne, WY 82002
Phone: 307-777-7170

EXHIBIT D

BEFORE THE ENVIRONMENTAL QUALITY COUNCIL
STATE OF WYOMING

FILED

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IN RE BROOK MINE APPLICATION

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DOCKET 17-4801

Jim Ruby, Executive Secretary
Environmental Quality Council

TFN 6 2-025

AMENDED ORDER

The Parties appeared for a pre-hearing conference in this matter on Thursday, February 2, 2017 at 10:30 a.m. via telephone conference call and in the Board of Equalization Board Room, 1st Floor West of the Herschler Building, Cheyenne, Wyoming. Present were Isaac Sutphin and Jeff Pope on behalf of Brook Mine LLC., Andrew Kuhlman and James LaRock on behalf of DEQ, Shannon Anderson and Jill Morrison on behalf of the Powder River Basin Resource Council, Lynn Boomgaarden on behalf of Big Horn Coal, Jay Gilbertz on behalf of Mary Brezik- Fisher, and Brook Collins. Also present for the Council are Jim Ruby, Executive Officer and Joe Girardin, council business coordinator and Ryan Schelhaus from the Attorney General office.

The final hearing in this matter will begin on the 13th of February 2017 at 9:00 a.m. and will continue on the 14th of February. In the event the hearing cannot be completed by the end of the 14th the Council will schedule the conclusion for a later day.

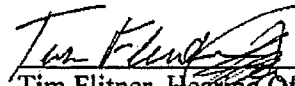
The following schedule is set for this hearing. Any preliminary motions shall be filed no later than February 6, 2017. Responses to the motions shall be filed by February 9th 2017. The hearing on any motions will be heard by the Council on February 13th prior to the final hearing.

The deadline for naming of expert witnesses, sending of any written interrogatories and requests for production is February 6, 2017. Responses to Interrogatories and Requests for Production will be February 10, 2017. The deadline for identification of all exhibits and witnesses to be used or called at the time of trial along with expert disclosures is February 10, 2017. The

deadline for filing any motions to strike, motions in limine etc. is February 10, 2017 and responses shall be filed no later than February 13, 2017 at 8:30 a.m.

The parties may file prehearing memorandum no later than February 10, 2017.

DATED this 2nd day of February, 2017.



Tim Flitner, Hearing Officer
Environmental Quality Council

CERTIFICATE OF SERVICE

I, Joe Girardin, certify that at Cheyenne, Wyoming, on the 2nd day of February, 2017, I served a copy of the foregoing Amended Order by electronic mail addressed to the following:

Andrew Kuhlmann
Asst. Attorney General
andrew.kuhlmann@wyo.gov

Todd Parfitt
Director, DEQ
Todd.Parfitt@wyo.gov

Alan Edwards
Deputy Director, DEQ
Alan.edwards@wyo.gov

Shannon Anderson
Powder River Basin Resource Council
sanderson@powderriverbasin.org

Isaac Sutphin
Attorney for Brook Mine
INSutphin@hollandhart.com

Mayor Peter Clark
Town of Ranchester
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Lynn Boomgaarden
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lboomgaarden@crowleyfleck.com
jwacker@crowleyfleck.com
wdrake@crowleyfleck.com

Jay Gilbertz
Attorney for Mary and David Brezik-Fisher
jgilbertz@yonkeetoner.com

Brook Collins
38 Monarch Rd
Ranchester WY 82839
bpcharlie@wbaccess.net



Joe Girardin, Council Business Coordinator
Environmental Quality Council
122 W. 25th Street
Herschler Bldg., Rm. 1714
Cheyenne, WY 82002
Phone: 307-777-7170

EXHIBIT E

BEFORE THE ENVIRONMENTAL QUALITY COUNCIL
STATE OF WYOMING

FILED

FEB 07 2016

IN RE BROOK MINE APPLICATION)

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DOCKET 17-0004

Jim Ruby, Executive Secretary
Environmental Quality Council

TFN 6 2-025)


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**ORDER VACATING CONTESTED CASE HEARING AND SETTING ORAL
ARGUMENT**

Upon review of the recent pleadings filed by Powder River Basin Resource Council, Mary Brezik-Fisher and David Fisher, and Big Horn Coal Company, and upon review of Wyo. Stat. Ann. § 35-11-406(k), I believe the parties need to address the issue of whether there is a proper appeal before the Council at this time necessitating a contested case. As a result, the parties are asked to brief the issue of whether there is a proper appeal before the Council at this time that necessitates a contested case. Because I want to provide the parties time to brief this issue and for the Council to fully consider and decide the issue, the contested case set for February 13 and 14 is vacated.

THEREFORE, the motion hearing and final contested case hearing scheduled for February 13 and 14, 2017 is vacated. Further, the parties have until February 15, 2017, by 5:00 p.m. to file briefs on the issue set forth above. A teleconference before the Council to hear oral arguments on this issue will be held on February 21, 2017, at 1:30 p.m. in Room 1699, 1st Floor West, Herschler Building 122 West 25th St. Cheyenne WY. The parties may participate by phone by providing advance notice to the Council.

SO ORDERED this 7th day of February, 2017.


Tim Flitner, Hearing Officer
Environmental Quality Council

Environmental Quality Council
Room 1714
1st Floor West
Herschler Building
122 West 25th St.
Cheyenne WY 82002

CERTIFICATE OF SERVICE

I, Jim Ruby, certify that at Cheyenne, Wyoming, on the 2nd day of February, 2017, I served a copy of the foregoing **ORDER VACATING CONTESTED CASE HEARING AND SETTING ORAL ARGUMENT** by electronic mail addressed to the following:

Andrew Kuhlmann
Asst. Attorney General
andrew.kuhlmann@wyo.gov

Todd Parfitt
Director, DEQ
Todd.Parfitt@wyo.gov

Alan Edwards
Deputy Director, DEQ
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jwacker@crowleyfleck.com
wdrake@crowleyfleck.com



Jim Ruby, ~~Council Business Coordinator~~
Environmental Quality Council
122 W. 25th Street
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Cheyenne, WY 82002
Phone: 307-777-7170

EXHIBIT F



Lynnette Boomgaarden
237 Storey Blvd. Suite #110
Cheyenne, WY 82009
Phone: 307-772-4100
Fax: 307-426-4099
lboomgaarden@crowleyfleck.com

February 15, 2017

VIA: *Kyle.Wendtland@wyo.gov*
Todd.Parfitt@wyo.gov

Kyle Wendtland, Administrator
Land Quality Division
Wyoming Department of Environmental Quality
200 W. 17th Street, Suite 10
Cheyenne, WY 82002

Todd Parfitt, Director
Wyoming Department of Environmental Quality
200 W. 17th Street
Cheyenne, WY 82002

**RE: Renewed Request for an Informal Conference regarding Big Horn
Coal Company's Written Objections to Brook Mining Co., LLC's
Coal Mining Permit Application, DEQ File No. TFN 6 2-025**

Dear Mr. Wendtland and Mr. Parfitt,

On behalf of Big Horn Coal Company ("Big Horn"), and for the reasons stated in Objector Big Horn Coal Company's Brief Addressing Whether the Environmental Quality Council Presently has Jurisdiction over this Matter, I am renewing Big Horn's previous request for an administrative informal conference pursuant to Wyo. Stat. Ann. § 35-11-406(k) and Wyo. Admin. Code ENV PP Ch. 3 § 3.

The requested conference shall be for the purpose of considering Big Horn's written objections to Brook Mining Company's surface coal mining permit application, DEQ File No. TFN 6 2-025, filed with Mr. Wendtland on January 25, 2017. In accordance with the Rules and Regulations, the primary issues to be addressed at this conference shall include: (1) whether Brook Mine has or can meet its burden of satisfying all requirements for permit approval

pursuant to Wyo. Stat. Ann. § 35-11-406(n) and the related Rules and Regulations; and (2) the merits of Big Horn's technical objections to Brook Mine's permit application, which primarily relate, but are not limited, to hydrologic data and impacts, material testing and data, sloughing, existing subsurface fire activity and related controls, and subsidence.¹ Big Horn staunchly believes these issues can be best addressed, and possibly resolved or narrowed, in the context of an open, candid, informal conference with Big Horn representatives, Brook Mine and its consultants, and the DEQ technicians who reviewed and will take action on Brook Mine's mine and reclamation plans and any accompanying data. Pursuant to Wyo. Admin. Code ENV PP Ch. 3 § 1, Big Horn requests that a record of the conference be made.

Big Horn does not request that the conference be held in the locality of the proposed mining operation and does not request access to the proposed permit area. However, if another interested party requests these accommodations, Big Horn has no objection thereto.

Big Horn requests that the informal conference be held as soon as practicable.

Sincerely,

CROWLEY FLECK PLLP



LYNNE BOOMGAARDEN

¹ A copy of Big Horn's objections to the Brook Mine permit application filed in this matter is attached hereto as **Exhibit A**.

EXHIBIT A



**BIG HORN COAL COMPANY
10980 SOUTH JORDAN GATEWAY
SOUTH JORDAN, UT 84095**

January 25, 2017

Wyoming Department of Environmental Quality
Land Quality Division
200 W. 17th Street
Cheyenne, WY 82002

ATTN: Mr. Alan Edwards, Assistant Administrator

**RE: Objections to Proposed Brook Mine Permit Application, Sheridan County,
Wyoming**

Dear Mr. Wendtland,

Big Horn Coal Company (BHCC) writes to provide objections to the Brook Mine permit application.

During the course of our review, we discovered that the information was inconsistent among the locations noted in the public notice. We advised Brook Mine's legal counsel of the inconsistency on December 20, 2016. We are not aware if the information was updated to correct the inconsistency between the locations.

Our objections are based upon what BHCC believes to be the most accurate, up-to-date information and relate primarily to the permit application's lack of adequately addressing hydrologic issues that could significantly affect existing and future water rights, the quantity and quality of surface water and groundwater within and adjacent to BHCC, the potential for coal seam fires to erupt in both the open pit and subsurface openings and the potential for miner safety and environmental harm proposed in the permit Mine Plan. The objections are referenced to text section headings, exhibits and addenda of the permit application Mine and Reclamation Plan.

Objection No. 1 – Mine Plan & Rec Plan Review

Big Horn Coal has reviewed the proposed mine and reclamation plan and is concerned with the general lack of detail contained in the proposed plan. It appears that no sampling, testing or analytical work of any sort has been performed to support the surface and highwall mine designs and plans. It is Big Horn Coal's opinion that excavating in the area, surrounding the Big Horn Mine will create a large safety concern and environmental

liability as the TR-1 trench cut could become inundated with water from the historic backfill of the BHCC spoils of Pit 1 and Pit 2.

BHCC would like to put on record that it is providing written notice of its concerns so Brook Mine and other affected parties have notice and are aware of these issues and that Big Horn Coal is not responsible for any personal, property or environmental damage or other loss due to the disturbance activities associated with the Brook Mine, its affiliated companies or successors in interest.

BHCC has not consented to overlapping permit boundaries nor has it been indemnified of any disturbance related to Brook Mine's proposed activities as it relates to the reclamation obligations and BHCC's reclamation liabilities.

Objection No. 2 – Section MP.4; Exhibit MP.4-1; Section MP.5; Section MP.13; Addendum MP-6

Section MP.4 and Exhibit MP.4-1 provide plans for the development of a highwall mining trench through and the development of highwall mining panels beneath reclaimed backfill of BHCC Pits 1 and 2 adjacent to Goose Creek and the Tongue River in the southeastern portion of the Brook Mine permit area. The trench would penetrate through the bottom of the backfill allowing mining of Carney coal found about 70 feet beneath the backfill. The backfill of the proposed trench area averages about 90 feet thick. The northeast corner of the highwall panel area appears on Exhibit MP.4-1 to be equivalent to the Brook Mine permit boundary, and would be less than 100 feet from the bank of the Tongue River. On Figure MP-6.1-1 of Addendum MP-6, the highwall mining panels are shown even closer to the Tongue River channel, and the reason for the disparity between the figure and Exhibit MP.4-1 is unexplained. BHCC is very concerned over and objects to the permit's disturbance, affected and permit boundaries all being equivalent to the mining panel boundary in this most environmentally sensitive area adjacent to the bank of the Tongue River. The affected area boundary shown on Exhibit MP.4-1 around the other proposed mining panels typically extends well beyond the disturbance boundary for reasons unexplained in the Mine Plan.

Mine Plan Section MP.4, together with all Mine Plan text inclusive of Section MP.13 and Addendum MP-6, are silent on the subject of the special textural and hydrologic characteristics of the proposed southeastern highwall mining area in Sections 15 and 22, T57N, R84W. The area is unique in that the strata overlying the coal to be mined includes a thick layer of unconsolidated, saturated backfill exhibiting shallow groundwater elevations of 20 feet or less below ground surface where existing ground elevations are 3600 feet and lower. The water surface in BHCC's postmining Reservoir 14 in the SESE Sec. 15 is an expression of the groundwater table. The groundwater throughout Pits 1 and 2 is directly connected to and recharged by Goose Creek and the Tongue River, as documented in the Big Horn Mine's Reclamation History, Groundwater Restoration Demonstration (GRD) approved by the WDEQ/LQD as Change No. 9 to Permit 213-T5 in August 2002. The GRD verifies that the Pits 1 and 2 backfill resaturated very rapidly, indicative of unconsolidated, porous material connected to perennial stream recharge sources nearby. Mine Plan Section MP.4 is silent on the subject of managing massive sloughing that may occur in the saturated and nonsaturated backfill of the southeastern highwall mining area as the highwall mining trenches are excavated through the backfill to the base of Carney coal. Section MP-5 of the Mine Plan also fails to present an

alternative water management and treatment plan to be followed should groundwater inflow volumes exceed infrastructure design capacities.

BHCC finds the assessment of potential land subsidence and the remediation plan presented for land subsidence in Addendum MP-6 to be inadequate relative to protecting the value and function of its lands, particularly for protecting the stability of the Tongue River and the quality of shallow groundwater connected to the river. Addendum MP-6 does not absolutely discount the possibility of land subsidence above the highwall miner holes, nor does it provide a plan for the discontinuation of any southeastern area highwall mining should subsidence occur in the lowlands contiguous to Tongue River or Goose Creek. The environmental implications of subsidence developing adjacent to Tongue River and Goose Creek are so severe as to warrant, at a minimum, a permit commitment to temporarily or permanently cease all mining throughout all of the southeastern highway mining area should any subsidence develop in any of the area at any time. The permit's plan for "backfilling will commence within 12 months of a subsidence location being identified if self-healing is not providing sufficient remediation" (Section MP-6.4, Addendum MP-6) is environmentally unacceptable for the southeastern highwall mining area because: 1) the stability and alignment of Goose Creek and Tongue River could be jeopardized should subsidence occur, and; 2) any groundwater quality impacts associated with underground coal fires developing in mine openings would have direct and essentially immediate access to Goose Creek and Tongue River via the shallow groundwater table.

The subsidence control plan presented in Addendum MP-6 is inadequate. It appears that no analytical work of any sort (sampling, material testing, etc.) has been performed in support of the highwall mining design presented in the mine plan. Additionally, it also appears that no geotechnical work of any sort has been performed. Addendum MP-6 discusses general assumptions for highwall mining penetration depths, entry widths, cutting heights and support pillars. This information is presented somewhat anecdotally and in the case of the support pillars, it states that "Support pillars will be designed to have a width equal to or exceeding the maximum extraction thickness anticipated in a highwall mining hole based on the mine's geologic model. This width-to-height ratio of at least 1:1 results in pillar stability factors that exceed recommended values suggested by National Institute for Occupational Safety and Health's (NIOSH) ARMPS-HWM stability program for the overburden thicknesses expected. Pillar dimension will also be in accordance with Brook Mine's Ground Control Plan approved by MSHA."

No material strength data (coal strength, overburden strength, interburden strength, etc.) is provided in the mine plan document. BHCC suspects that no material strength information has been gathered or determined. Can the NIOSH stability factors actually be achieved? This is unknown at this point as no definitive geotechnical and material strength data has been presented in the mine plan. The coals present in this area are of a younger age. Younger age coals have much weaker strengths than older age, deeper coals and it is quite possible that the safety and stability factors needed to safely and effectively execute the highwall mining approach presented in the mine plan cannot be achieved. BHCC insists that further analysis be performed to definitively prove that the web and barrier pillars dimensions are appropriate and that they will meet NIOSH's minimum stability factor of 1.3.

Very little highwall mining has been performed in Wyoming. Highwall mining has been performed relatively recently at the Bridger Mine, which is located in Southwest Wyoming.

While the exact details are unknown, BHCC is aware of at least one "cascading pillar failure" at that operation and fortunately, there were no injuries. It is suspected that this failure was caused by improper pillar layout and design. BHCC is concerned that the anecdotal mine design presented in this document is inadequate and must be performed with proper analytical data.

Objection No. 3 – Section MP.5.9; Section MP.6.2; Addendum MP-3; Section MP.8

The groundwater model of Addendum MP-3 was improperly constructed and executed because the model does not recognize the unique textural and hydraulic characteristics of saturated backfill in BHCC's Pits 1 and 2, but instead simulates the backfill in the same fashion as native overburden strata (see Section 4.0 of Addendum MP-3). Section 2.5.1 of Addendum MP-3 states "no site-specific hydraulic conductivity information is available for the over/interburden (model) layers". In fact, hydraulic conductivity data are available for the backfill from former monitor wells in the Pit 1 and Pit 2 area and for the Plachek Pit backfill. That data are provided in the GRD referenced under Objection No. 1 above. Hydraulic conductivity values assigned to the spoils together with all other "overburden" strata in the model are very small (less than one tenth) relative to those shown for backfill in the GRD. The groundwater model ignores determination of the spatial extent of drawdown in the water table of Pit 1 and Pit 2 backfill that is connected to the water table in Tongue River and Goose Creek alluvium, which in turn is supplied by flows in both streams. The text of Section MP.6.2.3 states "Drawdowns of the overburden were not modeled and only isolated sands where encountered are expected to be affected".

Section 4.9 and Figure 4.9-11 of Addendum MP-3 shows where the groundwater model was used to predict water table drawdown in Tongue River valley alluvium at "alluvial target" points distributed over nearly a six-mile reach of the valley floor. Section 4.9 states that "the maximum impact to the Tongue River alluvium is conservatively estimated to reach 2.5 feet of drawdown near the river". Addendum MP-3 and Section MP.6.2 provide no description or drawing of the spatial distribution of drawdown during mining in BHCC's saturated backfill or in the alluvium of Tongue River and Goose Creek that is hydraulically connected to the backfill. Neither does the groundwater model explore potential permanent groundwater elevation changes associated with the highwall mining panels acting as drains to the backfill and alluvial water table via the highwall trench pits. Water table drawdown approaching 2.5 feet in the alluvium of Tongue River valley over a valley distance of nearly six miles would in fact represent a very large volume water loss that would likely cause stream flow losses.

The groundwater model of Addendum MP-3 fails to report groundwater inflow rates to any of the proposed mine excavations. Section MP.8 of the Mine Plan states "It is estimated that the total water use will be approximately 400 million gallons per year." This is equivalent to an average daily use rate of 760 gallons per minute, about 3.36 acre-feet per day, or about 1,226 acre-feet per year. The Mine Plan does not identify the specific source(s) of the water beyond mentioning that "Industrial water will be obtained from groundwater wells or from water collected in sediment and flood control reservoirs". The groundwater model of Addendum MP-3 does not include the effects of withdrawing any groundwater from wells for industrial or other uses, nor does it include the effects of dewatering wells mentioned in Section MP.5.9. In short, the Mine Plan is devoid of a hydrologic budget identifying specific groundwater sources, the quantity of industrial

water projected to be available from flood control reservoirs and sediment ponds, and the determination of what would remain of groundwater and surface water supplies while supplying the industrial water needs. BHCC is concerned that the value of its surface estate and future options for developing its surface estate could be marginalized by such a large water use demand, especially considering that water demands at Wyoming coal mines are primarily consumptive.

Objection No. 4 – Section MP.11; Addendum MP-5

The fire control plan referenced in Section MP.11 and presented in Addendum MP-5 describes measures to be taken to prevent and control fires in the mine pits, fires in the mine's processing and shop facilities, equipment fires and rangeland fires. BHCC objects, however to the Mine Plan and Addendum MP-5 not providing plans to control and extinguish new subsurface coal fires that may develop or existing subsurface coal fires that may become rekindled or enlarged as a result of the highwall mining panels that will be opened outboard of the highwall trench openings.

Attachment 1 provided with this Objection No. 4 is a drawing showing the approximate extent of underground coal mine fires in the area of proposed highwall mining in Sections 10 and 15, T57N, R84W, as reported by the U.S. Geological Survey in 1980. The fires in this particular area originated with mining of the Monarch coal. This and other nearby historic underground mines have long been known to exhibit numerous subsidence features and underground coal mine fires, and in the late 1980s BHCC received approval from the WDEQ/LQD to permanently place nearly 10 million bank cubic yards of overburden over the area shown on Attachment 1 in an attempt to reclaim the subsidence and control the fire. That unique reclamation feature is known as the Pit 3 Subsidence Dump in Big Horn Mine's reclamation history. The proposed highwall mining will develop mine openings in the Carney and Masters coal seams beneath the Monarch seam in areas that are known to still exhibit evidence of underground coal fires. Plumes of steam and smoke have been observed again over the general area of Sections 10 and 15 this winter of 2016-2017. These observations indicate that, in places, the perimeter of the historic subsurface coal seam fires has expanded notable distances from the referenced 1980 boundary delineation.

The subsidence control plan of Addendum MP-6 does little to guarantee the long-term protection of BHCC's surface estate especially where highwall mining panels will be driven beneath underground coal mine fires having a long history of activity. Section MP-6.2 of Addendum MP-6 provides numerical calculations for subsidence chimney heights, but there is no investigation of the potential that the historic mine fires may have compromised the structural integrity of strata underlying the fires and overlying the coals targeted for highwall panel mining (the interburden), leaving the interburden more prone to subside than normal. BHCC is particularly concerned and objects to highwall mining beneath or adjacent to pre-existing underground mine fires because of the potential for oxygen and water to be transmitted from the highwall mining openings to "hotspots" in the seams already burning via highwall trenches or via fractured or subsided interburden above the panel openings. BHCC strongly disagrees with the legitimacy of the plan stated in Section MP-6.4 of Addendum MP-6 which states "Backfilling will also be performed if it is determined that the introduction of water and oxygen could contribute to spontaneous ignition of the remaining coal not extracted from the highwall mining operations". BHCC

contends it to be common knowledge in the mining industry that oxygen and water are key catalysts in causing spontaneous combustion in coal, whether the coal be in mine openings or in stockpiles. BHCC also believes that the introduction of additional water and air to a coal seam already on fire is especially problematic.

Section MP-6.3 of Addendum MP-6 commits to maintaining highwall mining mapping and subsidence documentation in a subsidence report that will be available for inspection. BHCC objects to the Mine Plan not committing to freely submitting the highwall mining mapping and subsidence documentation report to all owners of surface estate within the Brook Mine permit area. BHCC also objects to the fact that the Subsidence Monitoring and Assessment reporting of Section MP-6.3 does not include mapping, photographing and describing all evidence of surface or underground coal fires occurring within the Brook Mine permit area whenever such evidence becomes available throughout the life of the mining and post-mining periods.

Objection No. 5 – Section MP.1.3; Exhibit MP.1-1

The mine plan on Page MP-5, identifies the “disturbance boundary includes all lands that will be physically and directly disturbed during mining.” Exhibit MP.1-1 shows the disturbance boundary as a dashed orange symbol that outlines an entire pink hatched polygon, identified as “DISTURBANCE FOR YEAR 2016,” located in Sections 15, 21, 22 and 27 of Township 57 North, Range 84 West.

Within the pink hatched polygon, there are existing assets to Big Horn Coal Company. These assets include a rail spur, water tank, pump house, access roads, fences and land owned by BHCC. Also within the pink hatch polygon is the mainline of the Burlington Northern Railroad and associated lands owned by Burlington Northern.

Based on the definition of Disturbance Boundary as indicated on page MP-5, does Brook Mine indeed have the rights to physically and directly disturb these lands within the pink hatched polygon? From the public record, BHCC has not been able to determine whether Brook Mine has secured surface owner consent from all surface owners, including the railroad, for these activities

Objection No. 6 – Section MP.1.5

The mine plan states on Pages MP-5 and continue onto page MP-6 that “Coal will either be temporarily stored in the pit or directly hauled off site.”

There is no mention in the permit as to where the coal will be hauled off site. Additionally there is no known agreement with the County of Sheridan, indicating approval to haul mineral across county roads.

Objection No. 7 – Section MP.1.9

The mine plan states on Pages MP-7 that “The Brook Mine will operate in conjunction with Taylor Quarry (Permit No. SP-757)... The Mine will work with Taylor Quarry to minimize impacts on Taylor Quarry’s operation.”

The following paragraph states "The Brook Mine will not obstruct Big Horn Coal's (Permit 231-T8) Shop, Bridge, and Rail Road Siding as they exist in Big Horn Coal's 2015 Annual Report. An access road equivalent to the existing improved road will be provided if proposed stockpiles or pits should restrict the existing access as shown on Exhibit MP.1-1.

To remain consistent with the statements made in regards to the Taylor Quarry, Big Horn Coal requests that the paragraph referencing Big Horn to be replaced and restated as follows:

"The Brook Mine will operate in conjunction with the Big Horn Mine and that the Brook Mine will work with Big Horn Coal to minimize impacts to Big Horn Coal operations. Specifically, Brook Mine will not obstruct Big Horn Coal's (Permit 213-T8) Shop, Bridge, and Rail Road Siding as they exist in Big Horn Coal's 2015 Annual Report. An access road equivalent to the existing improved road will be provided if proposed stockpiles or pits should restrict the existing access as shown on Exhibit MP.1-1."

Big Horn Coal requests that the text be updated in the previous paragraph to reference the correct permit number for Big Horn Coal Company as (Permit 213-T8).

Objection No. 8 – Section MP.3.1, Section MP.3.1.3 – Roads; Exhibit MP.3-1

As stated in the mine plan on Page MP-11, "Primary roads are any road used for transporting mineral or spoil, or frequently used for access or other purposes for a period in excess of six months, or roads to be retained for postmining use."

WDQ/LQD Rules and Regulations (R&R) Chapter 4, Section 2(j)(vii):

Primary roads.

(A) Certification. The construction or reconstruction of primary roads shall be certified in a report to the Administrator by a registered professional engineer. The report shall indicate that the primary road has been constructed or reconstructed as designed and in accordance with the approved plan. The report shall be available for review at the mine site within 30 days following the completion of construction of each primary road.

Mine plan Exhibit MP.3-1, titled Transportation Network identifies proposed primary haulroads as a solid black line, for the use of transporting mineral or spoil. Yet, there are no haulroads identified in the SE quarter of Section 15, Sections 21, 22 or 27. If the Brook Mine plans to haul mineral or spoil materials from the proposed Trench Cut (TR-1), there should be indication of a primary haul road leaving TR-1, accompanied by a certification of the road design. Unless there are no plans of transporting mineral or spoil from the TR-1 area.

Objection No. 9 – Section MP.4.2.3 – Stockpiles; Exhibit MP.4-3

The mine plan states on Page MP-16, "Stockpiles will not be constructed on unsuitable backfill."

Mine plan Exhibit MP.4-3, Stockpile Locations identifies Topsoil Stockpile TS-1B proposed location within an area known as the Placheck Pit. This area was mined by Big Horn Coal from 1956 through 1963. It is Big Horn Coal's understanding that the proposed area beneath TS-1B is indeed unsuitable material and that topsoil should not be placed in the area as proposed on Exhibit MP.4-3. Additionally, Big Horn Coal is not aware of a surface owner consent document between Brook Mining Company and the Burlington Northern Railroad that would allow the crossing of the mainline with loaded haul trucks.

Objection No. 10 – Section MP.6.1; Exhibit MP.7-1

Exhibit MP.7-1 represents the operational Surface Water and Groundwater Monitoring Program. There are only two downstream surface water monitoring sites, identified as Big Horn No. 2 Reservoir and Big Horn No. 14 Reservoir. The text on page MP-41 of the Mine Plan states "However, the Big Horn No. 2 Reservoir and Big Horn No. 14 Reservoir will be disturbed by facilities disturbance."

Big Horn Coal believes there is inadequate downstream monitoring in the proposed plan. Upon disturbing of Big Horn No. 2 Reservoir and Big Horn No. 14 Reservoir, there will be no sites downstream of the Brook Mine to collect adequate surface and groundwater data to prove that there are no off site environmental impacts from the proposed operation.

Objection No. 11 - Addendum MP-2, Exhibit MP-2

The proposed Sediment Pond SP-8 is located within the current postmine approved Reservoir 14 constructed by BHCC. The bottom elevation of Reservoir 14 is currently at 3575 with a peak elevation at 3589. Sediment Pond SP-8 bottom elevation is proposed at 3585 with a high water elevation proposed at 3590. It is noted below the area capacity table on Exhibit 13, "1. Pond is entirely incised. No Spillway hydraulics are provided."

These elevations lead BHCC to believe the plan for construction of SP-8 will require Reservoir 14 to be completely backfilled prior to construction of SP-8. BHCC requests that the reconstruction and the water quality within Reservoir 14 be restored to pre-mining conditions before final bond release is allowed.

Objection No. 12 – Exhibit MP.4-1; Exhibit MP.4-2; Exhibit MP.4-5; Exhibit RP.5-1

The proposed mine plan indicates that topsoil and overburden removal will occur upon the BHCC Property and within the TR-1 area in years 1 and 2 of operation. Exhibit MP.4-1 shows coal removal to occur over the same first two years of operation. Exhibit MP.4-5 shows the overburden backfill sequence within TR-1 will occur in year 2. Exhibit RP.5-1 shows the topsoil replacement sequence within the BHCC Property occurring in years 12-16.

BHCC objects to this timeline of topsoil replacement upon its property. The BHCC property is the first to be disturbed and the last to be reclaimed. BHCC asks the question as to why every other proposed disturbance area is backfilled and topsoiled within a 2 to 3 year time frame except around the BHCC facilities area. The topsoil replacement timeframe is unacceptable and not contemporaneous in accordance with the Surface Mining Control and Reclamation Act, (SMCRA) and it is requested that the final

reclamation around the BHCC Property be within the 2 to 3 year time frame, similar to all other areas around the mine.

Objection No. 13 – Section MP.1.2.1; Figure MP.1-2.

Section MP.1.2.1 discusses the work that will be done to “prepare for highwall mining” and describes how the “trenches” will be constructed to “create working areas for highwall mining equipment”. This section of the mine plan states that “The highwalls will have a 65-degree bench slope to provide a stable trench environment. Where the trench intersects the burnt Monarch coal seam, a 35-foot wide safety bench will be added. Where the Carney and Masters coal seams come close to convergence, a vertical wall will be used to maintain the desired pit width.” Earlier, under Objection No. 2, BHCC discussed the presence of saturated backfill where trench TR-1 is planned to be excavated. Section MP.1.2.1 does not address in any fashion the fact that trench TR-1 will be constructed in an area containing a significant amount of saturated backfill material. In our opinion, utilizing a 65-degree bench slope in this material will be impossible as the saturated backfill will not safely stand at this angle. Furthermore, no geotechnical information (sampling, testing or analysis) supporting slope stability assumptions for the surface mining or highwall mining operations have been provided in the mine plan. BHCC finds the information regarding highwall bench slope angles presented in MP.1.2.1 to be inadequate given the variability of non-coal material that will be encountered during excavation of trenches in support of the highwall mining operation.

Objection No. 13 – Section MP.1.2.1; Figure MP.1-2.

Section MP.1.2.1 discusses the work that will be done to “prepare for highwall mining” and describes how the “trenches” will be constructed to “create working areas for highwall mining equipment”. This section of the mine plan states that “The highwalls will have a 65-degree bench slope to provide a stable trench environment. Where the trench intersects the burnt Monarch coal seam, a 35-foot wide safety bench will be added. Where the Carney and Masters coal seams come close to convergence, a vertical wall will be used to maintain the desired pit width.” Earlier, under Objection No. 2, BHCC discussed the presence of saturated backfill where trench TR-1 is planned to be excavated. Section MP.1.2.1 does not address in any fashion the fact that trench TR-1 will be constructed in an area containing a significant amount of saturated backfill material. In our opinion, utilizing a 65-degree bench slope in this material will be impossible as the saturated backfill will not safely stand at this angle. Furthermore, no geotechnical information (sampling, testing or analysis) supporting slope stability assumptions for the surface mining or highwall mining operations have been provided in the mine plan. BHCC finds the information regarding highwall bench slope angles presented in MP.1.2.1 to be inadequate given the variability of non-coal material that will be encountered during excavation of trenches in support of the highwall mining operation.

Objection No. 14 – Section MP.4.4.1

It is a well-known fact within the mining industry that the term “Reserves” connotes that the mineral being extracted can be done so economically. BHCC opines that the mining approach presented in the mine plan cannot be done economically. Based on our internal

knowledge; the operating cost for a contractor to perform highwall mining is in the \$8/Ton to \$12/Ton range, which is very close to the domestic spot price for this type of coal. By the time the other costs for the surface mining to develop the highwall mining, transportation, G&A, etc. are taken into consideration, this operation appears to be completely uneconomical.

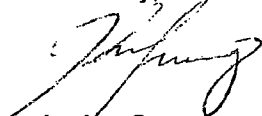
The market for this coal is unclear. The two closest coal mines, Decker and Spring Creek, serve the domestic and international market. Port capacity to the international market is constrained and it is unlikely that Brook Mine will secure access. Domestic demand has been in decline and is significantly oversupplied. Without a definitive market, the Brook Mine is at risk of commencing operations, producing product it cannot sell economically, and reclamation obligations that it cannot fund.

Objection No. 15 – Section MP.15

Objection No. 4 above introduces the fact that the underground mine fires in this area are still burning and have expanded. Section MP.15 does not, in any way, address that the burned areas have expanded. A surface mine excavation that comes in contact with a historic mine fire could be catastrophic in many ways, including: impacting the safety of mine workers, damage to equipment, wildfire initiation, etc. BHCC believes this mine plan has not adequately addressed surface mining activities that will occur near underground mines and insists that the Brook Mine operators must perform the necessary testing and analysis to prove that the proposed mine plan will not be impacted by historic mine fires. Specifically, attachment 1 provided with Objection No. 3 above shows that trench TR-2 is planned very near an area that was burning and is likely still burning. Given that the burned area has likely expanded, this area should not be disturbed at all.

In conclusion, Big Horn Coal Company feels strongly that the Brook Mine permit application should not be approved or deemed technically complete. The mine and reclamation plan lack a significant amount of detail that is required for a technical completeness determination, as stated in the above mentioned objections.

Sincerely,



Jordan Sweeney

General Manager
Big Horn Coal Company

Attachment: BHCC Objection No.4 Attachment 1

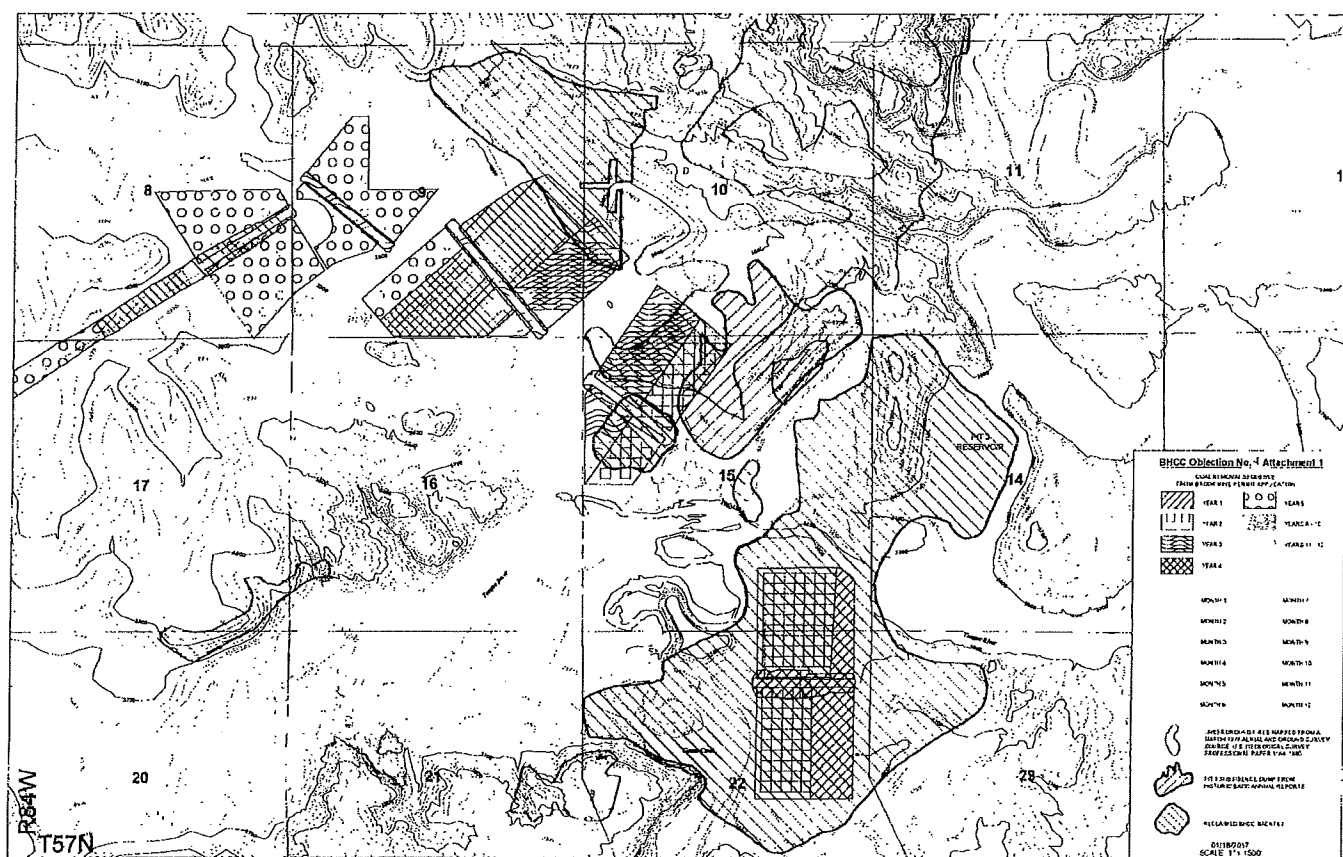


EXHIBIT G

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ATTORNEYS FOR OBJECTORS
BIG HORN COAL COMPANY

**BEFORE THE ENVIRONMENTAL QUALITY COUNCIL
STATE OF WYOMING**

IN RE BROOK MINE APPLICATION

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)

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Docket No. _____

TFN 6 2-025

**OBJECTOR BIG HORN COAL COMPANY'S PETITION FOR A
HEARING BEFORE THE ENVIRONMENTAL QUALITY COUNCIL**

Big Horn Coal Company ("Big Horn"), by and through it undersigned counsel, Crowley Fleck PLLP, hereby submits this Petition for Hearing before the Environmental Quality Council (the "Council").

This matter arises from the coal mining permit application of Brook Mining Company, LLC ("Brook Mine") and the numerous objections related thereto. First and foremost, Big Horn asserts that it requested and has renewed its request for an informal conference in this matter, and that DEQ should reconsider Big Horn's and

the other objectors' requests for an informal conference.¹ In the event that DEQ confirms its decision to deny the requests for an informal conference, Big Horn now requests a contested case hearing before the Council regarding Brook Mine's permit application and Big Horn's objections thereto pursuant to Wyo. Stat. Ann. § 35-11-112(a)(iv),(c)(ii); -406(k),(p).

Facts

1. Big Horn Coal Company is a Wyoming corporation, active and in good standing, with its principal office located at 110980 South Jordan Gateway, South Jordan, Utah. Big Horn is wholly owned by LHR Coal, LLC and LHR Coal, LLC is wholly owned by Lighthouse Resources, Inc.

2. Brook Mining Company, LLC is a Wyoming limited liability company with its principal office located at 1101 Sugarview Drive, Ste. 201, Sheridan, WY.

3. Brook Mine has submitted an application for a coal mining permit from the Land Quality Division of the Department of Environmental Quality for the State of Wyoming, DEQ File No. TFN 6 2-025 (the "permit application").

¹ Big Horn asserts that numerous requests for an informal conference were made during the period for filing objections to Brook Mine's permit application pursuant to Wyo. Stat. Ann. § 35-11-406(k). In furtherance of its initial request and given the current, unique procedural posture of this matter, Big Horn has also formally renewed its request for an administrative, informal conference, attached hereto as **Exhibit A**. This request for a contested case hearing before the Council is contingent on a confirmed denial of an opportunity for informal conference and to ensure that the objections of Big Horn are properly presented and considered.

4. According to the public notice, the coal mining permit area will be located in: Sections 10, 11, 12, 13, 14 and 15 of Township 57N, Range 85W and Sections 7, 8, 9, 10, 15, 17, 18, 20, 21, 22, and 27 of Township 57N, Range 84W Sheridan County, Wyoming (the “permit area”).

5. Big Horn is the owner of real property interests in the permit area that will be negatively affected by proposed mining operations.

6. Big Horn has existing rights and reclamation obligations pursuant to its existing Mine Permit No. 213-T8, which lies within the boundaries of Brook Mine’s proposed mine permit area.

7. Pursuant to the Public Notice of Brook Mining Co., LLC Permit Application, written objections to the proposed mining operation were to be received by the Administrator of the Land Quality Division, Department of Environmental Quality before the close of business on January 27, 2017. *See* EQC Docket No. 17-4801.

8. Big Horn, along with several other parties, timely filed written objections to the proposed mining operation citing numerous concerns, including but not limited to, highly technical issues regarding the accuracy and completeness of Brook Mine’s mine and reclamation plans due to a lack of testing, data, and analysis to support present conclusions on hydrologic impacts, material strength, sloughing, and dangers related to existing subsurface fire activity and subsidence. The objections primarily address concerns pertaining to human health, safety and

the likely environmental impacts of the proposed mining operation. *See* EQC Docket No. 17-4801.

Request for Hearing

Big Horn now requests that the Environmental Quality Council schedule and hold a contested case hearing in this matter, in accordance with the Wyoming Administrative Procedure Act, whereby the Council will make findings of fact and issue a determination on the permit application.

Issues to be Determined at the Hearing

1. Whether Brook Mine has satisfied its obligations to ensure that the permit application is in compliance with Wyoming's Environmental Quality Act and all applicable state laws, and that Brook Mine has demonstrated that it has or can meet all requirements set forth in Wyo. Stat. Ann. § 35-11-406(n).
2. Whether Brook Mine has met and satisfied all conditions and requirements for submission and approval of its permit application, mining plan and reclamation plan found in the Environmental Quality Act and the Rules and Regulations of the Wyoming Department of Environmental Quality, including but not limited to those from Wyo. Admin. Code ENV LQD Ch. 2 and Ch. 12.

WHEREFORE, Big Horn hereby requests that the Environmental Quality Council schedule and hold a contested case hearing in this matter whereby:

1. The Council shall issue findings of fact and a decision on the permit application within sixty (60) days after the final hearing. Wyo. Stat. Ann. § 35-11-406(p).

2. The Director of the Department of Environmental Quality shall issue or deny the permit within fifteen (15) days of the Council's findings and decision. *Id.*
3. The parties shall be afforded right of judicial review from any action resulting from this hearing as provided in the Wyoming Administrative Procedure Act. *Id.* at -406(k).

DATED: February 15, 2017.

By 
Lynnette Boomgaarden (WSB # 5-2837)
Clayton H. Gregersen (WSB # 7-5677)
Crowley Fleck PLLP
237 Storey Boulevard, Suite 110
Cheyenne, WY 82009
(307) 426-4100

*Attorneys for Objectors
Big Horn Coal Company*

CERTIFICATE OF SERVICE

I hereby certify that on February 15, 2017, a true and correct copy of the foregoing was served by certified mail, return receipt requested, to the following:

David Bagley
Chairman, EQC
122 W. 25th
Herschler Bldg. 1W, Room 1714
Cheyenne, WY 82002

Todd Parfitt, Director
Wyoming Department of Environmental
Quality
200 W. 17th Street
Cheyenne, WY 82002

Thomas L. Sansonetti
Isaac N. Sutphin
Jeffrey Pope
2515 Warren Ave., Suite 450
P.O. Box 1347
Cheyenne, WY 82003-1347
Attorneys for Brook Mining Co., LLC

I hereby certify that on February 15, 2017, a true and correct copy of the foregoing was served by email to the following:

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James LaRock
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James.larock@wyo.gov
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Environmental Quality Council
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Alan Edwards
Deputy Director, DEQ
Alan.edwards@wyo.gov



EXHIBIT A



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February 15, 2017

VIA: *Kyle.Wendtland@wyo.gov*
Todd.Parfitt@wyo.gov

Kyle Wendtland, Administrator
Land Quality Division
Wyoming Department of Environmental Quality
200 W. 17th Street, Suite 10
Cheyenne, WY 82002

Todd Parfitt, Director
Wyoming Department of Environmental Quality
200 W. 17th Street
Cheyenne, WY 82002

**RE: Renewed Request for an Informal Conference regarding Big Horn
Coal Company's Written Objections to Brook Mining Co., LLC's
Coal Mining Permit Application, DEQ File No. TFN 6 2-025**

Dear Mr. Wendtland and Mr. Parfitt,

On behalf of Big Horn Coal Company ("Big Horn"), and for the reasons stated in Objector Big Horn Coal Company's Brief Addressing Whether the Environmental Quality Council Presently has Jurisdiction over this Matter, I am renewing Big Horn's previous request for an administrative informal conference pursuant to Wyo. Stat. Ann. § 35-11-406(k) and Wyo. Admin. Code ENV PP Ch. 3 § 3.

The requested conference shall be for the purpose of considering Big Horn's written objections to Brook Mining Company's surface coal mining permit application, DEQ File No. TFN 6 2-025, filed with Mr. Wendtland on January 25, 2017. In accordance with the Rules and Regulations, the primary issues to be addressed at this conference shall include: (1) whether Brook Mine has or can meet its burden of satisfying all requirements for permit approval

pursuant to Wyo. Stat. Ann. § 35-11-406(n) and the related Rules and Regulations; and (2) the merits of Big Horn's technical objections to Brook Mine's permit application, which primarily relate, but are not limited, to hydrologic data and impacts, material testing and data, sloughing, existing subsurface fire activity and related controls, and subsidence.¹ Big Horn staunchly believes these issues can be best addressed, and possibly resolved or narrowed, in the context of an open, candid, informal conference with Big Horn representatives, Brook Mine and its consultants, and the DEQ technicians who reviewed and will take action on Brook Mine's mine and reclamation plans and any accompanying data. Pursuant to Wyo. Admin. Code ENV PP Ch. 3 § 1, Big Horn requests that a record of the conference be made.

Big Horn does not request that the conference be held in the locality of the proposed mining operation and does not request access to the proposed permit area. However, if another interested party requests these accommodations, Big Horn has no objection thereto.

Big Horn requests that the informal conference be held as soon as practicable.

Sincerely,

CROWLEY FLECK PLLP



LYNNE BOOMGAARDEN

¹ A copy of Big Horn's objections to the Brook Mine permit application filed in this matter is attached hereto as **Exhibit A**.

EXHIBIT A



**BIG HORN COAL COMPANY
10980 SOUTH JORDAN GATEWAY
SOUTH JORDAN, UT 84095**

January 25, 2017

Wyoming Department of Environmental Quality
Land Quality Division
200 W. 17th Street
Cheyenne, WY 82002

ATTN: Mr. Alan Edwards, Assistant Administrator

**RE: Objections to Proposed Brook Mine Permit Application, Sheridan County,
Wyoming**

Dear Mr. Wendtland,

Big Horn Coal Company (BHCC) writes to provide objections to the Brook Mine permit application.

During the course of our review, we discovered that the information was inconsistent among the locations noted in the public notice. We advised Brook Mine's legal counsel of the inconsistency on December 20, 2016. We are not aware if the information was updated to correct the inconsistency between the locations.

Our objections are based upon what BHCC believes to be the most accurate, up-to-date information and relate primarily to the permit application's lack of adequately addressing hydrologic issues that could significantly affect existing and future water rights, the quantity and quality of surface water and groundwater within and adjacent to BHCC, the potential for coal seam fires to erupt in both the open pit and subsurface openings and the potential for miner safety and environmental harm proposed in the permit Mine Plan. The objections are referenced to text section headings, exhibits and addenda of the permit application Mine and Reclamation Plan.

Objection No. 1 – Mine Plan & Rec Plan Review

Big Horn Coal has reviewed the proposed mine and reclamation plan and is concerned with the general lack of detail contained in the proposed plan. It appears that no sampling, testing or analytical work of any sort has been performed to support the surface and highwall mine designs and plans. It is Big Horn Coal's opinion that excavating in the area, surrounding the Big Horn Mine will create a large safety concern and environmental

liability as the TR-1 trench cut could become inundated with water from the historic backfill of the BHCC spoils of Pit 1 and Pit 2.

BHCC would like to put on record that it is providing written notice of its concerns so Brook Mine and other affected parties have notice and are aware of these issues and that Big Horn Coal is not responsible for any personal, property or environmental damage or other loss due to the disturbance activities associated with the Brook Mine, its affiliated companies or successors in interest.

BHCC has not consented to overlapping permit boundaries nor has it been indemnified of any disturbance related to Brook Mine's proposed activities as it relates to the reclamation obligations and BHCC's reclamation liabilities.

Objection No. 2 – Section MP.4; Exhibit MP.4-1; Section MP.5; Section MP.13; Addendum MP-6

Section MP.4 and Exhibit MP.4-1 provide plans for the development of a highwall mining trench through and the development of highwall mining panels beneath reclaimed backfill of BHCC Pits 1 and 2 adjacent to Goose Creek and the Tongue River in the southeastern portion of the Brook Mine permit area. The trench would penetrate through the bottom of the backfill allowing mining of Carney coal found about 70 feet beneath the backfill. The backfill of the proposed trench area averages about 90 feet thick. The northeast corner of the highwall panel area appears on Exhibit MP.4-1 to be equivalent to the Brook Mine permit boundary, and would be less than 100 feet from the bank of the Tongue River. On Figure MP-6.1-1 of Addendum MP-6, the highwall mining panels are shown even closer to the Tongue River channel, and the reason for the disparity between the figure and Exhibit MP.4-1 is unexplained. BHCC is very concerned over and objects to the permit's disturbance, affected and permit boundaries all being equivalent to the mining panel boundary in this most environmentally sensitive area adjacent to the bank of the Tongue River. The affected area boundary shown on Exhibit MP.4-1 around the other proposed mining panels typically extends well beyond the disturbance boundary for reasons unexplained in the Mine Plan.

Mine Plan Section MP.4, together with all Mine Plan text inclusive of Section MP.13 and Addendum MP-6, are silent on the subject of the special textural and hydrologic characteristics of the proposed southeastern highwall mining area in Sections 15 and 22, T57N, R84W. The area is unique in that the strata overlying the coal to be mined includes a thick layer of unconsolidated, saturated backfill exhibiting shallow groundwater elevations of 20 feet or less below ground surface where existing ground elevations are 3600 feet and lower. The water surface in BHCC's postmining Reservoir 14 in the SESE Sec. 15 is an expression of the groundwater table. The groundwater throughout Pits 1 and 2 is directly connected to and recharged by Goose Creek and the Tongue River, as documented in the Big Horn Mine's Reclamation History, Groundwater Restoration Demonstration (GRD) approved by the WDEQ/LQD as Change No. 9 to Permit 213-T5 in August 2002. The GRD verifies that the Pits 1 and 2 backfill resaturated very rapidly, indicative of unconsolidated, porous material connected to perennial stream recharge sources nearby. Mine Plan Section MP.4 is silent on the subject of managing massive sloughing that may occur in the saturated and nonsaturated backfill of the southeastern highwall mining area as the highwall mining trenches are excavated through the backfill to the base of Carney coal. Section MP-5 of the Mine Plan also fails to present an

alternative water management and treatment plan to be followed should groundwater inflow volumes exceed infrastructure design capacities.

BHCC finds the assessment of potential land subsidence and the remediation plan presented for land subsidence in Addendum MP-6 to be inadequate relative to protecting the value and function of its lands, particularly for protecting the stability of the Tongue River and the quality of shallow groundwater connected to the river. Addendum MP-6 does not absolutely discount the possibility of land subsidence above the highwall miner holes, nor does it provide a plan for the discontinuation of any southeastern area highwall mining should subsidence occur in the lowlands contiguous to Tongue River or Goose Creek. The environmental implications of subsidence developing adjacent to Tongue River and Goose Creek are so severe as to warrant, at a minimum, a permit commitment to temporarily or permanently cease all mining throughout all of the southeastern highway mining area should any subsidence develop in any of the area at any time. The permit's plan for "backfilling will commence within 12 months of a subsidence location being identified if self-healing is not providing sufficient remediation" (Section MP-6.4, Addendum MP-6) is environmentally unacceptable for the southeastern highwall mining area because: 1) the stability and alignment of Goose Creek and Tongue River could be jeopardized should subsidence occur, and; 2) any groundwater quality impacts associated with underground coal fires developing in mine openings would have direct and essentially immediate access to Goose Creek and Tongue River via the shallow groundwater table.

The subsidence control plan presented in Addendum MP-6 is inadequate. It appears that no analytical work of any sort (sampling, material testing, etc.) has been performed in support of the highwall mining design presented in the mine plan. Additionally, it also appears that no geotechnical work of any sort has been performed. Addendum MP-6 discusses general assumptions for highwall mining penetration depths, entry widths, cutting heights and support pillars. This information is presented somewhat anecdotally and in the case of the support pillars, it states that "Support pillars will be designed to have a width equal to or exceeding the maximum extraction thickness anticipated in a highwall mining hole based on the mine's geologic model. This width-to-height ratio of at least 1:1 results in pillar stability factors that exceed recommended values suggested by National Institute for Occupational Safety and Health's (NIOSH) ARMPs-HWM stability program for the overburden thicknesses expected. Pillar dimension will also be in accordance with Brook Mine's Ground Control Plan approved by MSHA."

No material strength data (coal strength, overburden strength, interburden strength, etc.) is provided in the mine plan document. BHCC suspects that no material strength information has been gathered or determined. Can the NIOSH stability factors actually be achieved? This is unknown at this point as no definitive geotechnical and material strength data has been presented in the mine plan. The coals present in this area are of a younger age. Younger age coals have much weaker strengths than older age, deeper coals and it is quite possible that the safety and stability factors needed to safely and effectively execute the highwall mining approach presented in the mine plan cannot be achieved. BHCC insists that further analysis be performed to definitively prove that the web and barrier pillars dimensions are appropriate and that they will meet NIOSH's minimum stability factor of 1.3.

Very little highwall mining has been performed in Wyoming. Highwall mining has been performed relatively recently at the Bridger Mine, which is located in Southwest Wyoming.

While the exact details are unknown, BHCC is aware of at least one "cascading pillar failure" at that operation and fortunately, there were no injuries. It is suspected that this failure was caused by improper pillar layout and design. BHCC is concerned that the anecdotal mine design presented in this document is inadequate and must be performed with proper analytical data.

Objection No. 3 – Section MP.5.9; Section MP.6.2; Addendum MP-3; Section MP.8

The groundwater model of Addendum MP-3 was improperly constructed and executed because the model does not recognize the unique textural and hydraulic characteristics of saturated backfill in BHCC's Pits 1 and 2, but instead simulates the backfill in the same fashion as native overburden strata (see Section 4.0 of Addendum MP-3). Section 2.5.1 of Addendum MP-3 states "no site-specific hydraulic conductivity information is available for the over/interburden (model) layers". In fact, hydraulic conductivity data are available for the backfill from former monitor wells in the Pit 1 and Pit 2 area and for the Plachek Pit backfill. That data are provided in the GRD referenced under Objection No. 1 above. Hydraulic conductivity values assigned to the spoils together with all other "overburden" strata in the model are very small (less than one tenth) relative to those shown for backfill in the GRD. The groundwater model ignores determination of the spatial extent of drawdown in the water table of Pit 1 and Pit 2 backfill that is connected to the water table in Tongue River and Goose Creek alluvium, which in turn is supplied by flows in both streams. The text of Section MP.6.2.3 states "Drawdowns of the overburden were not modeled and only isolated sands where encountered are expected to be affected".

Section 4.9 and Figure 4.9-11 of Addendum MP-3 shows where the groundwater model was used to predict water table drawdown in Tongue River valley alluvium at "alluvial target" points distributed over nearly a six-mile reach of the valley floor. Section 4.9 states that "the maximum impact to the Tongue River alluvium is conservatively estimated to reach 2.5 feet of drawdown near the river". Addendum MP-3 and Section MP.6.2 provide no description or drawing of the spatial distribution of drawdown during mining in BHCC's saturated backfill or in the alluvium of Tongue River and Goose Creek that is hydraulically connected to the backfill. Neither does the groundwater model explore potential permanent groundwater elevation changes associated with the highwall mining panels acting as drains to the backfill and alluvial water table via the highwall trench pits. Water table drawdown approaching 2.5 feet in the alluvium of Tongue River valley over a valley distance of nearly six miles would in fact represent a very large volume water loss that would likely cause stream flow losses.

The groundwater model of Addendum MP-3 fails to report groundwater inflow rates to any of the proposed mine excavations. Section MP.8 of the Mine Plan states "It is estimated that the total water use will be approximately 400 million gallons per year." This is equivalent to an average daily use rate of 760 gallons per minute, about 3.36 acre-feet per day, or about 1,226 acre-feet per year. The Mine Plan does not identify the specific source(s) of the water beyond mentioning that "Industrial water will be obtained from groundwater wells or from water collected in sediment and flood control reservoirs". The groundwater model of Addendum MP-3 does not include the effects of withdrawing any groundwater from wells for industrial or other uses, nor does it include the effects of dewatering wells mentioned in Section MP.5.9. In short, the Mine Plan is devoid of a hydrologic budget identifying specific groundwater sources, the quantity of industrial

water projected to be available from flood control reservoirs and sediment ponds, and the determination of what would remain of groundwater and surface water supplies while supplying the industrial water needs. BHCC is concerned that the value of its surface estate and future options for developing its surface estate could be marginalized by such a large water use demand, especially considering that water demands at Wyoming coal mines are primarily consumptive.

Objection No. 4 – Section MP.11; Addendum MP-5

The fire control plan referenced in Section MP.11 and presented in Addendum MP-5 describes measures to be taken to prevent and control fires in the mine pits, fires in the mine's processing and shop facilities, equipment fires and rangeland fires. BHCC objects, however to the Mine Plan and Addendum MP-5 not providing plans to control and extinguish new subsurface coal fires that may develop or existing subsurface coal fires that may become rekindled or enlarged as a result of the highwall mining panels that will be opened outboard of the highwall trench openings.

Attachment 1 provided with this Objection No. 4 is a drawing showing the approximate extent of underground coal mine fires in the area of proposed highwall mining in Sections 10 and 15, T57N, R84W, as reported by the U.S. Geological Survey in 1980. The fires in this particular area originated with mining of the Monarch coal. This and other nearby historic underground mines have long been known to exhibit numerous subsidence features and underground coal mine fires, and in the late 1980s BHCC received approval from the WDEQ/LQD to permanently place nearly 10 million bank cubic yards of overburden over the area shown on Attachment 1 in an attempt to reclaim the subsidence and control the fire. That unique reclamation feature is known as the Pit 3 Subsidence Dump in Big Horn Mine's reclamation history. The proposed highwall mining will develop mine openings in the Carney and Masters coal seams beneath the Monarch seam in areas that are known to still exhibit evidence of underground coal fires. Plumes of steam and smoke have been observed again over the general area of Sections 10 and 15 this winter of 2016-2017. These observations indicate that, in places, the perimeter of the historic subsurface coal seam fires has expanded notable distances from the referenced 1980 boundary delineation.

The subsidence control plan of Addendum MP-6 does little to guarantee the long-term protection of BHCC's surface estate especially where highwall mining panels will be driven beneath underground coal mine fires having a long history of activity. Section MP-6.2 of Addendum MP-6 provides numerical calculations for subsidence chimney heights, but there is no investigation of the potential that the historic mine fires may have compromised the structural integrity of strata underlying the fires and overlying the coals targeted for highwall panel mining (the interburden), leaving the interburden more prone to subside than normal. BHCC is particularly concerned and objects to highwall mining beneath or adjacent to pre-existing underground mine fires because of the potential for oxygen and water to be transmitted from the highwall mining openings to "hotspots" in the seams already burning via highwall trenches or via fractured or subsided interburden above the panel openings. BHCC strongly disagrees with the legitimacy of the plan stated in Section MP-6.4 of Addendum MP-6 which states "Backfilling will also be performed if it is determined that the introduction of water and oxygen could contribute to spontaneous ignition of the remaining coal not extracted from the highwall mining operations". BHCC

contends it to be common knowledge in the mining industry that oxygen and water are key catalysts in causing spontaneous combustion in coal, whether the coal be in mine openings or in stockpiles. BHCC also believes that the introduction of additional water and air to a coal seam already on fire is especially problematic.

Section MP-6.3 of Addendum MP-6 commits to maintaining highwall mining mapping and subsidence documentation in a subsidence report that will be available for inspection. BHCC objects to the Mine Plan not committing to freely submitting the highwall mining mapping and subsidence documentation report to all owners of surface estate within the Brook Mine permit area. BHCC also objects to the fact that the Subsidence Monitoring and Assessment reporting of Section MP-6.3 does not include mapping, photographing and describing all evidence of surface or underground coal fires occurring within the Brook Mine permit area whenever such evidence becomes available throughout the life of the mining and post-mining periods.

Objection No. 5 – Section MP.1.3; Exhibit MP.1-1

The mine plan on Page MP-5, identifies the “disturbance boundary includes all lands that will be physically and directly disturbed during mining.” Exhibit MP.1-1 shows the disturbance boundary as a dashed orange symbol that outlines an entire pink hatched polygon, identified as “DISTURBANCE FOR YEAR 2016,” located in Sections 15, 21, 22 and 27 of Township 57 North, Range 84 West.

Within the pink hatched polygon, there are existing assets to Big Horn Coal Company. These assets include a rail spur, water tank, pump house, access roads, fences and land owned by BHCC. Also within the pink hatch polygon is the mainline of the Burlington Northern Railroad and associated lands owned by Burlington Northern.

Based on the definition of Disturbance Boundary as indicated on page MP-5, does Brook Mine indeed have the rights to physically and directly disturb these lands within the pink hatched polygon? From the public record, BHCC has not been able to determine whether Brook Mine has secured surface owner consent from all surface owners, including the railroad, for these activities

Objection No. 6 – Section MP.1.5

The mine plan states on Pages MP-5 and continue onto page MP-6 that “Coal will either be temporarily stored in the pit or directly hauled off site.”

There is no mention in the permit as to where the coal will be hauled off site. Additionally there is no known agreement with the County of Sheridan, indicating approval to haul mineral across county roads.

Objection No. 7 – Section MP.1.9

The mine plan states on Pages MP-7 that “The Brook Mine will operate in conjunction with Taylor Quarry (Permit No. SP-757)... The Mine will work with Taylor Quarry to minimize impacts on Taylor Quarry’s operation.”

The following paragraph states "The Brook Mine will not obstruct Big Horn Coal's (Permit 231-T8) Shop, Bridge, and Rail Road Siding as they exist in Big Horn Coal's 2015 Annual Report. An access road equivalent to the existing improved road will be provided if proposed stockpiles or pits should restrict the existing access as shown on Exhibit MP.1-1.

To remain consistent with the statements made in regards to the Taylor Quarry, Big Horn Coal requests that the paragraph referencing Big Horn to be replaced and restated as follows:

"The Brook Mine will operate in conjunction with the Big Horn Mine and that the Brook Mine will work with Big Horn Coal to minimize impacts to Big Horn Coal operations. Specifically, Brook Mine will not obstruct Big Horn Coal's (Permit 213-T8) Shop, Bridge, and Rail Road Siding as they exist in Big Horn Coal's 2015 Annual Report. An access road equivalent to the existing improved road will be provided if proposed stockpiles or pits should restrict the existing access as shown on Exhibit MP.1-1."

Big Horn Coal requests that the text be updated in the previous paragraph to reference the correct permit number for Big Horn Coal Company as (Permit 213-T8).

Objection No. 8 – Section MP.3.1, Section MP.3.1.3 – Roads; Exhibit MP.3-1

As stated in the mine plan on Page MP-11, "Primary roads are any road used for transporting mineral or spoil, or frequently used for access or other purposes for a period in excess of six months, or roads to be retained for postmining use."

WDQ/LQD Rules and Regulations (R&R) Chapter 4, Section 2(j)(vii):

Primary roads.

(A) Certification. The construction or reconstruction of primary roads shall be certified in a report to the Administrator by a registered professional engineer. The report shall indicate that the primary road has been constructed or reconstructed as designed and in accordance with the approved plan. The report shall be available for review at the mine site within 30 days following the completion of construction of each primary road.

Mine plan Exhibit MP.3-1, titled Transportation Network identifies proposed primary haulroads as a solid black line, for the use of transporting mineral or spoil. Yet, there are no haulroads identified in the SE quarter of Section 15, Sections 21, 22 or 27. If the Brook Mine plans to haul mineral or spoil materials from the proposed Trench Cut (TR-1), there should be indication of a primary haul road leaving TR-1, accompanied by a certification of the road design. Unless there are no plans of transporting mineral or spoil from the TR-1 area.

Objection No. 9 – Section MP.4.2.3 – Stockpiles; Exhibit MP.4-3

The mine plan states on Page MP-16, "Stockpiles will not be constructed on unsuitable backfill."

Mine plan Exhibit MP.4-3, Stockpile Locations identifies Topsoil Stockpile TS-1B proposed location within an area known as the Placheck Pit. This area was mined by Big Horn Coal from 1956 through 1963. It is Big Horn Coal's understanding that the proposed area beneath TS-1B is indeed unsuitable material and that topsoil should not be placed in the area as proposed on Exhibit MP.4-3. Additionally, Big Horn Coal is not aware of a surface owner consent document between Brook Mining Company and the Burlington Northern Railroad that would allow the crossing of the mainline with loaded haul trucks.

Objection No. 10 – Section MP.6.1; Exhibit MP.7-1

Exhibit MP.7-1 represents the operational Surface Water and Groundwater Monitoring Program. There are only two downstream surface water monitoring sites, identified as Big Horn No. 2 Reservoir and Big Horn No. 14 Reservoir. The text on page MP-41 of the Mine Plan states "However, the Big Horn No. 2 Reservoir and Big Horn No. 14 Reservoir will be disturbed by facilities disturbance."

Big Horn Coal believes there is inadequate downstream monitoring in the proposed plan. Upon disturbing of Big Horn No. 2 Reservoir and Big Horn No. 14 Reservoir, there will be no sites downstream of the Brook Mine to collect adequate surface and groundwater data to prove that there are no off site environmental impacts from the proposed operation.

Objection No. 11 - Addendum MP-2, Exhibit MP-2

The proposed Sediment Pond SP-8 is located within the current postmine approved Reservoir 14 constructed by BHCC. The bottom elevation of Reservoir 14 is currently at 3575 with a peak elevation at 3589. Sediment Pond SP-8 bottom elevation is proposed at 3585 with a high water elevation proposed at 3590. It is noted below the area capacity table on Exhibit 13, "1. Pond is entirely incised. No Spillway hydraulics are provided."

These elevations lead BHCC to believe the plan for construction of SP-8 will require Reservoir 14 to be completely backfilled prior to construction of SP-8. BHCC requests that the reconstruction and the water quality within Reservoir 14 be restored to pre-mining conditions before final bond release is allowed.

Objection No. 12 – Exhibit MP.4-1; Exhibit MP.4-2; Exhibit MP.4-5; Exhibit RP.5-1

The proposed mine plan indicates that topsoil and overburden removal will occur upon the BHCC Property and within the TR-1 area in years 1 and 2 of operation. Exhibit MP.4-1 shows coal removal to occur over the same first two years of operation. Exhibit MP.4-5 shows the overburden backfill sequence within TR-1 will occur in year 2. Exhibit RP.5-1 shows the topsoil replacement sequence within the BHCC Property occurring in years 12-16.

BHCC objects to this timeline of topsoil replacement upon its property. The BHCC property is the first to be disturbed and the last to be reclaimed. BHCC asks the question as to why every other proposed disturbance area is backfilled and topsoiled within a 2 to 3 year time frame except around the BHCC facilities area. The topsoil replacement timeframe is unacceptable and not contemporaneous in accordance with the Surface Mining Control and Reclamation Act, (SMCRA) and it is requested that the final

reclamation around the BHCC Property be within the 2 to 3 year time frame, similar to all other areas around the mine.

Objection No. 13 – Section MP.1.2.1; Figure MP.1-2.

Section MP.1.2.1 discusses the work that will be done to “prepare for highwall mining” and describes how the “trenches” will be constructed to “create working areas for highwall mining equipment”. This section of the mine plan states that “The highwalls will have a 65-degree bench slope to provide a stable trench environment. Where the trench intersects the burnt Monarch coal seam, a 35-foot wide safety bench will be added. Where the Carney and Masters coal seams come close to convergence, a vertical wall will be used to maintain the desired pit width.” Earlier, under Objection No. 2, BHCC discussed the presence of saturated backfill where trench TR-1 is planned to be excavated. Section MP.1.2.1 does not address in any fashion the fact that trench TR-1 will be constructed in an area containing a significant amount of saturated backfill material. In our opinion, utilizing a 65-degree bench slope in this material will be impossible as the saturated backfill will not safely stand at this angle. Furthermore, no geotechnical information (sampling, testing or analysis) supporting slope stability assumptions for the surface mining or highwall mining operations have been provided in the mine plan. BHCC finds the information regarding highwall bench slope angles presented in MP.1.2.1 to be inadequate given the variability of non-coal material that will be encountered during excavation of trenches in support of the highwall mining operation.

Objection No. 13 – Section MP.1.2.1; Figure MP.1-2.

Section MP.1.2.1 discusses the work that will be done to “prepare for highwall mining” and describes how the “trenches” will be constructed to “create working areas for highwall mining equipment”. This section of the mine plan states that “The highwalls will have a 65-degree bench slope to provide a stable trench environment. Where the trench intersects the burnt Monarch coal seam, a 35-foot wide safety bench will be added. Where the Carney and Masters coal seams come close to convergence, a vertical wall will be used to maintain the desired pit width.” Earlier, under Objection No. 2, BHCC discussed the presence of saturated backfill where trench TR-1 is planned to be excavated. Section MP.1.2.1 does not address in any fashion the fact that trench TR-1 will be constructed in an area containing a significant amount of saturated backfill material. In our opinion, utilizing a 65-degree bench slope in this material will be impossible as the saturated backfill will not safely stand at this angle. Furthermore, no geotechnical information (sampling, testing or analysis) supporting slope stability assumptions for the surface mining or highwall mining operations have been provided in the mine plan. BHCC finds the information regarding highwall bench slope angles presented in MP.1.2.1 to be inadequate given the variability of non-coal material that will be encountered during excavation of trenches in support of the highwall mining operation.

Objection No. 14 – Section MP.4.4.1

It is a well-known fact within the mining industry that the term “Reserves” connotes that the mineral being extracted can be done so economically. BHCC opines that the mining approach presented in the mine plan cannot be done economically. Based on our internal

knowledge; the operating cost for a contractor to perform highwall mining is in the \$8/Ton to \$12/Ton range, which is very close to the domestic spot price for this type of coal. By the time the other costs for the surface mining to develop the highwall mining, transportation, G&A, etc. are taken into consideration, this operation appears to be completely uneconomical.

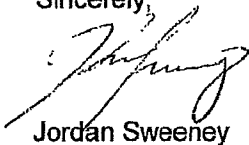
The market for this coal is unclear. The two closest coal mines, Decker and Spring Creek, serve the domestic and international market. Port capacity to the international market is constrained and it is unlikely that Brook Mine will secure access. Domestic demand has been in decline and is significantly oversupplied. Without a definitive market, the Brook Mine is at risk of commencing operations, producing product it cannot sell economically, and reclamation obligations that it cannot fund.

Objection No. 15 – Section MP.15

Objection No. 4 above introduces the fact that the underground mine fires in this area are still burning and have expanded. Section MP.15 does not, in any way, address that the burned areas have expanded. A surface mine excavation that comes in contact with a historic mine fire could be catastrophic in many ways, including: impacting the safety of mine workers, damage to equipment, wildfire initiation, etc. BHCC believes this mine plan has not adequately addressed surface mining activities that will occur near underground mines and insists that the Brook Mine operators must perform the necessary testing and analysis to prove that the proposed mine plan will not be impacted by historic mine fires. Specifically, attachment 1 provided with Objection No. 3 above shows that trench TR-2 is planned very near an area that was burning and is likely still burning. Given that the burned area has likely expanded, this area should not be disturbed at all.

In conclusion, Big Horn Coal Company feels strongly that the Brook Mine permit application should not be approved or deemed technically complete. The mine and reclamation plan lack a significant amount of detail that is required for a technical completeness determination, as stated in the above mentioned objections.

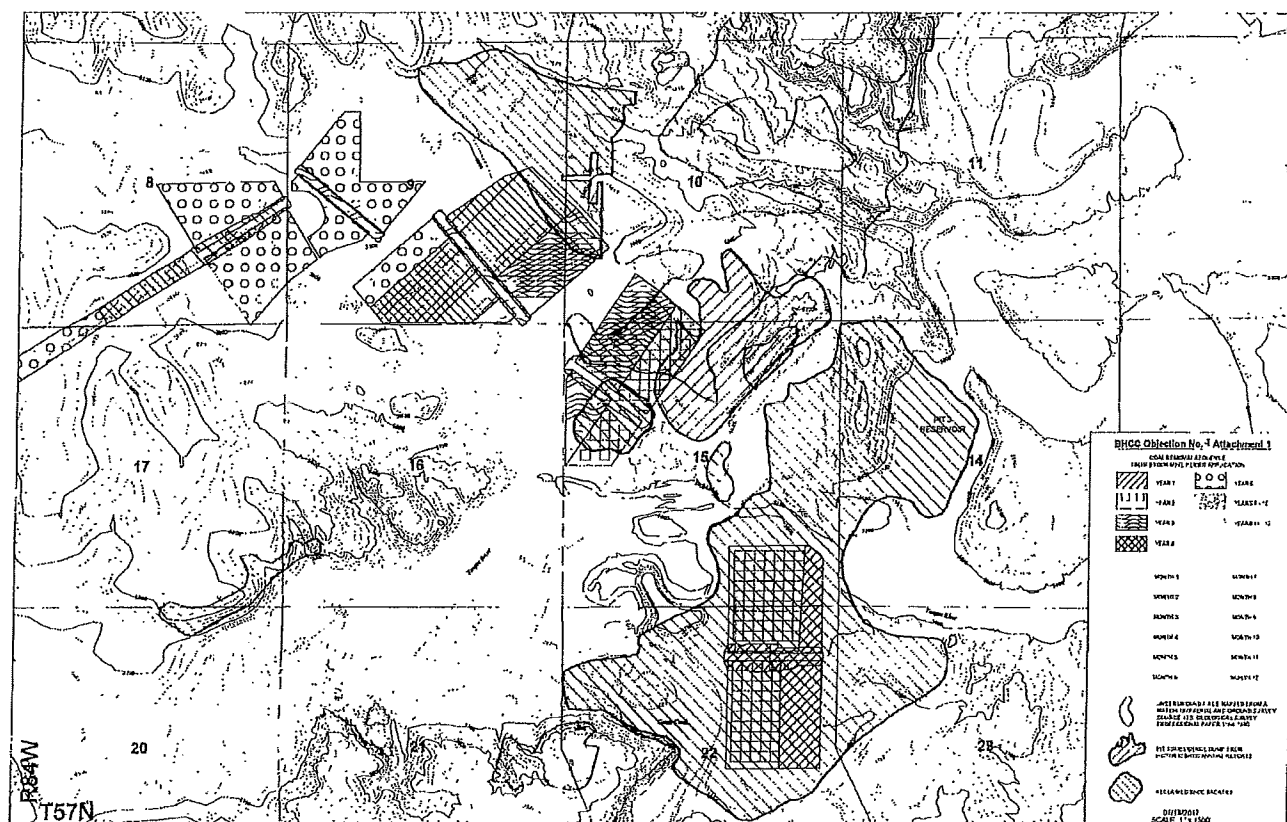
Sincerely,



Jordan Sweeney

General Manager
Big Horn Coal Company

Attachment: BHCC Objection No.4 Attachment 1



more information please visit <http://www.mimecast.com>

From: Shannon Anderson
To: andrew.kuhlmann@wyo.gov; [James LaRock](#); todd.parfitt@wyo.gov; [Jeffrey S. Pope](#); [Isaac Sutphin](#); [Lynne Boomgaarden](#); cgregersen@crowleyfleck.com; jgilbertz@yonkeetoner.com; bpcharlie@wbaccess.net; tlsansonetti@hollandhart.com
Cc: EQC-All@wyo.gov; [Jim Ruby](#)
Subject: EQC Docket No. 17-4801
Date: Wednesday, February 15, 2017 3:32:40 PM
Attachments: [2017 2-15 Brief re EQC jurisdiction.pdf](#)
[Exhibit 1.pdf](#)

Parties:

Please find attached our brief in response to the EQC's Order of last week.

I will be appearing in person at next week's oral arguments. Jim, if you could advise us of the general time parameters & order of the parties for the argument, that would be very helpful.

Thank you,
Shannon

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**BEFORE THE ENVIRONMENTAL QUALITY COUNCIL
STATE OF WYOMING**

IN RE BROOK MINE APPLICATION)
)
 TFN 6 2-025)

DOCKET 17-4801

POWDER RIVER BASIN RESOURCE COUNCIL'S BRIEF REGARDING ENVIRONMENTAL QUALITY COUNCIL JURISDICTION

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STATEMENT OF THE ISSUES

On behalf of itself and its members who submitted objections to the permit application, and pursuant to the Environmental Quality Council's ("EQC") February 7, 2017 Order, Powder River Basin Resource Council ("Resource Council") hereby contends that the EQC does not have proper jurisdiction at this time and that proceedings should be remanded to the Department of Environmental Quality ("DEQ") with instructions to hold the required informal conference, as requested by the Resource Council and other parties.

ARGUMENT

I. Introduction.

On January 27, 2017 over a dozen parties submitted objections to the Brook Mine permit. These parties included the Resource Council and its members who are adjacent landowners and Sheridan County residents concerned about impacts to their property, health, safety, and way of life. On the very next business day, January 30, 2017, the Director wrote to each party that submitted objections to the Brook Mine permit application and notified the objector that the Director was denying requests for an informal conference and was referring the permit application to the EQC "for their review and determination at a contested case hearing." *See, e.g.* Letter from Todd Parfitt to Anton Bocek, Jan. 30, 2017 (available on the EQC Electronic Filing System website for this Docket).

For the reasons discussed below, the Director has a mandatory duty to hold an informal conference and he does not have the authority to refer the matter directly to the EQC. As such, the EQC does not have jurisdiction to hold a contested case hearing at this time and must remand

proceedings back to the Director, with instructions that he must hold an informal conference in the location of the proposed mining operation, as requested by the objecting parties.

Alternatively, should the EQC find that the Director has discretion to deny the request for an informal conference, the EQC should stay proceedings until such time as an objecting party formally petitions for review of the Director's decision and thereby initiates proceedings pursuant to DEQ's Rules of Practice and Procedure.

II. DEQ's Rules Require an Informal Conference.

Wyoming DEQ (and in parts, the EQC) implements the federal Surface Mining Control and Reclamation Act, 30 U.S.C. § 1201, *et seq.* ("SMCRA"). Under SMCRA's system of cooperative federalism, Wyoming's state-authorized program as embodied in the Wyoming Environmental Quality Act ("WEQA") and corresponding state regulations must be "no less stringent" and "no less effective" than the federal program. 30 U.S.C. § 1253; 30 C.F.R. § 730.5.

In the case of requests for an informal conference, SMCRA's requirements provide:

If written objections are filed and an informal conference requested, the regulatory authority shall then hold an informal conference in the locality of the proposed mining, if requested within a reasonable time of the receipt of such objections or request.

30 U.S.C. § 1263(b) (emphasis added). This section creates a clear mandatory obligation on the part of the regulatory authority (in this case DEQ) to hold an informal conference if requested by an objecting party.

These requirements are further spelled out in the Office of Surface Mining Reclamation and Enforcement's ("OSMRE") federal regulations implementing SMCRA:

Informal conferences.

(1) Any person having an interest which is or may be adversely affected by the decision on the application, or an officer or a head of a Federal, State, or local government agency, may request in writing that the regulatory authority hold an informal conference on the application for a permit, significant revision to a permit under § 774.13, or renewal of a

permit under § 774.15. The request shall—(i) Briefly summarize the issues to be raised by the requestor at the conference;(ii) State whether the requestor desires to have the conference conducted in the locality of the proposed operation; and(iii) Be filed with the regulatory authority no later than 30 days after the last publication of the newspaper advertisement required under paragraph (a) of this section.

(2) Except as provided in paragraph (c)(3) of this section, if an informal conference is requested in accordance with paragraph (c)(1) of this section, the regulatory authority shall hold an informal conference within a reasonable time following the receipt of the request. The informal conference shall be conducted as follows:(i) If requested under paragraph (c)(1)(ii) of this section, it shall be held in the locality of the proposed surface coal mining and reclamation operation.(ii) The date, time, and location of the informal conference shall be sent to the applicant and other parties to the conference and advertised by the regulatory authority in a newspaper of general circulation in the locality of the proposed surface coal mining and reclamation operation at least 2 weeks before the scheduled conference.(iii) If requested in writing by a conference requestor at a reasonable time before the conference, the regulatory authority may arrange with the applicant to grant parties to the conference access to the proposed permit area and, to the extent that the applicant has the right to grant access to it, to the adjacent area prior to the established date of the conference for the purpose of gathering information relevant to the conference.(iv) The requirements of section 5 of the Administrative Procedure Act, as amended (5 U.S.C. 554), shall not apply to the conduct of the informal conference. The conference shall be conducted by a representative of the regulatory authority, who may accept oral or written statements and any other relevant information from any party to the conference. An electronic or stenographic record shall be made of the conference, unless waived by all the parties. The record shall be maintained and shall be accessible to the parties of the conference until final release of the applicant's performance bond or other equivalent guarantee pursuant to subchapter J of this chapter.

(3) If all parties requesting the informal conference withdraw their request before the conference is held, the informal conference may be canceled.

30 C.F.R. § 773.6(c) (emphasis added).

For the state program to be “no less stringent” and “no less effective” than the federal program, DEQ’s rules must incorporate these requirements into its state program. To do this, DEQ has a rule of practice and procedure specifically related to an informal conference request on any application for a surface coal mining permit. DEQ’s state regulatory language largely mirrors the federal regulation, and provides that an informal conference shall be held if requested:

Informal Conference. (a) Any request that the Administrator hold an informal conference on any application for a surface coal mining permit shall briefly state the issues to be discussed, whether the requester desires the conference to be held in the locality of the proposed mining operation, and whether access to the proposed permit area is desired. If requested, the Administrator may arrange with the applicant to grant parties to the conference access to the permit area for the purpose of gathering information relative to the conference. The conference shall be held in the locality of the operation or at the state capitol, at the option of the requester, within 20 days after the final date for filing objections unless a different period is stipulated to by the parties. If all parties requesting the conference reach agreement and withdraw their request, the conference need not be held.

DEQ Rules of Practice and Procedure Ch. 3 § 3(a) (emphasis added).¹

These requirements related to “applications for a surface coal mining permit” are distinctive from the general requirements, and corresponding discretion, afforded under W.S. § 35-11-406(k) related to “surface coal mining operations.”² Specifically, while the statute uses the word “may,” the regulations related to new surface coal mining applications use the word “shall.” *Id.* (requiring that “[t]he conference shall be held in the locality of the operation or at the state capitol, at the option of the requester, within 20 days after the final date for filing objections unless a different period is stipulated to by the parties.”).

Courts have clearly and consistently held that when a statute or regulation uses the word “shall,” it imposes a mandatory and nondiscretionary duty to act as the statute or regulation requires. See Kingdomware Technologies, Inc. v. U.S., 136 S.Ct. 1969, 1977 (2016)(“When a statute distinguishes between ‘may’ and ‘shall,’ it is generally clear that ‘shall’ imposes a

¹ The Resource Council was contemplating requesting access to the permit area at the time the informal conference was denied. The Resource Council reserves its right to request a permit area tour if and when the informal conference is granted.

² The Resource Council also contends that the discretion afforded in W.S. § 35-11-406(k) allowing the Director to deny a request for an informal conference related to permit renewals and major modifications of permits is also contrary to SMCRA and its implementing federal regulations, but the EQC need not reach that conclusion here because the provision is not specific to applications for a new surface coal mine permit. Here, the regulations that are specific to the situation before the EQC govern.

mandatory duty.”); U.S. v. Gabaldon, 522 F.3d 1121, 1126 (10th Cir. 2008)(holding that the word “shall” in a regulation indicates a mandatory duty); Bellamy v. Bellamy, 949 P.2d 875, 876 (Wyo. 2002)(“There is no judicial license to pick and choose only those words which promote a particular purpose...Faced with a legislative ‘shall,’ the courts must give effect to the legislative prescription and are without authority to carve out exceptions to the mandate.” (citing State by and Through Dept. of Family Services v. Jennings, 818 P.2d 1149, 1150 (Wyo. 1991)); In re LePage, 18 P.3d 1177, 1180 (Wyo. 2001)(“Where a statute uses the mandatory language ‘shall,’ a court must obey the statute as a court has no right to make the law contrary to what is prescribed by the legislature...The choice of the word ‘shall’ intimates an absence of discretion by the [Department] and is sufficiently definitive of the mandatory rule intended by the legislature.”); See also Wilson v. Tyrell, 246 P.3d 265, 279-80 (Wyo. 2011)(holding that the disclosure requirement in W.R.C.P. 26(a)(2) is mandatory where the rule uses the word “shall.”).³

As discussed above, the rule’s embodiment of SMCRA’s mandatory requirement to hold an informal conference is necessary to ensure that the state program is “no less stringent” and “no less effective” than the federal program. Since the Wyoming DEQ Rules of Practice and Procedure are consistent with SMCRA and specific to informal conferences requested on new coal mine permits, while § 406(k) is neither consistent with SMCRA nor specific to the situation at hand, the regulation – not the statute – should control in this situation. The regulation should

³ Should DEQ argue that its interpretation of its Rule of Practice & Procedure is entitled to deference, it is not. It is a common principle of administrative law is that if the plain meaning of a regulation is clear, an agency is not entitled to deference in interpreting that regulation. See Chevron U.S.A., Inc. v. Natural Resources Defense Council, Inc., 467 U.S. 837 (1984). In this case, the plain meaning of “shall” is clear – DEQ must afford an opportunity for an informal conference.

be interpreted as being consistent with the federal “shall” requirement and should prevail over the inconsistent “may” requirement which is found in the statute.

Since DEQ’s own rules require DEQ to hold an informal conference, the agency must do so here. DEQ cannot lawfully bypass the informal conference stage, and the EQC should remand proceedings back to DEQ to comply with their rules and regulations (and corresponding federal law).

III. An Informal Conference is Required to Afford Public Participation Opportunities.

An informal conference is required, if requested, as it affords affected landowners and other members of the public the opportunity to be heard. The informal conference is akin to a public comment hearing for an air or water permit. It not only affords the opportunity for adversarial presentations by the parties, but also provides a public comment opportunity for any members of the public that wish to attend the conference and provide comments – either positive or negative – about the permit application or the proposed mining operation.⁴

Here, when adjacent landowners and other impacted citizens have requested an informal conference in Sheridan County, the informal conference becomes a critical component of their public participation opportunities. By denying the informal conference, the Director has denied the rights of objecting landowners and citizens – and other members of the public who would have provided comments at the informal conference – who are unable to participate in the expensive and burdensome contested case hearing in Cheyenne the opportunity to be heard. In

⁴ While DEQ’s Rules of Practice and Procedure afford opportunities for intervention in a hearing related to surface coal mining operations, that does not solve the public participation problem presented here because should a party wish to intervene it would still be burdened with participation in a contested case hearing in Cheyenne. There is no “public comment” opportunity at a contested case hearing.

doing so, the Director has bypassed an important public participation opportunity of our surface coal mining laws and regulations.

While there is no Wyoming case law specific to the subject of informal conferences for surface coal mining applications, two cases from other jurisdictions are instructive as they hold that public participation rights, and specifically informal conference opportunities, must be honored to afford impacted citizens' due process rights.

First, a case decided by the Massachusetts Supreme Court arose when a plaintiff was denied an informal conference after the Chelsea Housing Authority terminated the plaintiff's public housing benefits. Rivas v. Chelsea Housing Authority, 982 N.E.2d 1147 (Mass. 2013). The Court in Rivas recognized that the Housing Authority's grievance procedures "shall provide...[an] informal conference" before denying a tenant their property interest in public housing "to give the tenant an opportunity to resolve the dispute before it becomes a formal grievance. It is focused on resolving the problem, not adjudicating the allegation." Id. at 1155. Accordingly, the Rivas Court held that although the plaintiff received two other opportunities to present her case to the relevant authority, "as long as the settlement conference requirement remains in effect, the authority may not arbitrarily disregard it to the prejudice of an individual's rights." Id.

Rivas reinforces that when regulations require that an agency "shall" hold an informal conference, the agency does not have the discretion to deny it because that conference is a necessary part of public participation and due process rights – even if (like here) other more formal complaint resolution processes are available.

Second, the Oklahoma Supreme Court recently struck down a rule that limited participation in informal conferences before the Oklahoma Department of Mines regarding a

pending mine application to residents or property owners within one mile of the proposed mining location. Daffin v. Oklahoma Department of Mines, 251 P.3d 741, 746 (Okla. 2011).⁵

The plaintiff did not live within a mile of the mining site, but he lived within the projected flood plain that would be affected by mining operations and would possibly be damaged by blasting at the mine site. Id. at 745. The Oklahoma Supreme Court held that the informal conference rule under Oklahoma’s Mining Lands Reclamation Act did not provide sufficient procedural due process to the plaintiff to protect his property rights in connection with the pending mine permit application. Id. at 748. In its holding, the Court reasoned that the

...state’s interest in having a smooth administrative process for issuing mining permits is not outweighed by according due process to plaintiff and other property owners by allowing them to appear and be heard at an informal conference. Allowing the current procedures to stand, however, threatens the interest of individual property owners and deprives them of due process. Formality at the conference is not required, but they are entitled to appear and be heard.

Id. Daffin reinforces the importance of informal conferences as an avenue for landowners near a proposed mine operation to protect their property and other legally cognizable interests. Like in Daffin, the DEQ here should not have the discretion to deny the right to appear and be heard at an informal conference, notwithstanding the permissive language of state law, if denying such an opportunity would not sufficiently protect the interests of the Resource Council and other objecting parties.

In summary: (1) DEQ’s Rule of Practice and Procedure should prevail and control over the discretion afforded under § 406(k) because it is consistent with SMCRA’s mandatory requirement to hold an informal conference; (2) the “shall” in SMCRA and federal and state implementing regulations is unambiguous in that it imposes a mandatory duty; and (3)

⁵ While not at issue in the case, the Oklahoma rule also requires that the agency “shall” hold an informal conference if properly requested.

SMCRA's purpose of providing ample public participation and due process opportunities supports a reading that the regulation – not the statute – is controlling as it creates a mandatory requirement for an informal conference.

IV. A Contested Case Hearing Is Not Appropriate At This Time.⁶

Furthermore, there are no provisions in the WEQA or DEQ's Rules of Practice and Procedure that authorize the Director to "refer" an objection to a surface coal mining permit to the EQC for a contested case hearing when that objecting party has requested an informal conference. Section 17(b) of the Rules of Practice and Procedure provide for appeals of "any administrative decision following an informal conference relating to a surface coal mining operation" to the EQC by the applicant or "any person with an interest" but there is no such provision that provides for referrals to the EQC by the Director or Administrator. Similarly, the public notice for the Brook Mine permit application instructs that "The complainants shall have a right of appeal to the Environmental Quality Council where the complaint will be heard a second time."⁷

By remanding these proceedings back to the DEQ for an informal conference, the parties will be able to present information to the DEQ and a decision will be made. While that decision may still result in a contested case hearing, the parties have a right to both public participation opportunities, and have the right to choose to appeal the DEQ decision to the EQC rather than the DEQ referring the matter to the EQC without consultation of the objecting parties.

⁶ By making this argument, in no way is the Resource Council waiving its rights to participate in a contested case hearing should one be held.

⁷ See W.S. §§ 35-11-406(p) which specifies the timing of decisions of the Director after informal conferences and hearings. It should be noted that both § 406(k) and § 406(p) apply to coal and non-coal permit applications and only objectors to coal permit applications are afforded the opportunity to request an informal conference. Therefore, the reading of these statutory sections can be misleading in regards to how they apply specifically to coal permits.

Additionally, an informal conference will benefit the EQC because an informal conference may resolve some of the objections and thus allow the parties to limit the scope of issues (or possibly parties) on appeal to the EQC. Regardless, as discussed above, it is the right of the parties to request an informal conference and to have the right to appeal a decision made in relation to the request for an informal conference to the EQC.

DEQ has once before denied an informal conference requested by the Resource Council. In that case, involving an objection to a renewal permit of the Eagle Butte Mine, the DEQ denied the informal conference request but did not refer the case to the EQC. *See* EQC Docket No. 15-4801, *In Re Eagle Butte (Alpha West)*, available at <https://eqc.wyo.gov/Public/ViewPublicDocument.aspx?DocumentId=10918> . In response to the denial of the informal conference, the Resource Council petitioned the EQC for review of the decision denying the informal conference and requested a contested case hearing on the objections to the permit.⁸ While that hearing was ultimately stayed for other reasons specifically related to Alpha’s bankruptcy proceedings at the time, no party – including DEQ – raised procedural concerns about the petition and how the case found its way to the EQC. Additionally, that proceeding was not treated as a “20 day” hearing under W.S. § 35-11-406(k).

In contrast to that previous case, in these proceedings, DEQ has referred the matter directly to the EQC. This renders its decision to deny the informal conference effectively unreviewable. Additionally, it prevents the objecting parties the opportunity to petition the EQC for review of DEQ’s permitting actions, which is the normal procedure and process for an appeal of a permit. *See* W.S. § 35-11-112(a)(iv) (The EQC shall “[c]onduct hearings in any case contesting the grant, denial, suspension, revocation or renewal of any permit, license,

⁸ *See* <https://eqc.wyo.gov/Public/ViewPublicDocument.aspx?DocumentId=10912>.

certification or variance authorized or required by this act.”).⁹ Here, should DEQ have chosen to deny the request for an informal conference, it should have just told the objecting parties that and should not have referred the matter directly to the EQC. This would have afforded the objecting parties the opportunity to petition for review of DEQ’s decision regarding the informal conference, and the permit application itself, within thirty (30) days of DEQ’s decision, and procedurally would have created a different posture before the EQC as the hearing would not be bound by the “20 day” hearing requirements of W.S. § 35-11-406(k).

Therefore, should the EQC find against us that DEQ had discretion to deny the requests for an informal conference, it should at the very least stay proceedings until such time as an objecting party (or parties) petitions for review and initiates proceedings in accordance with DEQ’s Rules of Practice and Procedure.¹⁰

Conclusion

For the foregoing reasons, the EQC must remand the proceedings back to the DEQ Director with instructions to hold an informal conference pursuant to Chapter 3, Section 3(a) of the Rules of Practice and Procedure.

Dated this 15th day of February, 2017.

/s/ Shannon Anderson

Shannon Anderson
Powder River Basin Resource Council
934 N. Main St., Sheridan, WY 82801
(307) 672-5809
sanderson@powderriverbasin.org

⁹ In such proceedings, the Council has the authority to “[o]rder that any permit, license, certification or variance be granted, denied, suspended, revoked or modified.” *Id.* at § 112(c)(2).

¹⁰ The Resource Council notes that such a deadline would be February 28, 2016. If the EQC does not decide the jurisdictional questions before that time, we ask for a continuance on that deadline.

CERTIFICATE OF SERVICE

I hereby certify that on February 15, 2017, I served a copy of the foregoing **BRIEF REGARDING ENVIRONMENTAL QUALITY COUNCIL JURISDICTION** on the following parties by electronic mail, and through the EQC's electronic filing system, which will send a notice of electronic filing to all counsel and parties of record.

Andrew Kuhlmann
James LaRock
Wyoming Attorney General's Office
andrew.kuhlmann@wyo.gov
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Attorneys for DEQ

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Director, DEQ
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Attorneys for Brook Mining Co., LLC

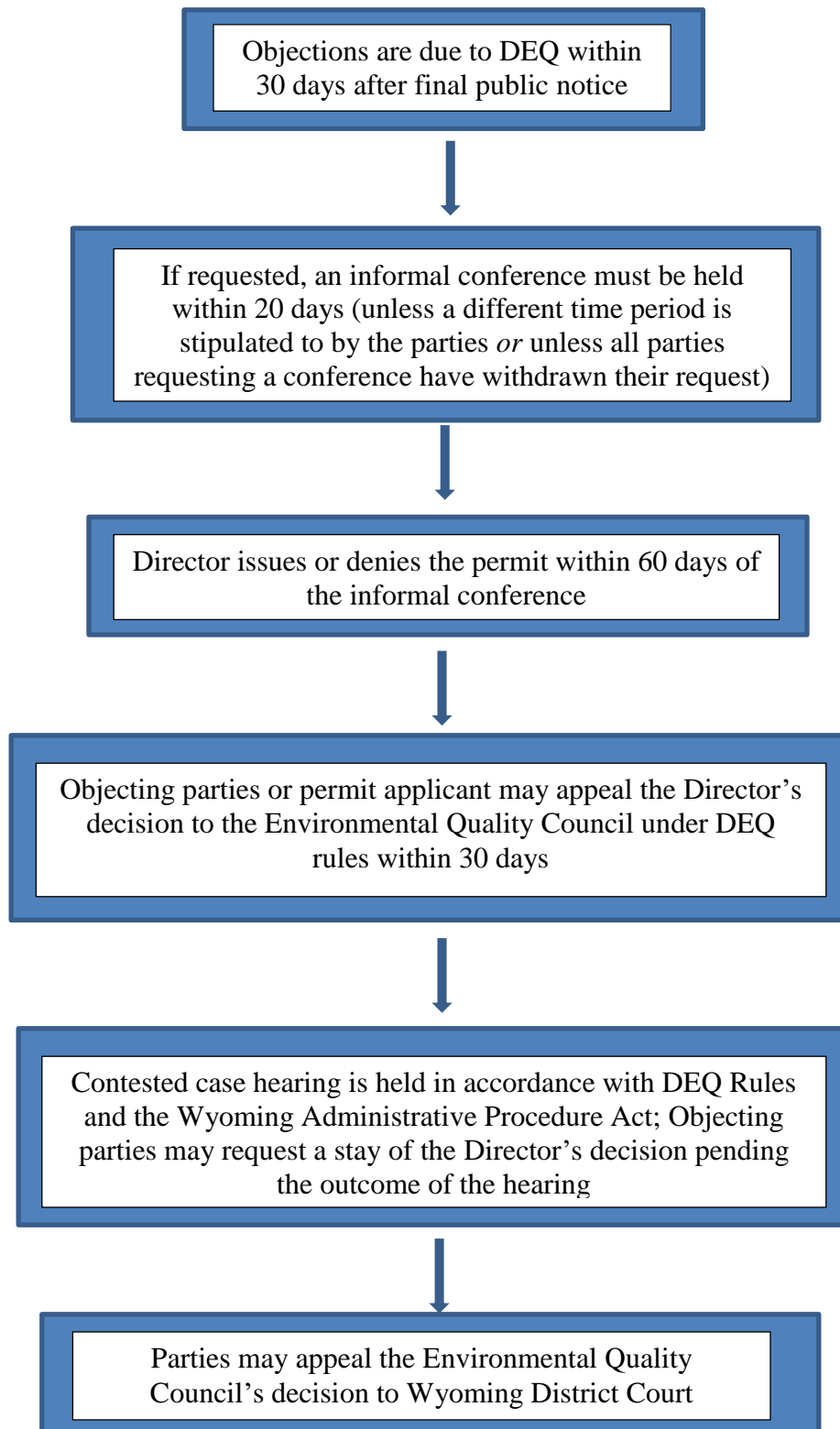
Lynne Boomgaarden,
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Attorneys for Big Horn Coal Co.

Jay Gilbertz
Yonkee & Toner, LLP
jgilbertz@yonkeetoner.com
Attorney for Mary Brezik-Fisher & David Fisher

Brooke Collins
bpcharlie@wbaccess.net

_____/s/Shannon Anderson_____
Shannon Anderson

**Exhibit 1: Diagram of Process for Resolving Objections to a Coal Mine Permit Application
When an Informal Conference is Requested**



From: Jim Ruby
To: [andrew.kuhlmann](#); [Jay Gilbert](#); [Lynne Boomgaarden](#); [Shannon Anderson](#); [Isaac Sutphin](#); [Jeffrey S. Pope \(JSPOpe@hollandhart.com\)](#); [bpcharlie@wbaccess.net](#)
Subject: DEQ motion for clarification
Date: Tuesday, February 07, 2017 1:27:25 PM

Dear Parties:

DEQ filed a motion for clarification of the timeline. With the vacation of the final hearing all of the timelines leading up to that final hearing are also suspended until the issue is resolved outlined in the Order.

There will be an Order issued shortly. Just wanted to give you a quick answer.

Jim

From: Jim Ruby
To: [Jeffrey S. Pope \(JPope@hollandhart.com\)](mailto:JPope@hollandhart.com); [Shannon Anderson](#); [Lynne Boomgaarden](#); [Jay Gilbertz](#); bpcharlie@wbaccess.net; [andrew kuhlmann](#); [James LaRock](#); [Isaac Sutphin](#)
Subject: Brook
Date: Tuesday, February 07, 2017 9:22:39 AM
Attachments: [ORDER VACATING CONTESTED CASE HEARING AND SETTING ORAL ARGUMENT.pdf](#)

Dear Parties:

After further review of the pleadings and 35-11-406(k) Councilman Flitner believes there is an important issue that needs briefing by the parties and thoughtful consideration by the Council without the overreaching pressure of preparing for a contested case proceeding at the same time. Attached is an Order setting forth the following. The final hearing set for the 13th and 14th is cancelled. The parties are given until February 15th to brief the following issue.

Whether the Director's referral of this matter to the Council for a contested case confers jurisdiction over the matter to the Council or is there more that must take place to perfect the appeal?

There will be a teleconference hearing on the 21st at 1:30 p m. for oral arguments on this issue. Any of you who wish to appear in person are welcome to do so. If you are not going to attend in person please send Joe an email with your phone number you will be using to call in.

If you have any questions please feel free to contact me.

BEFORE THE ENVIRONMENTAL QUALITY COUNCIL
STATE OF WYOMING

FILED

FEB 07 2016

IN RE BROOK MINE APPLICATION

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DOCKET 17-4861

Jim Ruby, Executive Secretary
Environmental Quality Council

TFN 6 2-025

**ORDER VACATING CONTESTED CASE HEARING AND SETTING ORAL
ARGUMENT**

Upon review of the recent pleadings filed by Powder River Basin Resource Council, Mary Brezik-Fisher and David Fisher, and Big Horn Coal Company, and upon review of Wyo. Stat. Ann. § 35-11-406(k), I believe the parties need to address the issue of whether there is a proper appeal before the Council at this time necessitating a contested case. As a result, the parties are asked to brief the issue of whether there is a proper appeal before the Council at this time that necessitates a contested case. Because I want to provide the parties time to brief this issue and for the Council to fully consider and decide the issue, the contested case set for February 13 and 14 is vacated.

THEREFORE, the motion hearing and final contested case hearing scheduled for February 13 and 14, 2017 is vacated. Further, the parties have until February 15, 2017, by 5:00 p.m. to file briefs on the issue set forth above. A teleconference before the Council to hear oral arguments on this issue will be held on February 21, 2017, at 1:30 p.m. in Room 1699, 1st Floor West, Herschler Building 122 West 25th St. Cheyenne WY. The parties may participate by phone by providing advance notice to the Council.

SO ORDERED this 7th day of February, 2017.



Tim Flitner, Hearing Officer
Environmental Quality Council

Environmental Quality Council
Room 1714
1st Floor West
Herschler Building
122 West 25th St.
Cheyenne WY 82002

CERTIFICATE OF SERVICE

I, Jim Ruby, certify that at Cheyenne, Wyoming, on the 2nd day of February, 2017, I served a copy of the foregoing **ORDER VACATING CONTESTED CASE HEARING AND SETTING ORAL ARGUMENT** by electronic mail addressed to the following:

Andrew Kuhlmann
Asst. Attorney General
andrew.kuhlmann@wyo.gov

Todd Parfitt
Director, DEQ
Todd.Parfitt@wyo.gov

Alan Edwards
Deputy Director, DEQ
Alan.edwards@wyo.gov

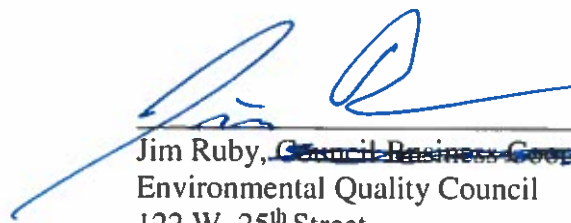
Shannon Anderson
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sanderson@powderriverbasin.org

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jmkelley@hollandandhart.com
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Jay Gilbertz
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Lynn Boomgaarden
Attorney for Big Horn Coal
lboomgaarden@crowleyfleck.com
jwacker@crowleyfleck.com
wdrake@crowleyfleck.com



Jim Ruby, ~~Council Business Coordinator~~
Environmental Quality Council
122 W. 25th Street
Herschler Bldg., Rm. 1714
Cheyenne, WY 82002
Phone: 307-777-7170

From: Shannon Anderson
To: [Jim Ruby](#)
Cc: [Andrew Kuhlmann](#); james.larock@wyo.gov; [Lynne Boomgaarden](#); [Jay Gilbertz](#); [Isaac Sutphin](#); bpcharlie@wbaccess.net; cgregersen@crowleyfleck.com; [Jeffrey S. Pope](#)
Subject: RE: Time for the hearing?
Date: Monday, February 06, 2017 7:00:26 PM

Hello again. Correcting Brooke's email (I just replied all to the email from Jeff) and resending so she will have a copy. Thank you, Shannon

From: Shannon Anderson [mailto:sanderson@powderriverbasin.org]
Sent: Monday, February 06, 2017 6:55 PM
To: 'Jim Ruby'
Cc: 'Andrew Kuhlmann'; 'james.larock@wyo.gov'; 'Lynne Boomgaarden'; 'Jay Gilbertz'; 'Isaac Sutphin'; 'bpcharlies@wbaccess.net'; cgregersen@crowleyfleck.com; 'Jeffrey S. Pope'
Subject: Time for the hearing?

Jim:

Could you please clarify the start time for the hearing on Monday. Our scheduling order says 9 but the public notice says 10. As the public notice is still not posted on the EQC docket website I thought I would confirm that in fact the hearing starts at 10 at the Game & Fish on Monday. And to clarify, do you still want us all there at 8:30 to drop off hard copies of exhibits and other filings (and for responses to any motions filed on Friday)?

Also, can you confirm the general time parameters for the hearing – as we have at least one witness that will be available via video conference, I'd like to have some idea of how long into the evening we will go going. An estimate is fine.

Thank you,
Shannon

Shannon Anderson
Powder River Basin Resource Council
934 N. Main St., Sheridan, WY 82801
307-672-5809 cell: 307-763-0995
sanderson@powderriverbasin.org
Join us at www.powderriverbasin.org
Follow us at <https://twitter.com/PRBResCouncil>

From: Jeffrey S. Pope [mailto:JSPope@hollandhart.com]
Sent: Monday, February 06, 2017 4:40 PM
To: Jim Ruby
Cc: Andrew Kuhlmann; james.larock@wyo.gov; Lynne Boomgaarden; Jay Gilbertz; sanderson@powderriverbasin.org; Isaac Sutphin; bpcharlies@wbaccess.net
Subject: RE: Opening Statements

Thank you Jim.

From: Jim Ruby [mailto:jim.ruby@wyo.gov]
Sent: Monday, February 6, 2017 4:38 PM
To: Jeffrey S. Pope <JSPope@hollandhart.com>

Cc: Andrew Kuhlmann <andrew.kuhlmann@wyo.gov>; james.larock@wyo.gov; Lynne Boomgaarden <lboomgaarden@crowleyfleck.com>; Jay Gilbertz <JGilbertz@yonkeetoner.com>; sanderson@powderriverbasin.org; Isaac Sutphin <INSutphin@hollandhart.com>; bpcharlies@wbaccess.net

Subject: Re: Opening Statements

Hi Jeff:

At this point the hearing officer will hold everyone to 5 minutes on openings. That is subject to further discussions but that is what is currently planned.

Jim

On Mon, Feb 6, 2017 at 4:32 PM, Jeffrey S. Pope <JSPope@hollandhart.com> wrote:

Hi Jim,

It occurred to us that we did not discuss opening statements during the scheduling conference. We would like to do them. Does the Council plan to allow them?

If so, how long would each party get? Recognizing that the parties plan to present a lot of information in a short time, we would suggest 5 minutes per party.

Thank you,

Jeff

Jeffrey S. Pope

Associate

Holland & Hart LLP

2515 Warren Ave., Suite 450

Cheyenne, WY 82001

Phone [\(307\) 778-4200](tel:(307)778-4200)

Fax [\(307\) 778-8175](tel:(307)778-8175)

E-mail: jspope@hollandhart.com

CONFIDENTIALITY NOTICE: This message is confidential and may be privileged. If you believe that this email has been sent to you in error, please reply to the sender that you received the message in error; then please delete this e-mail. Thank you.

E-Mail to and from me, in connection with the transaction of public business, is subject to the Wyoming Public Records Act and may be disclosed to third parties.

From: Shannon Anderson
To: [Jim Ruby](#)
Cc: [Andrew Kuhlmann](#); james.larock@wyo.gov; [Lynne Boomgaarden](#); [Jay Gilbertz](#); [Isaac Sutphin](#); bpcharlies@wbaccess.net; cgregersen@crowleyfleck.com; [Jeffrey S. Pope](#)
Subject: Time for the hearing?
Date: Monday, February 06, 2017 6:55:10 PM

Jim:

Could you please clarify the start time for the hearing on Monday. Our scheduling order says 9 but the public notice says 10. As the public notice is still not posted on the EQC docket website I thought I would confirm that in fact the hearing starts at 10 at the Game & Fish on Monday. And to clarify, do you still want us all there at 8:30 to drop off hard copies of exhibits and other filings (and for responses to any motions filed on Friday)?

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Shannon

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Join us at www.powderriverbasin.org
Follow us at <https://twitter.com/PRBResCouncil>

From: Jeffrey S. Pope [mailto:JSPope@hollandhart.com]
Sent: Monday, February 06, 2017 4:40 PM
To: Jim Ruby
Cc: Andrew Kuhlmann; james.larock@wyo.gov; Lynne Boomgaarden; Jay Gilbertz; sanderson@powderriverbasin.org; Isaac Sutphin; bpcharlies@wbaccess.net
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Thank you Jim.

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Sent: Monday, February 6, 2017 4:38 PM
To: Jeffrey S. Pope <JSPope@hollandhart.com>
Cc: Andrew Kuhlmann <andrew.kuhlmann@wyo.gov>; james.larock@wyo.gov; Lynne Boomgaarden <lboomgaarden@crowleyfleck.com>; Jay Gilbertz <JGilbertz@yonkeetoner.com>; sanderson@powderriverbasin.org; Isaac Sutphin <INSutphin@hollandhart.com>; bpcharlies@wbaccess.net
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If so, how long would each party get? Recognizing that the parties plan to present a lot of information in a short time, we would suggest 5 minutes per party.

Thank you,

Jeff

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E-Mail to and from me, in connection with the transaction of public business, is subject to the Wyoming Public Records Act and may be disclosed to third parties.

From: Shannon Anderson
To: andrew.kuhlmann@wyo.gov; [James LaRock](#); todd.parfitt@wyo.gov; [Jeffrey S. Pope](#); [Isaac Sutphin](#); [Lynne Boomgaarden](#); cgregersen@crowleyfleck.com; jgilbertz@yonkeetoner.com; bpcharlie@wbaccess.net
Cc: EQC-All@wyo.gov
Subject: Re: EQC Docket No. 17-4801
Date: Monday, February 06, 2017 5:00:24 PM
Attachments: [2017 2-6 Motion to Remand.pdf](#)
[2017 2-6 Designation of expert witnesses.pdf](#)
[wiremanvDec2016.pdf](#)
[2017 2-6 Discovery Request to DEQ.pdf](#)
[2017 2-6 Discovery Request to Ramaco.pdf](#)

Parties:

Please find attached:

- 1) Designation of Expert Witnesses
- 2) Motion to Remand to the DEQ Director
- 3) FIRST SET OF INTERROGATORIES AND REQUESTS FOR PRODUCTION OF DOCUMENTS for DEQ
- 4) First set of Interrogatories and requests for production of documents for Brook

Should you have any questions on the attached, please do not hesitate to reach out. My office and cell numbers are included below.

Regards,
Shannon

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934 N. Main St., Sheridan, WY 82801
307-672-5809 cell: 307-763-0995
sanderson@powderriverbasin.org
Join us at www.powderriverbasin.org
Follow us at <https://twitter.com/PRBResCouncil>

life. The next business day, on January 30, 2017, the Director wrote to each party that submitted objections to the Brook Mine permit application and notified the objector that the Director was denying requests for an informal conference and was referring the permit application to the EQC “for their review and determination at a contested case hearing.” *See, e.g.* Letter from Todd Parfitt to Anton Bocek, Jan. 30, 2017 (available on the EQC Electronic Filing System website for this Docket).

For the reasons discussed below, the Director has a mandatory duty to hold an informal conference and he does not have the authority to refer the matter directly to the EQC. As such, the EQC does not have jurisdiction to hold a contested case hearing at this time and must remand proceedings back to the Director, with instructions that he must hold an informal conference in the location of the proposed mining operation, as requested by the objecting parties.

Alternatively, should the EQC find that the Director has discretion to deny the request for an informal conference, the EQC should stay proceedings until such time as an objecting party formally petitions for review of the Director’s decision and thereby initiates proceedings pursuant to DEQ’s Rules of Practice and Procedure.

ARGUMENT

I. DEQ’s Rules Require an Informal Conference.

Wyoming DEQ (and in parts, the EQC) implements the federal Surface Mining Control and Reclamation Act, 30 U.S.C. § 1201, *et seq.* (“SMCRA”). Under SMCRA’s system of cooperative federalism, Wyoming’s state-authorized program as embodied in the Wyoming Environmental Quality Act (“WEQA”) and corresponding state regulations must be “no less stringent” and “no less effective” than the federal program. 30 U.S.C. § 1253; 30 C.F.R. § 730.5.

In the case of requests for an informal conference, SMCRA’s requirements provide:

If written objections are filed and an informal conference requested, the regulatory authority *shall* then hold an informal conference in the locality of the proposed mining, if requested within a reasonable time of the receipt of such objections or request.

30 U.S.C. § 1263(b) (emphasis added). This section creates a clear mandatory obligation on the part of the regulatory authority (in this case DEQ) to hold an informal conference if requested by an objecting party. For the state program to be “no less stringent” and “no less effective” than the federal program, DEQ’s rules must incorporate these requirements into its state program.

To meet these requirements, DEQ has a rule of practice and procedure specifically related to an informal conference request on any application for a surface coal mining permit:

Informal Conference. (a) Any request that the Administrator hold an informal conference on any application for a surface coal mining permit shall briefly state the issues to be discussed, whether the requester desires the conference to be held in the locality of the proposed mining operation, and whether access to the proposed permit area is desired. If requested, the Administrator may arrange with the applicant to grant parties to the conference access to the permit area for the purpose of gathering information relative to the conference. The conference *shall* be held in the locality of the operation or at the state capitol, at the option of the requester, within 20 days after the final date for filing objections unless a different period is stipulated to by the parties. If all parties requesting the conference reach agreement and withdraw their request, the conference need not be held.

DEQ Rules of Practice and Procedure Ch. 3 § 3(a) (emphasis added).

These requirements related to “applications for a surface coal mining permit” are distinctive from the general requirements, and corresponding discretion, afforded under W.S. § 35-11-406(k) related to “surface coal mining operations.”² Specifically, while the statute uses the word “may,” the regulations related to new surface coal mining applications use the word “shall.” *Id.* (requiring that “[t]he conference shall be held in the locality of the operation or at the

² The Resource Council also contends that the discretion afforded in W.S. § 35-11-406(k) allowing the Director to deny a request for an informal conference is also contrary to SMCRA, but the EQC need not reach that conclusion here because the provision is not specific to applications for a new surface coal mine permit. Here, the regulations that are specific to the situation before the EQC governs.

state capitol, at the option of the requester, within 20 days after the final date for filing objections unless a different period is stipulated to by the parties.”). As discussed above, the rule’s embodiment of SMCRA’s mandatory requirement to hold an informal conference is necessary to ensure that the state program is “no less stringent” and “no less effective” than the federal program.

Since DEQ’s own rules require DEQ to hold an informal conference, the agency must do so here. DEQ cannot lawfully bypass the informal conference stage, and the EQC should remand proceedings back to DEQ to comply with their rules and regulations (and corresponding federal law).

II. An Informal Conference is Required to Afford Public Participation Opportunities.

An informal conference is required, if requested, as it affords affected landowners and other members of the public the opportunity to be heard. The informal conference is akin to a public comment hearing for an air or water permit. It not only affords the opportunity for adversarial presentations by the parties, but also provides a public comment opportunity for any members of the public that wish to attend the conference and provide comments – either positive or negative – about the permit application or the proposed mining operation.³

Here, when adjacent landowners and other impacted citizens have requested an informal conference in Sheridan County, the informal conference becomes a critical component of their public participation opportunities. By denying the informal conference, the Director has denied the rights of objecting landowners and citizens – and other members of the public who would

³ While DEQ’s Rules of Practice and Procedure afford opportunities for intervention in a hearing related to surface coal mining operations, that does not solve the public participation problem presented here because should a party wish to intervene it would still be burdened with participation in a contested case hearing in Cheyenne. There is no “public comment” opportunity at a contested case hearing.

have provided comments at the informal conference – who are unable to participate in the expensive and burdensome contested case hearing in Cheyenne the opportunity to be heard. In doing so, the Director has bypassed an important public participation opportunity of our surface coal mining laws and regulations.

III. A Contested Case Hearing Is Not Appropriate At This Time.⁴

Furthermore, there are no provisions in the WEQA or DEQ's Rules of Practice and Procedure that authorize the Director to "refer" an objection to a surface coal mining permit to the EQC for a contested case hearing when that objecting party has requested an informal conference. Section 17(b) of the Rules of Practice and Procedure provide for appeals of "any administrative decision following an informal conference relating to a surface coal mining operation" to the EQC by the applicant or "any person with an interest" but there is no such provision that provides for referrals to the EQC by the Director or Administrator. Similarly, the public notice for the Brook Mine permit application instructs that "The complainants shall have a right of appeal to the Environmental Quality Council where the complaint will be heard a second time."⁵

By remanding these proceedings back to the DEQ for an informal conference, the parties will be able to present information to the DEQ and a decision will be made. While that decision may still result in a contested case hearing, the parties have a right to both public participation opportunities, and have the right to *choose* to appeal the DEQ decision to the EQC rather than

⁴ By making this argument, in no way is the Resource Council waiving its rights to participate in a contested case hearing should one be held.

⁵ See W.S. §§ 35-11-406(p) which specifies the timing of decisions of the Director after informal conferences and hearings. It should be noted that both § 406(k) and § 406(p) apply to coal and non-coal permit applications and only objectors to coal permit applications are afforded the opportunity to request an informal conference. Therefore, the reading of these statutory sections can be misleading in regards to how they apply specifically to coal permits.

the DEQ referring the matter to the EQC *without* consultation of the objecting parties.

Additionally, an informal conference will benefit the EQC because an informal conference may resolve some of the objections and thus allow the parties to limit the scope of issues (or possibly parties) on appeal to the EQC. Regardless, as discussed above, it is the right of the parties to request an informal conference *and* to have the right to appeal a decision made in relation to the request for an informal conference to the EQC.

DEQ has once before denied an informal conference requested by the Resource Council. In that case, involving an objection to a renewal permit of the Eagle Butte Mine, the DEQ denied the informal conference request but did not refer the case to the EQC. *See* EQC Docket No. 15-4801, *In Re Eagle Butte (Alpha West)*, available at <https://eqc.wyo.gov/Public/ViewPublicDocument.aspx?DocumentId=10918> . In response to the denial of the informal conference, the Resource Council petitioned the EQC for review of the decision denying the informal conference and requested a contested case hearing on the objections to the permit.⁶ While that hearing was ultimately stayed for other reasons, no party – including DEQ – raised procedural concerns about the petition and how the case found its way to the EQC. Additionally, that proceeding was not treated as a “20 day” hearing under W.S. § 35-11-406(k).

In contrast to that previous case, in these proceedings, DEQ has referred the matter directly to the EQC. This renders its decision to deny the informal conference effectively unreviewable. Additionally, it prevents the objecting parties the opportunity to petition the EQC for review of DEQ’s permitting actions, which is the normal procedure and process for an appeal

⁶ *See* <https://eqc.wyo.gov/Public/ViewPublicDocument.aspx?DocumentId=10912>.

of a permit.⁷ Here, should DEQ have chosen to deny the request for an informal conference, it should have just told the objecting parties that and should not have referred the matter directly to the EQC. This would have afforded the objecting parties the opportunity to petition for review of DEQ's decision regarding the informal conference, and the permit application itself, within thirty (30) days of DEQ's decision, and procedurally would have created a different posture before the EQC as the hearing would not be bound by the "20 day" hearing requirements of W.S. § 35-11-406(k).

Therefore, should the EQC find against us that DEQ had discretion to deny the requests for an informal conference, it should at the very least stay proceedings until such time as an objecting party (or parties) petitions for review and initiates proceedings in accordance with DEQ's Rules of Practice and Procedure.

Conclusion

For the foregoing reasons, the EQC must remand the proceedings back to the DEQ Director with instructions to hold an informal conference pursuant to Chapter 3, Section 3(a) of the Rules of Practice and Procedure.

Dated this 6th day of February, 2017.

/s/ Shannon Anderson

Shannon Anderson
Powder River Basin Resource Council
934 N. Main St., Sheridan, WY 82801
(307) 672-5809
sanderson@powderriverbasin.org

⁷ Even in the case of non-coal mine permit challenges, where an informal conference is not afforded, the objecting parties choose to request a hearing before the EQC.

CERTIFICATE OF SERVICE

I hereby certify that on February 6, 2017, I served a copy of the foregoing **MOTION TO REMAND PROCEEDINGS TO THE DEQ DIRECTOR** on the following parties by electronic mail, and through the EQC's electronic filing system, which will send a notice of electronic filing to all counsel and parties of record.

Andrew Kuhlmann
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Attorneys for DEQ

Todd Parfitt
Director, DEQ
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Attorneys for Big Horn Coal Co.

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Brooke Collins
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**BEFORE THE ENVIRONMENTAL QUALITY COUNCIL
STATE OF WYOMING**

IN RE BROOK MINE APPLICATION)
) **DOCKET 17-4801**
TFN 6 2-025)

DESIGNATION OF EXPERT WITNESSES

The Powder River Basin Resource Council hereby designates the following expert witnesses who will appear in the above-captioned proceedings, if time allows for them to testify. A full witness list and exhibits will be provided pursuant to the scheduling order on February 10, 2017.

1. Gennaro G. Marino Ph.D., P.E., D.GE

Dr. Marino will present testimony on the subsidence risk presented by the mine and reclamation plan and will identify deficiencies in the permit application related to subsidence. A copy of Dr. Marino's report is attached to the Resource Council's objections. Dr. Marino will present the opinions discussed in the report and other opinions related to subsidence he has drawn from reviewing the permit application.

Dr. Marino is the President of Marino Engineering Associates, Inc. with an office at 1370 McCausland Ave, St. Louis, MO 63117. Dr. Marino is a registered Professional Engineer in Wyoming. Dr. Marino's bio and list of professional qualifications is available at <http://www.meacorporation.com/leadership.php>. This information states, in part, that Dr. Marino

has given expert testimony on numerous occasions within his range of engineering experience. Also during the course of his career he has authored over 90 articles and research publications on advanced engineering projects and authored a textbook: Earthquake Damage: Inspection, Evaluation and Repair.

Dr. Marino will be compensated by the Resource Council for his time and travel expenses.

Dr. Marino will be available to testify in person at the hearing. Given his out of state travel and the accommodations to his schedule he is making to be available in person, we ask that the EQC accommodate him and allocate time during the hearing for him to testify in person while he is present in Cheyenne.

2. Mickel Wireman M.S., P.G.

Mr. Wireman will provide opinions related to the hydrology objections raised by the Resource Council, including the sufficiency of the water monitoring plan, impacts to the hydrologic balance within and outside the permit area, and impacts to alluvium and alluvial valley floors. He has not prepared an expert report and will base his opinions on his review of the permit application.

Mr. Wireman is the President of Granite Ridge Groundwater, LLC in Boulder, Colorado, and he is a former hydrogeologist and National Groundwater Expert with the Environmental Protection Agency's Region VIII Office in Denver. A copy of his *curriculum vitae* is attached.

Mr. Wireman has let his Wyoming geologist registration lapse, but he will be associating with a registered Wyoming geologist for the purposes of his testimony.

Mr. Wireman will be compensated by the Resource Council for his time.

Mr. Wireman will be available to testify in person at the hearing in Cheyenne.

3. Stu Levit, M.S.

Mr. Levit will present testimony on the inadequacies in the reclamation bond amount. Mr. Levit does not have an expert report; however, his opinions related to the reclamation bond amount were incorporated into the Resource Council's objections.

Mr. Levit is an employee of Center for Science in Public Participation with an office at 224 North Church Avenue, Bozeman, MT 59715. Mr. Levit formerly worked for the Montana Department of State Lands, Abandoned Mine Reclamation Bureau as a Land Reclamation Specialist, where he designed mine reclamation project plans. Mr. Levit's professional qualifications are available for review at <http://www.csp2.org/expertise>.

Mr. Levit is available to testify on February 13th via video conference, but he is unavailable to testify on February 14th. Please contact us so we can arrange the video conference logistics for Mr. Levit in advance of the hearing.

Dated this 6th day of February, 2017.

/s/ Shannon Anderson

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CERTIFICATE OF SERVICE

I hereby certify that on February 6, 2017, I served a copy of the foregoing **DESIGNATION OF EXPERT WITNESSES** on the following parties by electronic mail, and through the EQC's electronic filing system, which will send a notice of electronic filing to all counsel and parties of record.

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Brooke Collins
bpcharlie@wbaccess.net

/s/Shannon Anderson
Shannon Anderson

CURRICULUM VITAE

MICKEL WIREMAN

Prepared: December, 2016

EDUCATION

Bachelor of Science, Geology, 1976, Western Michigan University, Kalamazoo, MI

Master of Science, Hydrogeology, 1987, Western Michigan University, Kalamazoo, MI

Post MS: Advanced Ground-Water Hydrology, Colorado School of Mines, Geochemistry of Ground-Water Systems (USGS advanced short course), numerous ground-water related classes and seminars on various aspects of hydrogeology, ground-water protection, remediation and management

PROFESSIONAL EMPLOYMENT RECORD

2014 – present

President – Granite Ridge Groundwater, LLC

Provides scientific / technical consultation to a variety of clients

Active member of Sub-Committee on Groundwater (DOI Advisory Committee on Water Information)

Director – GWPC Ground Water Research and Education Foundation

Member – Western Michigan University Geosciences Department Advisory Council

Adjunct Instructor – Metropolitan State University, Global Water Concerns

Past consultant to The World Bank - Worked on hydrologic restoration project in lower Yangzi River basin and mine closure in Romania

Past President – US Chapter of International Association of Hydrogeologists

Past Director – NGWA Science and Engineering Division

1987 to 2014

National Ground-Water Expert, US EPA Region VIII. Provided scientific and technical support to EPA programs (including Superfund, RCRA, Enforcement, NEPA and Water programs), other Federal agencies, International programs and ground-water protection / management programs in several western states. Extensive experience in hydrogeologic characterization and remediation of hardrock mine sites, hydrogeologic aspects of uranium mining and oil and gas development, hydrology of mountain watersheds, DNAPL sites, fractured rock settings, nutrients in ground water, ground-water monitoring, ground-water sensitivity / vulnerability assessments, source-water / wellhead protection. Position included working closely with policy makers, decision makers and attorneys.

Teaching – Currently teaching Basic Principles of Groundwater and Contaminant Transport for Ground- Water Protection Council. Has served as adjunct professor at Metropolitan State College in Denver where he taught a class in Contaminant hydrology. Founder and co-instructor of EPA class entitled Basic Principles of Hydrogeology and Contaminant Hydrology. This class was offered to State DEQ and Environmental protection staff and was delivered 12 times in eight states. He also teaches classes for the National Ground -Water Association and Geological Society of America. Has developed and taught workshops in Eastern Europe and Middle East.

Expert testimony - Has provided expert testimony numerous times in federal court, State court, State Water Quality Control Commission and State Water court and before the Nuclear Regulatory Commission. Cases involved water rights issues, violations of State and Federal environmental laws / permits and re-licensing of in-situ uranium mining operations.

International Experience – Has worked extensively in Eastern Europe (Estonia, Ukraine, Romania, and the Republic of Georgia), Russia, the Middle East (Oman, Bahrain and Iraq), and China as a Technical Expert with EPA Office of External Affairs, EPA Office of Research and Development, US AID and The World Bank.

1981-1986

Hydrogeologist, Leonard Rice Consulting Water Engineers, Inc. Responsible for ground-water geology studies including interpretation and evaluation of hydrogeologic systems, aquifer testing, water supply development, water well drilling, ground-water contamination and monitoring and western water rights. Duties required collection and analyses of data, report preparation and expert testimony.

AFFILIATIONS

Colorado Ground-Water Association

Geological Society of America
National Ground Water Association
International Association of Hydrogeologists – Past Chair US National Chapter
Member of the Subcommittee on Ground Water – Advisory Committee on Water Information
Member, Board of Directors, NGWA Science and Engineering Division
Member – Board of Directors – Groundwater Research and Education Foundation (Ground Water Protection Council)

PUBLICATIONS

2015 – Wireman, Mike, *Development and Implementation of a National Groundwater Monitoring Network*, Guest editorial - Groundwater Monitoring and Remediation, NGWA

2014, in press, Cowie, Rory, Williams, Mark W., Wireman, Mike, Runkle, Robert L., *Use of natural and artificial tracers to guide de targeted remediation effort in an acid mine drainage system, Colorado Rockies, USA*, Water 2013

2011, Mirtskhulava, Merab, Wireman, Mike, *Report of Findings –Evaluation of mining-related metals contamination and ecological and human health risks associated with manganese mining and processing in Chiatura, Georgia*

2011, Caruso, Brian S., Mirtskhulava, Merab, Wireman, Mike, Schroeder, William, Griffin, Susan, *Effects of Manganese Mining on Water Quality in the Caucasus Mountains, Republic of Georgia*, Mine Water and Environment, DOI 10.1007/s 10230-011-0163-3, 13p

2011, Wireman, M., Stover, B., *Hard-rock Mining and Water Resources*, Ground Water News and Views, Ground Water, NGWA

2011, Moore, J., Wireman, M., Carillo-Rivera, J.J., *Field Hydrogeology –A Guide for Site Investigations and Report Preparation*, CRC Press, Taylor and Francis Group

2010, Wireman, Mike., Griffin, S. Mirtskhulava, M., Schroeder, W., *Water Resources Characterization and Risk Assesment: Tchiatura mining district, Republic of Georgia*, Georgia Chemical Journal. V.10.N 4, P-23-29

2010, Moore, J., Wireman, M., LaMoreaux, P.E., Summers, P., *A Field Guide For Characterization And Evaluation Of Public Water Supply Springs*, US EPA, in preparation

2010, Kornilovich, B., Wireman, M., Caruso, B., Koshik, Y., *The Use of Permeable Reactive Barrier Against Contaminated Groundwater In Ukraine*, Central European Journal of Occupational and Environmental Medicine 15(1-2)

2008, Penoyer, P., Rosenlieb, G, Noon, K., Wireman, M., Thackston, J., Recommendations for Retoration and Rehabilitation of Turbidity and Sediment Impacts to the Sylvan Pass Hydrologic System, National Park Service, Natural Resource Report NPS/NRPC/NRR – 2008/054, 44p.

2007, Wireman, Mike, United State Department of Agriculture, Forest Service, Technical guide to Managing Ground Water Resources, Wireman was one of several authors.

2005, Hermann, K., Wireman, Mike, editors, Aquatic Assessment of Willow Creek Watershed – US EPA Region 8

2002, Hazen, J.M., Williams, M.W., Stover, B. and Wireman, Mike, Characterization of Acid Mine Drainage Using A Combination Of Hydrometric, Chemical And Isotopic Analyses, Mary Murphy Mine, Colorado, Environmental Geochemistry and Health

2001, Wireman, Mike, Potential Water Quality Impacts of Hardrock Mining, Summer edition of Ground-Water Monitoring and Remediation, NGWA, Dublin, OH

2002, Wireman, Mike, Tracing Techniques, Section 5.7 in Moore, J.E., Field Hydrogeology - A guide for Site Investigations and Report Preparation, Lewis Publishers

2000, Wireman, Mike, Effects of Mining on Water Quality, Chapter 18, Hardock Mining and Chapter 19 Coal Mining, in Drinking Water From Forests and Grasslands, A Synthesis of the Scientific Literature, George E. Dissmeyer, Editor, USDA Forest Service, Southern Research Station, Asheville, North Carolina

2000, Wireman, Mike, South Platte Valley-Fill Aquifer, Chapter 5 - Colorado Ground-Water Atlas, Andrea Aiken, et.al, Editors, Colorado Ground-Water Association, Lakewood, CO

1999, Wireman, Mike, Wyoming Ground-Water Vulnerability Assessment Handbook: Volume I - Background, Model Development and Aquifer Sensitivity, University of Wyoming Spacial Data and Visualization Center

1999, Wireman, Mike, Wyoming Ground-Water Vulnerability Assessment Handbook: Volume II - Assessing Ground Water Vulnerability to pesticides, University of Wyoming Spacial Data and Visualization Center

1998, Wireman, Mike, Land Uses Which Affect Ground-Water Management - Greater Denver Area, USEPA

1997, Wireman, Mike, Determining the Risk to Public Water Supply Wells from Infective Microorganisms, NGWA Water Well Journal

1997, Wireman, Mike, Investigation of Hydrogeologic Mapping to Delineate protection Zones Around Springs, EPA/600/R-97/023, US EPA ORD, Cincinnati, OH

1997, Wireman, Mike, The Use of Ground Water Sensitivity Assessments for Purposes of the Ground Water Disinfection Rule, Ground- Water Monitoring Review, NGWA

1997, Wireman, Mike, Chalk Creek Project, Report on Results of Investigation – Mary Murphy Mine – Groundwater Hydrology Characterization Study, Chaffee County, CO, EPA Region VIII Headwaters Initiative Assistance Agreement No. MM998404-01-1

1995, Hearne, Glenn, Wireman, Mike, Campbell, Angus, Vulnerability of the Uppermost Aquifer to Contamination in the Greater Denver Area, Colorado, USGS WRI 92-4143

1989, Wireman, Mike, Bibliography of Geology and Ground Water Geology for the Denver Basin, Colorado, Colorado Division of Water Resources< Colorado Department of Natural Resources

1987, Wireman, Mike, Nitrate Pollution of Ground Water in Glacial Sediments Underlying a Fertigated Site, Master's Thesis, Western Michigan University, Kalamazoo, MI

1982, Wireman, Mike, Hydrogeology of the Western Upper Peninsula of Michigan, Western Michigan university Geology Department, EPA Underground Injection Control Program

3. “Describe” means to specify in detail and to particularize the content of the answer to the question and not just to state the reply in summary or outline fashion, including all pertinent facts about the fact, event, or situation in question, including but not limited to:

- (a) the time, date, and place;
- (b) identification of all persons present or involved;
- (c) identification of all oral or written communications made during the event or situation;
- (d) a detailed description of all actions taken.

4. “Document(s)” is used in the broadest sense contemplated by W.R.C.P. 34. It means all records and other tangible forms of expression, including information in electronic, magnetic, or photographic form, in your possession, custody, or control, including drafts and any copies thereof that contain notes or otherwise differ from the original, however many, by whomever created, however prepared, circulated, sent, received, dated or used, produced or stores (manually, mechanically, electronically, or otherwise), including but not limited to books, papers, files, modeling files and data, notes, correspondence, memoranda, reports, writings, drawings, photographs, telegrams, facsimiles (faxes), telephone logs, contracts, agreements, calendars, datebooks, worksheets, summaries, magnetic tapes, data files, other data compilations from which information can be obtained, electronic mail, disks, diskettes, disk packs, and other electronic media, microfilm, microfiche, and storage devices. It includes all material that relates or refers in whole or in part to the subjects referred to in any Interrogatory and also includes the file jackets, and any labels thereon, in which responsive documents are contained. If any documents contain attachments or appendices, describe the attachments or appendices.

5. “Identify” means:

(a) When applied to an individual person, state the full name, present or last known business address, position with the state or other employer, job description, and telephone number;

(b) When applied to a document, state the title, date(s), author(s), signer(s), intended recipient(s), addressee(s), present location and custodian of the document, and current or last known address of the custodian of the document.

(c) When applied to oral communication, identify the speaker(s) and the person(s) addressed, state the date, place and medium of the communication and describe completely the content of the communication.

6. “Including” means “including, but not limited to.”

7. “Regarding,” “Related to,” and “Concerning” means concerning, referring to, alluding to, responding to, relating to, connected with, commenting upon, in respect of, about, establishing, analyzing, criticizing, touching upon, constituting, supporting, refuting and/or being.

9. “DEQ” refers to the Wyoming Department of Environmental Quality or any agent, officer or employee of DEQ. This includes the Wyoming Division of Land Quality (“Land Division”) and any agent, officer or employee of any of the divisions.

10. “You” or “Your” means DEQ or any agent officer, or employee of DEQ. This includes the Land Division and any agent, officer or employee of any of the divisions.

INSTRUCTIONS

In responding to these Interrogatories and Requests for Production of Documents, please adhere to the following instructions:

1. Furnish all information that is available to you, known to you, or that can be known after reasonable inquiry, including information in the possession, custody, or control of your attorneys, staff, agents, employees, officers, consultants, experts, or other representatives. In answering, you are required to make a reasonable inquiry to ascertain the information or knowledge necessary to respond in detail to such request. Answers must be specific and responsive.

2. If you do not or cannot answer any Interrogatory or Request for Production of Documents after exercising due diligence in attempting to secure the information, please state your answer to the extent possible and indicate your inability to answer the remainder. Include whatever information you may have concerning the unanswered portions and set forth in detail all efforts undertaken to ascertain the requested information.

3. If anything is deleted from a document produced in response to an Interrogatory or Request for Production, state the reason for the deletion, the subject matter of the deletion, and the name of the person or persons who decided to delete the information.

4. If any information in these Interrogatories or Requests for Production is withheld pursuant to an objection or claim of privilege, answer portions of the Interrogatory or Request for Production for which the privilege does not apply, identify the objection or privilege claimed, set forth a specific basis upon which the objection is raised or the privilege is claimed, and provide a privilege log and/or index of documents withheld that includes the following information: a statement identifying the nature of the information withheld, the date and subject matter of any communication containing that information, the names of all persons with knowledge of the information including the author, and the basis for withholding the information.

5. Answer all Interrogatories and Requests for Production under oath, and provide verification from appropriate representatives of DEQ, to support these answers.

6. Provide answers to these Interrogatories and Requests for Production by February 10, 2017. If you cannot complete these answers within this time, provide immediate notice to the Resource Council's counsel so that an amicable resolution to the problem can be reached.

7. These Interrogatories and Requests for Production are to be deemed continuing in nature. Supplement all answers as required by W.R.C.P. 26(e).

INTERROGATORIES

1. Identify and describe all persons at DEQ who were involved in any aspect of the permit application review process for Brook's permit and identify and describe their role in the process.

2. Identify and describe any advisors, consultants, or experts, if any, hired or used by DEQ in reviewing Brook's permit application and identify and describe their role in the permit process.

3. Identify and describe each step of the application and review/approval process for Brook's permit.

4. Please explain where DEQ is in the process of issuing a Cumulative Hydrologic Impact Assessment (CHIA) for Brook's proposed mine and disclose the anticipated timing of when the CHIA will be finalized. Please identify and describe all DEQ staff, and any advisors, consultants, or experts, if any, from outside the agency involved in the CHIA writing and review process.

5. Please explain how DEQ will incorporate the CHIA's findings into any decisions on Brook's permit application.

6. Please explain where DEQ is in the process of determining and designating Alluvial Valley Floors (AVFs) in the area. Please explain what work, if any, DEQ plans to carry out to further determine and designate AVFs in the area and the timing for the proposed actions.
7. Please explain when DEQ plans to issue a State Decision Document and/or a draft permit for Brook's proposed mine.
8. Please disclose how many water wells the groundwater modeling indicates will be impacted by Brook's proposed mine.
9. Please disclose the number and location of surface and ground water monitoring sites and explain how DEQ determined that the monitoring program was sufficient to adequately characterize the hydrologic balance and hydrologic systems of the area.
10. Please explain how DEQ plans to respond to a subsidence occurrence at the mine site.
11. Please explain and describe any coal fires that DEQ knows to be occurring in the area at the present time or have occurred in the area over the course of the AML and LQD programs.
12. Please provide all information from the AML division regarding efforts to address coal mine fires and subsidence and please list all dates and times the AML division has had to address coal mine fires and subsidence in the area.
13. Please explain how the DEQ reviewed and considered potential impacts to recreation uses in and around the Brook mine permit boundary.

REQUESTS FOR PRODUCTION OF DOCUMENTS

1. Provide a copy of any written findings by DEQ made pursuant to W.S. 35-11-406(n).

2. Provide a copy of any DEQ reports or memorandum used as background to make findings pursuant to W.S. 35-11-406(n), including, but not limited to, the Cumulative Hydrologic Impact Assessment required under Chapter 19 of DEQ's coal mining rules and regulations.
3. Provide a copy of any written findings by DEQ made pursuant to W.S. 35-11-406(m).
4. Provide a copy of any recommendation by the administrator made pursuant to W.S. 35-11-403(a)(iv) related to the issuance or denial of Brook's permit application.
5. Please provide a copy of "The administrator's estimate of the additional cost to the state of bringing in personnel and equipment should the operator fail or the site be abandoned" that is to be incorporated into the bond amount under W.S. 35-11-417(c)(i).
6. Please provide a copy of the names and addresses of all surface owners and affected properties who received a copy of the public notice published in December 2016 pursuant to W.S. 35-11-406(j).
7. Please provide a copy of any determinations made by DEQ related to Alluvial Valley Floor designations inside the permit boundary or in the area surrounding the proposed mining operation.
8. Please provide a copy of any draft or final mine permit, state decision document, and/or other written determinations by DEQ related to permit terms and conditions.
9. Please provide a copy of any correspondence that DEQ staff or agents have in their possession, including electronic correspondence or transcripts of voicemails, between the DEQ and EQC related to the referral of the permit application for a contested case hearing.

10. Please provide a copy of any correspondence between the DEQ and any person that submitted an objection letter regarding the objection letter or the referral of objections to the EQC. Letters that are already part of the EQC Docket need not be provided.

11. Please provide a copy of any water quality TMDLs for the Tongue River, Goose Creek, and any other streams or tributaries that are located within the permit boundary.

12. Please provide a copy of any AML reports related to coal mines in the area.

13. Please provide a copy of any searches ran through the Applicant Violator System related to this permit application.

Dated this 6th day of February, 2017.

/s/ Shannon Anderson

Shannon Anderson
Powder River Basin Resource Council
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CERTIFICATE OF SERVICE

I hereby certify that on February 6, 2017, I served a copy of the foregoing **FIRST SET OF INTERROGATORIES AND REQUESTS FOR PRODUCTION OF DOCUMENTS SERVED ON THE DEPARTMENT OF ENVIRONMENTAL QUALITY** on the following parties by electronic mail, and through the EQC's electronic filing system, which will send a notice of electronic filing to all counsel and parties of record.

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**BEFORE THE ENVIRONMENTAL QUALITY COUNCIL
STATE OF WYOMING**

IN RE BROOK MINE APPLICATION)
)
 TFN 6 2-025) **DOCKET 17-4801**

**POWDER RIVER BASIN RESOURCE COUNCIL'S FIRST SET OF
INTERROGATORIES AND REQUESTS FOR PRODUCTION OF DOCUMENTS
SERVED ON BROOK MINING CO., LLC**

In accordance with the Presiding Officer’s Scheduling Order of February 2, 2017, and pursuant to Wyoming Rules of Civil Procedure 26, 33, 34, and the following definitions and instructions, Powder River Basin Resources Council (“Resource Council” or “PRBRC”) requests that Brook Mining Co., LLC or any agent, officer or employee of Brook who has relevant information answer fully and under oath the following Interrogatories and Requests for Production of Documents.

DEFINITIONS

1. “Brook” means the permit applicant Brook Mining Co., LLC and includes any employee, officer, agent, or expert of Brook.
2. “Communication(s)” means conversations, discussions, meetings, telephone calls, notes, letters, memoranda, reports, telecopies of facsimiles (faxes), electronic mail, voice mail, text messages, data or file transfer, pictures or photographs, and all other forms of oral, written or electronic expression by which information may be conveyed, including any mechanical or electronic sound recording or transcription thereof.

3. “Describe” means to specify in detail and to particularize the content of the answer to the question and not just to state the reply in summary or outline fashion, including all pertinent facts about the fact, event, or situation in question, including but not limited to:

- (a) the time, date, and place;
- (b) identification of all persons present or involved;
- (c) identification of all oral or written communications made during the event or situation;
- (d) a detailed description of all actions taken.

4. “Document(s)” is used in the broadest sense contemplated by W.R.C.P. 34. It means all records and other tangible forms of expression, including information in electronic, magnetic, or photographic form, in your possession, custody, or control, including drafts and any copies thereof that contain notes or otherwise differ from the original, however many, by whomever created, however prepared, circulated, sent, received, dated or used, produced or stores (manually, mechanically, electronically, or otherwise), including but not limited to books, papers, files, modeling files and data, notes, correspondence, memoranda, reports, writings, drawings, photographs, telegrams, facsimiles (faxes), telephone logs, contracts, agreements, calendars, datebooks, worksheets, summaries, magnetic tapes, data files, other data compilations from which information can be obtained, electronic mail, disks, diskettes, disk packs, and other electronic media, microfilm, microfiche, and storage devices. It includes all material that relates or refers in whole or in part to the subjects referred to in any Interrogatory and also includes the file jackets, and any labels thereon, in which responsive documents are contained. If any documents contain attachments or appendices, describe the attachments or appendices.

5. “Identify” means:

- (a) When applied to an individual person, state the full name, present or last known business address, position with the state or other employer, job description, and telephone number;
- (b) When applied to a document, state the title, date(s), author(s), signer(s), intended recipient(s), addressee(s), present location and custodian of the document, and current or last known address of the custodian of the document.
- (c) When applied to oral communication, identify the speaker(s) and the person(s) addressed, state the date, place and medium of the communication and describe completely the content of the communication.

6. “Including” means “including, but not limited to.”

7. “Regarding,” “Related to,” and “Concerning” means concerning, referring to, alluding to, responding to, relating to, connected with, commenting upon, in respect of, about, establishing, analyzing, criticizing, touching upon, constituting, supporting, refuting and/or being.

9. “DEQ” refers to the Wyoming Department of Environmental Quality or any agency, officer or employee of DEQ. This includes the Wyoming Division of Land Quality (“Land Division”) and any agent, officer or employee of any of the divisions.

10. “You” or “Your” means Brook or any agent, officer, or employee of Brook.

INSTRUCTIONS

In responding to these Interrogatories and Requests for Production of Documents, please adhere to the following instructions:

1. Furnish all information that is available to you, known to you, or that can be known after reasonable inquiry, including information in the possession, custody, or control of

your attorneys, staff, agents, employees, officers, consultants, experts, or other representatives.

In answering, you are required to make a reasonable inquiry to ascertain the information or knowledge necessary to respond in detail to such request. Answers must be specific and responsive.

2. If you do not or cannot answer any Interrogatory or Request for Production of Documents after exercising due diligence in attempting to secure the information, please state your answer to the extent possible and indicate your inability to answer the remainder. Include whatever information you may have concerning the unanswered portions and set forth in detail all efforts undertaken to ascertain the requested information.

3. If anything is deleted from a document produced in response to an Interrogatory or Request for Production, state the reason for the deletion, the subject matter of the deletion, and the name of the person or persons who decided to delete the information.

4. If any information in these Interrogatories or Requests for Production is withheld pursuant to an objection or claim of privilege, answer portions of the Interrogatory or Request for Production for which the privilege does not apply, identify the objection or privilege claimed, set forth a specific basis upon which the objection is raised or the privilege is claimed, and provide a privilege log and/or index of documents withheld that includes the following information: a statement identifying the nature of the information withheld, the date and subject matter of any communication containing that information, the names of all persons with knowledge of the information including the author, and the basis for withholding the information.

5. Answer all Interrogatories and Requests for Production under oath, and provide verification from appropriate representatives of Brook, to support these answers.

6. Provide answers to these Interrogatories and Requests for Production by February 10, 2017. If you cannot complete these answers within this time, provide immediate notice to the Resource Council's counsel so that an amicable resolution to the problem can be reached.

7. These Interrogatories and Requests for Production are to be deemed continuing in nature. Supplement all answers as required by W.R.C.P. 26(e).

INTERROGATORIES

1. Identify and describe all persons employed by Brook Mining Co., LLC.

2. Identify and describe any advisors, consultants, or experts, if any, hired or used by Brook in preparing or reviewing your permit application. Please describe the qualifications of these individuals.

3. Identify and describe all subsidiary and/or parent companies/entities related to Brook.

4. Please describe any plans for blasting in the area, including proposed blasting timing and amounts.

5. Please describe any relationship Brook has with Cloud Peak Energy, including but not limited to agreements for surface use, ingress/egress, rights of way, etc.

6. Please disclose whether Brook has obtained surface owner access or orders in lieu of consent from all surface owners with the permit boundary, including the BNSF.

7. Please disclose whether Brook is aware of coal fires in the area at the present or in the past.

8. Please disclose whether Brook is aware of subsidence in the area at the present or in the past.

REQUESTS FOR PRODUCTION OF DOCUMENTS

1. Provide a copy of all state and federal permits received by Brook for the proposed project.
2. Provide a copy of any permit applications to MSHA.
3. Provide a copy of the traffic control plan referenced in the permit application.
4. Provide a copy of any agreements with Cloud Peak Energy.
5. Please provide documents that demonstrate the amount of water saturation in the targeted coal seams and what the groundwater inflow rates are in relation to the proposed mine excavations.

Dated this 6th day of February, 2017.

/s/ Shannon Anderson

Shannon Anderson
Powder River Basin Resource Council
934 N. Main St., Sheridan, WY 82801
(307) 672-5809
sanderson@powderriverbasin.org

CERTIFICATE OF SERVICE

I hereby certify that on February 6, 2017, I served a copy of the foregoing **FIRST SET OF INTERROGATORIES AND REQUESTS FOR PRODUCTION OF DOCUMENTS SERVED ON BROOK MINING CO., LLC** on the following parties by electronic mail, and through the EQC's electronic filing system, which will send a notice of electronic filing to all counsel and parties of record.

Andrew Kuhlmann
James LaRock
Wyoming Attorney General's Office
andrew.kuhlmann@wyo.gov
james.larock@wyo.gov
Attorneys for DEQ

Todd Parfitt
Director, DEQ
todd.parfitt@wyo.gov

Jeff Pope
Isaac Sutphin
Holland and Hart, LLP
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INSutphin@hollandhart.com
Attorneys for Brook Mining Co., LLC

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Clayton Gregersen
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cgregersen@crowleyfleck.com
Attorneys for Big Horn Coal Co.

Jay Gilbertz
Yonkee & Toner, LLP
jgilbertz@yonkeetoner.com
Attorney for Mary Brezik-Fisher & David Fisher

Brooke Collins
bpcharlie@wbaccess.net

_____/s/Shannon Anderson_____
Shannon Anderson

From: Wendy Drake
To: andrew.kuhlmann@wyo.gov; james.larock@wyo.gov; alan.edwards@wyo.gov; todd.parfitt@wyo.gov; alan.edwards@wyo.gov; sanderson@powderriverbasin.org; mayor@ranchesterwyoming.com; INSutphin@hollandandhart.com; JPope@hollandandhart.com; jgilbertz@yonkeetoner.com; bpcharlie@wbaccess.net; jim.ruby@wyo.gov
Cc: [Lynne Boomgaarden](#); [Clayton Gregersen](#)
Subject: Objector Big Horn Coal Company"s Objection to Procedure and Scheduling; Naming of Expert Witnesses
Date: Monday, February 06, 2017 4:56:33 PM
Attachments: [BHC - Objection to Procedure and Scheduling.pdf](#)
[BHC - Naming of Expert Witnesses.pdf](#)

Good afternoon,

Please see the attached pleadings which were filed today with the Environmental Quality Council.

Thank you.

Wendy Drake
*Assistant to Lynne Boomgaarden,
Amanda H. Newton, and Blake A. Klinkner*
307-772-4846
wdrake@crowleyfleck.com

CROWLEY FLECK PLLP
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ATTORNEYS FOR OBJECTORS
BIG HORN COAL COMPANY

**BEFORE THE ENVIRONMENTAL QUALITY COUNCIL
STATE OF WYOMING**

IN RE BROOK MINE APPLICATION)	
	)	Docket No. 17-4801
)	
TFN 6 2-025)	

**OBJECTOR BIG HORN COAL COMPANY'S OBJECTION TO PROCEDURE
AND SCHEDULING AS A VIOLATION OF DUE PROCESS**

Big Horn Coal Company (hereinafter "BHC"), by and through it undersigned counsel, Crowley Fleck PLLP, hereby submits this Objection to Procedure and Scheduling as a Violation of Due Process.

On February 6, 2017, Jay A. Gilbertz of Yonkee & Toner, LLP, on behalf of Objectors Mary Brezik-Fisher and David Fisher, filed a formal objection to the procedure and scheduling of this contested case hearing as violating established and applicable rules of procedure and fundamental procedural due process rights. See Objection to Procedure and Scheduling Which Violated Objectors' Due Process Rights and Demand that Discovery and Hearing be Modified to Comport with Due Process, filed on Feb. 6, 2017 (hereinafter "*Objection to Procedure and Scheduling*"). Having reviewed Mr. Gilbertz's

Objection to Procedure and Scheduling, BHC hereby adopts, incorporates and joins Mr. Gilbertz's Objection and also joins in the proposed solution contained therein. *See id.*

On February 2, 2017, the parties to this matter appeared for a pre-hearing conference before the Environmental Quality Council (EQC) where the hearing in this matter was set to begin on February 13, 2017 at 9:00 a.m. and all discovery was required to be conducted from February 6-10, 2017, a matter of one business week. *See Amended Order*, dated February 2, 2017. At this conference, Counsel for BHC (as well as several other parties) affirmed that it had requested an informal conference with the Wyoming Department of Environmental Quality ("DEQ") Director pursuant to W.S. § 35-11-406 and objected to this significantly truncated scheduling of the contested case proceeding on due process grounds.


As stated in the *Objection to Procedure and Scheduling* filed by Mr. Gilbertz, the schedule and procedure currently imposed on the parties would deny the Objectors their due process rights to a meaningful opportunity to be heard and express their objections. For the sake of brevity, these arguments will not be recited in this Objection, but instead are incorporated through this reference.

BHC also joins Mr. Gilbertz's proposed solution under which the hearing may still commence on February 13, 2017, but with the condition that the proceedings begin with the DEQ presenting its evidence pertaining to the draft permit which will then be followed by Brook Mine's presentation of evidence, to the extent time allows. From here, the proceedings would be continued to allow the parties to conduct meaningful discovery in anticipation of the resumption of the hearing related to the contested issues. This solution

would resolve the procedural due process issues and is most practicable considering that the evidence in this matter likely cannot be presented in the two-day timeframe currently scheduled. See Amended Order, dated February 2, 2017.

WHEREFORE, for the reasons stated herein and as more particularly stated in the *Objection to Procedure and Scheduling* filed by Mr. Gilbertz, BHC joins the objection of Mr. Gilbertz on behalf of Objectors Mary Brezik-Fisher and David Fisher and requests that the EQC enter an order directing the hearing dates of February 13 and 14, 2017 to include only evidence from DEQ and possibly Brook Mine, and that after this time the hearing will be continued for discovery and resumption for all further evidence at a later date.

DATED: February 6, 2017.

By 
Lynnette Boomgaarden (WSB # 5-2837)
Clayton H. Gregersen (WSB # 7-5677)
Crowley Fleck PLLP
237 Storey Boulevard, Suite 110
Cheyenne, WY 82009
(307) 426-4100

*Attorneys for Objectors
Big Horn Coal Company*

CERTIFICATE OF SERVICE

I hereby certify that on February 6, 2017, a true and correct copy of the foregoing was served by email to the following:

Andrew Kuhlmann
James LaRock
Wyoming Attorney General's Office
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James.larock@wyo.gov
Attorneys for DEQ

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Alan.edwards@wyo.gov

Isaac N. Sutphin
Jeffrey Pope
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JSPope@hollandhart.com
Attorneys for Brook Mining Co., LLC

Brook Collins
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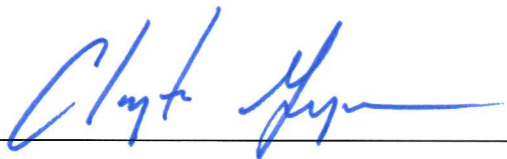
Todd Parfitt
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Todd.Parfitt@wyo.gov

Shannon Anderson
Powder River Basin Resource Council
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Mayor Peter Clark
Town of Ranchester
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Jay Gilbertz
jGilbertz@yonkeetoner.com
*Attorney for Mary Brezik-Fisher and
David Fisher*

Jim Ruby
Environmental Quality Council
Jim.ruby@wyo.gov



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ATTORNEYS FOR OBJECTORS
BIG HORN COAL COMPANY

**BEFORE THE ENVIRONMENTAL QUALITY COUNCIL
STATE OF WYOMING**

IN RE BROOK MINE APPLICATION)	
	)	Docket No. 17-4801
)	
TFN 6 2-025)	

**OBJECTOR BIG HORN COAL COMPANY'S NAMING OF EXPERT
WITNESSES**

Big Horn Coal Company, by and through its undersigned counsel, Crowley Fleck PLLP, and pursuant to the Amended Order of the Environmental Quality Council in this matter, dated February 2, 2017, submits this list of expert witnesses it intends to call at the hearing set to begin on February 13, 2017 at 9:00 a.m.

Big Horn Coal Company intends to call the following expert witnesses:

- 1. Jason N. Todd, QP**
Mining Consultant—Millcreek Mining Group
1011 E. Murray Holladay Rd, #100
Salt Lake City, UT 84117
(801) 904-2260

- 2. Paul (Joe) Gerlach**
President, Hydrogeologist—Aqua Terra Consultants
2624 Heartland Drive

Sheridan, WY 82801
(307) 672-7133

Big Horn Coal Company will provide an expert disclosure for each of these expert witnesses on or before February 10, 2017 as required by the Amended Order of the Environmental Quality Council in this matter, dated February 2, 2017. Both Mr. Todd and Mr. Gerlach must be contacted through the undersigned counsel for Big Horn Coal Company.

DATED: February 6, 2017.

By



Lynnette Boomgaarden (WSB # 5-2837)
Clayton H. Gregersen (WSB # 7-5677)
Crowley Fleck PLLP
237 Storey Boulevard, Suite 110
Cheyenne, WY 82009
(307) 426-4100

*Attorneys for Objectors
Big Horn Coal Company*

CERTIFICATE OF SERVICE

I hereby certify that on February 6, 2017, a true and correct copy of the foregoing was served by email to the following:

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Wyoming Attorney General's Office
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Todd Parfitt
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Jay Gilbertz
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*Attorney for Mary Brezik-Fisher and
David Fisher*

Jim Ruby
Environmental Quality Council
Jim.ruby@wyo.gov



From: Jenny Wacker
To: ["andrew.kuhlmann@wyo.gov"](mailto:andrew.kuhlmann@wyo.gov); james.larock@wyo.gov; alan.edwards@wyo.gov; INSutphin@hollandhart.com; JSPope@hollandhart.com; bpcharlie@wbaccess.net; todd.parfitt@wyo.gov; sanderson@powderriverbasin.org; mayor@ranchesterwyoming.com; jgilbertz@yonkeetoner.com; ["jim.ruby@wyo.gov"](mailto:jim.ruby@wyo.gov)
Cc: [Lynne Boomgaarden](#); [Clayton Gregersen](#); [Wendy Drake](#)
Subject: BHCC - Discovery Requests
Date: Monday, February 06, 2017 4:55:55 PM
Attachments: [BHCC--Discovery to DEQ.pdf](#)
[BHCC--Discovery to Brook Mining.pdf](#)

Please find Big Horn Coal Company's Discovery Requests attached.

Thank you,
Jenny



Jenny Wacker
Administrative Assistant to Lynne Boomgaarden and Keith Burron

OFFICES:
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ATTORNEY FOR OBJECTORS
BIG HORN COAL COMPANY

**BEFORE THE ENVIRONMENTAL QUALITY COUNCIL
STATE OF WYOMING**

IN RE BROOK MINE APPLICATION

)

)

Docket No. 17-4801

)

TFN 6 2-025

)

**OBJECTOR BIG HORN COAL COMPANY'S DISCOVERY REQUESTS TO
WYOMING DEPARTMENT OF ENVIRONMENTAL QUALITY (DEQ)**

TO: Wyoming DEQ, by and through Andrew Kuhlman and James LaRock, Wyoming Attorney General's Office, Pioneer Building, 2nd Floor, 2424 Pioneer Avenue, Cheyenne, WY 82002, their attorneys:

Pursuant to Wyo. Stat. Ann. § 16-3-107(g) and Rules 33 and 34 of the Wyoming Rules of Civil Procedure, Big Horn Coal Company, by and through its counsel of record, submits the following interrogatories and requests for production (collectively, the "Discovery Requests") to Wyoming DEQ.¹ Pursuant to Order of the Environmental

¹ By submitting these Discovery Requests, Big Horn Coal Company does not waive any due process objections made of record during the Scheduling Conference of February 2, 2017 and in Big Horn Coal Company's Objection to Procedure and Scheduling as a Violation of Due Process Rights, filed in this Matter on February 6, 2017. These Discovery Requests are simply an attempt to obtain some of the necessary

Quality Council ("EQC"), dated February 2, 2017, responses from Wyoming DEQ are due by February 10, 2017.

These Discovery Requests are not intended to duplicate any disclosures required by the EQC's Order of February 2, 2017. Instead, these Discovery Requests are an attempt to supplement these required disclosures with other relevant information as defined by the Wyoming Rules of Civil Procedure and appropriate case law interpreting the same. To the extent that the information requested in these Discovery Requests is duplicative of any already required disclosure, please indicate where that information was/will be provided and provide all other responsive information.

INSTRUCTIONS AND DEFINITIONS

The following instructions and definitions apply to these Discovery Requests and are incorporated therein:

1. The term "You", "Your", any plural, or any synonym thereof, are intended to and shall embrace and include Wyoming DEQ, counsel for said party, and all agents, servants, employees, representatives, or anyone on behalf of Wyoming DEQ, or who has acted for or on behalf of the Wyoming DEQ, who are in possession of, or may have obtained information for or on behalf of Wyoming DEQ.
2. The responses to these interrogatories and document requests ("Discovery Requests") shall include all non-privileged information and documents that are within your possession, custody, or control, to the fullest extent allowed under the Wyoming Rules of Civil Procedure.

information to present meaningful objections at the hearing set for February 13, 2017 and despite the lack of appropriate time to prepare under the scheduling in this matter.

3. Each Discovery Request should be construed as broadly as permissible under the Wyoming Rules of Civil Procedure, and no Discovery Request should be construed as a limitation on any other Discovery Request. If, in answering these Discovery Requests, you claim an ambiguity in interpreting a particular request, definition, or instruction, such claim shall not be used as a basis for refusing to respond. Instead, you should identify the language deemed ambiguous and the interpretation chosen or used in responding to the Discovery Request.

4. If there exists no information, documents, or things that are responsive to a particular request, that fact should be stated in response to the request.

5. These Discovery Requests are deemed to be continuing to the fullest extent permitted by the Wyoming Rules of Civil Procedure, until and up to the date and time of the EQC hearing currently set for February 13, 2017 at 9:00 a.m.

6. Regardless of the tense employed, all verbs shall be read as applying to the past, present, and future as necessary to make any paragraph more, rather than less, inclusive.

7. None of these Discovery Requests are intended to request information or documents protected by attorney-client privilege, protected as work-product or otherwise privileged or protected. To the extent that the following Discovery Requests seek such privileged or protected information, please provide all information not so protected and indicate the existence of the protected information.

8. "And," "or," or "and/or" shall be construed in either the disjunctive or conjunctive in order to elicit the broadest possible response.

9. IDENTIFY and/or IDENTIFYING: The terms “Identify” and/or “Identifying,” with respect to a natural Person, means to provide that Person’s name, home address and telephone number, current employer and job title, and work address and telephone number. The term “Identify” and/or “Identifying,” with respect to an entity, means to provide the name, address and telephone number for that entity. The term “Identify” and/or “Identifying,” with respect to a Document, means to provide the date, subject matter, author(s), addressee(s), recipient(s), length and current location of the Document. The term “Identify” and/or “Identifying,” when used with respect to oral statements or communications, means to state the maker of the communication or statement, recipient of the communication or statement, when the communication or statement was made, where the communication or statement was made, the person(s) present when the communication or statement was made, the mode of communication, and the subject matter of the communication or statement.

10. PERSON: The term “Person” includes natural persons and business entities.

11. DOCUMENT: The term “Document” means all materials, things, and tangible evidence within the scope of the Wyoming Rules of Civil Procedure, including, but not limited to, writings, memoranda, correspondence, files, cards, reports, forms, contracts, agreements, notes, inventories, diaries, calendars, communications or summaries of any kind, billing records, drawings, graphs, charts, photographs, films, recordings, videotapes, computer tapes, computer disks, electronically or digitally recorded data or information, electronic mail, and any other data or information compilations in any form, which are in the possession, custody or control of the you, your agents, counsel, or any other person(s)

acting on your behalf. Each draft and non-identical copy of a Document is to be considered a separate Document.

12. INCLUDING: The term "Including" means including but not limited to.

13. COMMUNICATION: The term "Communication" means the imparting or interchange of thoughts, opinions, or information by speech, writing, or signs, including but not limited to all inquiries, discussions, conversations, negotiations, agreements, meetings, telephone conversations, letters, correspondence, notes, facsimile transmissions, answering machine or voice mail information, electronic mail transmissions, or recordings, whether communicated by writing, electronically, orally, or otherwise.

INTERROGATORIES

INTERROGATORY NO. 1: Please identify all persons who aided in the preparation of these answers and responses to these Discovery Requests.

ANSWER:

INTERROGATORY NO. 2: Please identify each and every person you may, or intend to, call as a witness at the hearing for this matter, including a description of the substance of their proposed testimony, an identification of all documents or communications that will be referred to in each person's testimony or that was relied on forming any knowledge, beliefs or opinions that will be expressed in each witness's testimony. If any witnesses identified in response to this request will or may be presented or qualified as an expert, please indicate this as well.

ANSWER:

INTERROGATORY NO. 3: Please identify any person holding himself/herself out to be an expert or consultant in any field with respect to any of the issues in this hearing which you, your attorneys, or the potential experts/consultants listed herein have consulted with, and/or which you may use to in the presentation of your case or who have assisted in the preparation of your case. For each person state:

- a) the name address and field of expertise of each such person;
- b) the subject matter on which the expert is expected to testify or has consulted with you regarding;
- c) the substance of the facts and opinions to which the expert is expected to testify or has consulted with you regarding;
- d) a summary of the grounds for each such opinion of the expert/consultant;
and
- e) all documents and facts relied upon by such person in reaching his or her opinion(s).

ANSWER:

INTERROGATORY NO. 4: Please provide a summary of the evidence you believe establishes the requirements for a surface coal mining permit found in Wyo. Stat. Ann. § 35-11-406(n)(i)-(vii). Included in this summary, please identify what witnesses, documents, exhibits or any other evidence that you may use to establish each of these requirements at the EQC hearing for this matter set to begin on February 13, 2017.

ANSWER:

INTERROGATORY NO. 5: Please identify and describe any information responsive to any required disclosure found in Rule 26 of the Wyoming Rules of Civil Procedure, replacing as necessary the use of “trial” with “hearing” referring to the hearing in the matter currently set to begin on February 13, 2017, including but not limited to any disclosure required by Rule 26(a)(1) and (a)(3).

ANSWER:

INTERROGATORY NO. 6: Please identify and describe any documents, research, communications or correspondence with any person or entity discussing or referencing any potential material impacts on hydrologic balance inside or outside of the permit area, or any other potential material environmental, health, safety or other impacts of the proposed mining operations involved in this matter, including but not limited to any risks associated with existing underground coal fires and possible subsidence, and the extent to which the proposed reclamation bond is sufficient to address such impacts.

ANSWER:

INTERROGATORY NO. 7: Please identify and describe any documents, research, communications or correspondence discussing or referencing the requirements, policies or guidelines of the Wyoming Department of Environmental Quality, Land Quality Division’s Coal Standard Operation Procedure 2.1, regarding Coal Permit Content and Review Procedures Relating to Abutting and Overlapping Coal Permit Area Boundaries.

ANSWER:

REQUESTS FOR PRODUCTION

REQUEST FOR PRODUCTION NO. 1: Please produce a true and correct copy of any and all documents, exhibits, drawings, photographs, videotapes, motion pictures or other items of evidence that you may use or present at the EQC hearing set to begin on February 13, 2017.

RESPONSE:

REQUEST FOR PRODUCTION NO. 2: Please produce copies of all documents identified or referred to in your answers to these Discovery Requests, or utilized or relied on in answering these Discovery Requests.

RESPONSE:

REQUEST FOR PRODUCTION NO. 3: Please provide all documents responsive to any required disclosure found in Rule 26 of the Wyoming Rules of Civil Procedure, replacing as necessary the use of “trial” with “hearing” referring to the EQC hearing in the matter currently set to begin on February 13, 2017, including but not limited to any disclosure required by Rule 26(a)(1) and (a)(3).

RESPONSE:

REQUEST FOR PRODUCTION NO. 4: Please produce any documents, research, communications or correspondence with any person or entity discussing or

referencing any negative environmental, health or safety impacts of the proposed mining operations involved in this matter.

RESPONSE:

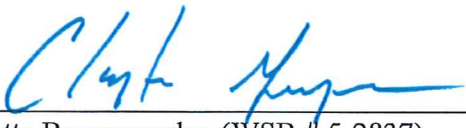
REQUEST FOR PRODUCTION NO. 5: Please produce any data, mapping, documents or research concerning, or any communications or correspondence with any person or entity discussing or referencing any of the following:

- a. Geotechnical designs or highwall mining design of the proposed mining operations involved in this matter;
- b. Coal strength or stability factors of the proposed mining operations involved in this matter;
- c. Materials reports or studies regarding the proposed mining operations involved in this matter;
- d. Water use rates and/or groundwater aquifer testing;
- e. Historical underground workings in or around the mining area of the proposed mining operations involved in this matter; **or**
- f. Subsurface fires in or around the mining area of the proposed mining operations involved in this matter.

RESPONSE:

DATED: February 6, 2017.

[Signature page to follow.]

By 
Lynnette Boomgaarden (WSB # 5-2837)
Clayton H. Gregersen (WSB # 7-5677)
Crowley Fleck PLLP
237 Storey Boulevard, Suite 110
Cheyenne, WY 82009
(307) 426-4100

Attorney for Objectors
Big Horn Coal Company

CERTIFICATE OF SERVICE

I hereby certify that on February 6, 2017, a true and correct copy of the foregoing was served by email to the following:

Andrew Kuhlmann
James LaRock
Wyoming Attorney General's Office
Andrew.kuhlmann@wyo.gov
James.larock@wyo.gov
Attorneys for DEQ

Alan Edwards
Deputy Director, DEQ
Alan.edwards@wyo.gov

Isaac N. Sutphin
Jeffrey Pope
INSutphin@hollandhart.com
JSPope@hollandhart.com
Attorneys for Brook Mining Co., LLC

Brook Collins
38 Monarch Rd.
Ranchester, WY 82839
bpcharlie@wbaccess.net

Todd Parfitt
Director, DEQ
Todd.Parfitt@wyo.gov

Shannon Anderson
Powder River Basin Resource Council
sanderson@powderriverbasin.org

Mayor Peter Clark
Town of Ranchester
mayor@ranchesterwy.com

Jay Gilbertz
jGilbertz@yonkeetoner.com
*Attorney for Mary Brezik-Fisher and
David Fisher*

Jim Ruby
Environmental Quality Council
Jim.ruby@wyo.gov



Environmental Quality Council ("EQC"), dated February 2, 2017, responses from Wyoming DEQ are due by February 10, 2017.

These Discovery Requests are not intended to duplicate any disclosures required by the EQC's Order of February 2, 2017. Instead, these Discovery Requests are an attempt to supplement these required disclosures with other relevant information as defined by the Wyoming Rules of Civil Procedure and appropriate case law interpreting the same. To the extent that the information requested in these Discovery Requests is duplicative of any already required disclosure, please indicate where that information was/will be provided and provide all other responsive information.

INSTRUCTIONS AND DEFINITIONS

The following instructions and definitions apply to these Discovery Requests and are incorporated therein:

1. The term "You", "Your", any plural, or any synonym thereof, are intended to and shall embrace and include Brook Mining Co., LLC, counsel for said party, and all agents, servants, employees, representatives, or anyone on behalf of Brook Mining CO., LLC, or who has acted for or on behalf of the Brook Mining Co., LLC, who are in possession of, or may have obtained information for or on behalf of Brook Mining Co., LLC.
2. The responses to these interrogatories and document requests ("Discovery Requests") shall include all non-privileged information and documents that are within your possession, custody, or control, to the fullest extent allowed under the Wyoming Rules of Civil Procedure.

information to present meaningful objections at the hearing set for February 13, 2017 and despite the lack of appropriate time to prepare under the scheduling in this matter.

3. Each Discovery Request should be construed as broadly as permissible under the Wyoming Rules of Civil Procedure, and no Discovery Request should be construed as a limitation on any other Discovery Request. If, in answering these Discovery Requests, you claim an ambiguity in interpreting a particular request, definition, or instruction, such claim shall not be used as a basis for refusing to respond. Instead, you should identify the language deemed ambiguous and the interpretation chosen or used in responding to the Discovery Request.

4. If there exists no information, documents, or things that are responsive to a particular request, that fact should be stated in response to the request.

5. These Discovery Requests are deemed to be continuing to the fullest extent permitted by the Wyoming Rules of Civil Procedure, until and up to the date and time of the final hearing currently set for February 13, 2017 at 9:00 a.m.

6. Regardless of the tense employed, all verbs shall be read as applying to the past, present, and future as necessary to make any paragraph more, rather than less, inclusive.

7. None of these Discovery Requests are intended to request information or documents protected by attorney-client privilege, protected as work-product or otherwise privileged or protected. To the extent that the following Discovery Requests seek such privileged or protected information, please provide all information not so protected and indicate the existence of the protected information.

8. "And," "or," or "and/or" shall be construed in either the disjunctive or conjunctive in order to elicit the broadest possible response.

9. IDENTIFY and/or IDENTIFYING: The terms "Identify" and/or "Identifying," with respect to a natural Person, means to provide that Person's name, home address and telephone number, current employer and job title, and work address and telephone number. The term "Identify" and/or "Identifying," with respect to an entity, means to provide the name, address and telephone number for that entity. The term "Identify" and/or "Identifying," with respect to a Document, means to provide the date, subject matter, author(s), addressee(s), recipient(s), length and current location of the Document. The term "Identify" and/or "Identifying," when used with respect to oral statements or communications, means to state the maker of the communication or statement, recipient of the communication or statement, when the communication or statement was made, where the communication or statement was made, the person(s) present when the communication or statement was made, the mode of communication, and the subject matter of the communication or statement.

10. PERSON: The term "Person" includes natural persons and business entities.

11. DOCUMENT: The term "Document" means all materials, things, and tangible evidence within the scope of the Wyoming Rules of Civil Procedure, including, but not limited to, writings, memoranda, correspondence, files, cards, reports, forms, contracts, agreements, notes, inventories, diaries, calendars, communications or summaries of any kind, billing records, drawings, graphs, charts, photographs, films, recordings, videotapes, computer tapes, computer disks, electronically or digitally recorded data or information, electronic mail, and any other data or information compilations in any form, which are in the possession, custody or control of the you, your agents, counsel, or any other person(s)

acting on your behalf. Each draft and non-identical copy of a Document is to be considered a separate Document.

12. **INCLUDING:** The term “Including” means including but not limited to.

13. **COMMUNICATION:** The term “Communication” means the imparting or interchange of thoughts, opinions, or information by speech, writing, or signs, including but not limited to all inquiries, discussions, conversations, negotiations, agreements, meetings, telephone conversations, letters, correspondence, notes, facsimile transmissions, answering machine or voice mail information, electronic mail transmissions, or recordings, whether communicated by writing, electronically, orally, or otherwise.

INTERROGATORIES

INTERROGATORY NO. 1: Please identify all persons who aided in the preparation of these answers and responses to these Discovery Requests.

ANSWER:

INTERROGATORY NO. 2: Please identify each and every person you may, or intend to, call as a witness at the hearing for this matter, including a description of the substance of their proposed testimony, an identification of all documents or communications that will be referred to in each person’s testimony or that was relied on forming any knowledge, beliefs or opinions that will be expressed in each witness’s testimony. If any witnesses identified in response to this request will or may be presented or qualified as an expert, please indicate this as well.

ANSWER:

INTERROGATORY NO. 3: Please identify any person holding himself/herself out to be an expert or consultant in any field with respect to any of the issues in this hearing which you, your attorneys, or the potential experts/consultants listed herein have consulted with, and/or which you may use to in the presentation of your case or who have assisted in the preparation of your case. For each person state:

- a) the name address and field of expertise of each such person;
- b) the subject matter on which the expert is expected to testify or has consulted with you regarding;
- c) the substance of the facts and opinions to which the expert is expected to testify or has consulted with you regarding;
- d) a summary of the grounds for each such opinion of the expert/consultant;
and
- e) all documents and facts relied upon by such person in reaching his or her opinion(s).

ANSWER:

INTERROGATORY NO. 4: Please provide a summary of the evidence you believe establishes the requirements for a surface coal mining permit found in Wyo. Stat. Ann. § 35-11-406(n)(i)-(vii). Included in this summary, please identify what witnesses, documents, exhibits or any other evidence that you may use to establish each of these requirements at the EQC hearing for this matter set to begin on February 13, 2017.

ANSWER:

INTERROGATORY NO. 5: Please identify and describe any information responsive to any required disclosure found in Rule 26 of the Wyoming Rules of Civil Procedure, replacing as necessary the use of “trial” with “hearing” referring to the hearing in the matter currently set to begin on February 13, 2017, including but not limited to any disclosure required by Rule 26(a)(1) and (a)(3).

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ANSWER:

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RESPONSE:

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referencing any negative environmental, health or safety impacts of the proposed mining operations involved in this matter.

RESPONSE:

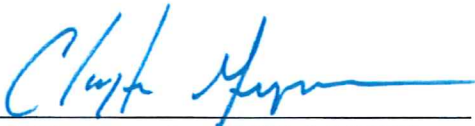
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- f. Subsurface fires in or around the mining area of the proposed mining operations involved in this matter.

RESPONSE:

DATED: February 6, 2017.

[Signature page to follow.]

By 
Lynnette Boomgaarden (WSB # 5-2837)
Clayton H. Gregersen (WSB # 7-5677)
Crowley Fleck PLLP
237 Storey Boulevard, Suite 110
Cheyenne, WY 82009
(307) 426-4100

*Attorney for Objectors
Big Horn Coal Company*

CERTIFICATE OF SERVICE

I hereby certify that on February 6, 2017, a true and correct copy of the foregoing was served by email to the following:

Andrew Kuhlmann
James LaRock
Wyoming Attorney General's Office
Andrew.kuhlmann@wyo.gov
James.larock@wyo.gov
Attorneys for DEQ

Alan Edwards
Deputy Director, DEQ
Alan.edwards@wyo.gov

Isaac N. Sutphin
Jeffrey Pope
INSutphin@hollandhart.com
JSPope@hollandhart.com
Attorneys for Brook Mining Co., LLC

Brook Collins
38 Monarch Rd.
Ranchester, WY 82839
bpcharlie@wbaccess.net

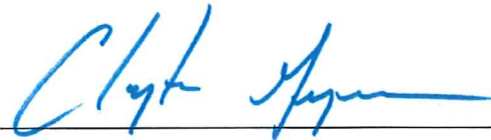
Todd Parfitt
Director, DEQ
Todd.Parfitt@wyo.gov

Shannon Anderson
Powder River Basin Resource Council
sanderson@powderriverbasin.org

Mayor Peter Clark
Town of Ranchester
mayor@ranchesterwy.com,
wyoming.com

Jay Gilbertz
jGilbertz@yonkeetoner.com
*Attorney for Mary Brezik-Fisher and
David Fisher*

Jim Ruby
Environmental Quality Council
Jim.ruby@wyo.gov



From: Jeffrey S. Pope
To: [Jim Ruby](#)
Cc: [Andrew Kuhlmann](#); james.larock@wyo.gov; [Lynne Boomgaarden](#); [Jay Gilbertz](#); sanderson@powderriverbasin.org; [Isaac Sutphin](#); bpcharlies@wbaccess.net
Subject: RE: Opening Statements
Date: Monday, February 06, 2017 4:40:15 PM

Thank you Jim.

From: Jim Ruby [mailto:jim.ruby@wyo.gov]
Sent: Monday, February 6, 2017 4:38 PM
To: Jeffrey S. Pope <JSPope@hollandhart.com>
Cc: Andrew Kuhlmann <andrew.kuhlmann@wyo.gov>; james.larock@wyo.gov; Lynne Boomgaarden <lboomgaarden@crowleyfleck.com>; Jay Gilbertz <JGilbertz@yonkeetoner.com>; sanderson@powderriverbasin.org; Isaac Sutphin <INSutphin@hollandhart.com>; bpcharlies@wbaccess.net
Subject: Re: Opening Statements

Hi Jeff:

At this point the hearing officer will hold everyone to 5 minutes on openings. That is subject to further discussions but that is what is currently planned.

Jim

On Mon, Feb 6, 2017 at 4:32 PM, Jeffrey S. Pope <JSPope@hollandhart.com> wrote:

Hi Jim,

It occurred to us that we did not discuss opening statements during the scheduling conference. We would like to do them. Does the Council plan to allow them?

If so, how long would each party get? Recognizing that the parties plan to present a lot of information in a short time, we would suggest 5 minutes per party.

Thank you,

Jeff

Jeffrey S. Pope
Associate
Holland & Hart LLP
2515 Warren Ave., Suite 450
Cheyenne, WY 82001
Phone [\(307\) 778-4200](tel:(307)778-4200)
Fax [\(307\) 778-8175](tel:(307)778-8175)
E-mail: jspope@hollandhart.com

CONFIDENTIALITY NOTICE: This message is confidential and may be privileged. If you believe that this email has been sent to you

in error, please reply to the sender that you received the message in error; then please delete this e-mail. Thank you.

E-Mail to and from me, in connection with the transaction of public business, is subject to the Wyoming Public Records Act and may be disclosed to third parties.

From: Jim Ruby
To: [Jeffrey S. Pope](#)
Cc: [Andrew Kuhlmann](#); james.larock@wyo.gov; [Lynne Boomgaarden](#); [Jay Gilbertz](#); sanderson@powderriverbasin.org; [Isaac Sutphin](#); bpcharlies@wbaccess.net
Subject: Re: Opening Statements
Date: Monday, February 06, 2017 4:38:18 PM

Hi Jeff:

At this point the hearing officer will hold everyone to 5 minutes on openings. That is subject to further discussions but that is what is currently planned.

Jim

On Mon, Feb 6, 2017 at 4:32 PM, Jeffrey S. Pope <JSPope@hollandhart.com> wrote:

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If so, how long would each party get? Recognizing that the parties plan to present a lot of information in a short time, we would suggest 5 minutes per party.

Thank you,

Jeff

Jeffrey S. Pope
Associate
Holland & Hart LLP
2515 Warren Ave., Suite 450
Cheyenne, WY 82001
Phone [\(307\) 778-4200](tel:(307)778-4200)
Fax [\(307\) 778-8175](tel:(307)778-8175)
E-mail: jspope@hollandhart.com



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From: Jeffrey S. Pope
To: jim.ruby@wyo.gov
Cc: [Andrew Kuhlmann](#); james.larock@wyo.gov; [Lynne Boomgaarden](#); [Jay Gilbertz](#); sanderson@powderriverbasin.org; [Isaac Sutphin](#); bpcharlies@wbaccess.net
Subject: Opening Statements
Date: Monday, February 06, 2017 4:32:52 PM

Hi Jim,

It occurred to us that we did not discuss opening statements during the scheduling conference. We would like to do them. Does the Council plan to allow them?

If so, how long would each party get? Recognizing that the parties plan to present a lot of information in a short time, we would suggest 5 minutes per party.

Thank you,

Jeff

Jeffrey S. Pope

Associate

Holland & Hart LLP

2515 Warren Ave., Suite 450

Cheyenne, WY 82001

Phone (307) 778-4200

Fax (307) 778-8175

E-mail: jspope@hollandhart.com



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From: Jill Morrison
To: [Jim Ruby](#)
Subject: RE: Brook
Date: Thursday, February 02, 2017 10:42:13 AM

Jim, we are not on the phone call any longer – most of us got kicked off that called in.

From: Jim Ruby [mailto:jim.ruby@wyo.gov]
Sent: Monday, January 30, 2017 1:18 PM
To: Jill Morrison
Subject: Fwd: Brook

----- Forwarded message -----

From: **BJ Kristiansen** <bj.kristiansen@wyo.gov>
Date: Mon, Jan 30, 2017 at 12:46 PM
Subject: RE: Brook
To: Jim Ruby <jim.ruby@wyo.gov>

Jim,

Here are the names and numbers that I can find.

-bj

From: Jim Ruby [mailto:jim.ruby@wyo.gov]
Sent: Monday, January 30, 2017 12:35 PM
To: Alan Edwards <alan.edwards@wyo.gov>
Cc: andrew kuhlmann <andrew.kuhlmann@wyo.gov>; BJ Kristiansen <bj.kristiansen@wyo.gov>
Subject: Re: Brook

BJ:

I really need the names and contact information of the objectors that you have. I need to get hold of them to advise them of a conference this Thursday. Can you get those to me asap.

Thanks

Jim

On Mon, Jan 30, 2017 at 8:59 AM, Alan Edwards <alan.edwards@wyo.gov> wrote:

BJ is the permit coordinator and is the individual who reviewed the permit and is reviewing the comment letters. He would be the contact for that side otherwise let me know what you are trying to get information on and I will get you who you need. Andrew will be our AG for this hearing. If you contact BJ by e-mail I would appreciate if you would copy both Andrew and I. The hearing is coming up fast so that would help us ensure you are getting what you need. We are making arrangements to get a pdf copy of the permit application that was available for public review and comment on the assumption you will want/need to upload that to your docket. Heads up, though, it will be a big file. You should have the

electronic copy of all of the comment letters received so far and Todd's response letters this morning. We will also get you the list of the contact information for those who submitted comment letters including their phone numbers that we have been able to find. If we receive any additional comment letters that satisfy the public comment requirements we will forward those as we get them.

Alan

On Mon, Jan 30, 2017 at 8:46 AM, Jim Ruby <jim.ruby@wyo.gov> wrote:

I am not sure. Probably whoever was the person who was the contact person for comments on the permit. I just want to make sure I know who I can contact if something comes in that I might need help figuring out or who should be on the case to get information for your permit file along with you. Also is Andrew going to be your attorney in this case?

Thanks

Jim

On Mon, Jan 30, 2017 at 8:42 AM, Alan Edwards <alan.edwards@wyo.gov> wrote:

Are you looking for the permit coordinator who was the lead for the permit review or for records? I want to make sure you are getting the person you need. Alan

On Mon, Jan 30, 2017 at 8:33 AM, Jim Ruby <jim.ruby@wyo.gov> wrote:

Good Morning Alan:

Who should I talk to in Land quality regarding Brook and the filed appeal? Have a great week.

Jim

E-Mail to and from me, in connection with the transaction of public business, is subject to the Wyoming Public Records Act and may be disclosed to third parties.

--

Alan Edwards
Deputy Director
Administrator, Abandoned Mine Lands
200 West 17th Street
Cheyenne, Wyoming 82002
Office: [307-777-7062](tel:307-777-7062)
Alan.Edwards@wyo.gov

PLEASE NOTE CHANGE IN ADDRESS

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From: Shannon Anderson
To: [Andrew Kuhlmann](#); [Jim Ruby](#)
Cc: [Lynne Boomgaarden](#); [Michael Klein](#); [Isaac Sutphin](#); [James LaRock](#)
Subject: RE: Brook
Date: Wednesday, February 01, 2017 8:26:16 PM

Counsel & Mr. Ruby,

I would like to state that it is important to not have these conversations via email until 1) all counsel have made an appearance in the case and 2) it is clear which of the objecting parties will be continuing in the proceeding. Until then, these conversations border on ex parte conversations and are troublesome.

Looking forward to speaking with you tomorrow at the scheduling conference.

Thank you,
Shannon

Shannon Anderson
Powder River Basin Resource Council
934 N. Main St., Sheridan, WY 82801
307-672-5809 cell: 307-763-0995
sanderson@powderriverbasin.org
Join us at www.powderriverbasin.org
Follow us at <https://twitter.com/PRBResCouncil>

From: Andrew Kuhlmann [mailto:andrew.kuhlmann@wyo.gov]
Sent: Wednesday, February 01, 2017 4:59 PM
To: Jim Ruby
Cc: Lynne Boomgaarden; Michael Klein; Shannon Anderson; Isaac Sutphin; James LaRock
Subject: Re: Brook

Mr. Ruby,

The Department does not object to the Council holding the hearing in Cheyenne. However, due to the number of parties located near Sheridan, the Department recommends holding the hearing there.

Thank you,
Andrew

--

Andrew J. Kuhlmann
Senior Assistant Attorney General
Water & Natural Resources Division
Wyoming Attorney General's Office
2320 Capitol Avenue
Cheyenne, WY 82002
[307-777-3537](tel:307-777-3537) - Phone
[307-777-3542](tel:307-777-3542) - Fax

*The information provided in this communication is confidential and protected and is intended

only for the use of the addressee. The information may be privileged attorney-client communication, attorney work product, deliberative process, or otherwise confidential under law. Unauthorized use, disclosure, or copying of such information is strictly prohibited and may be unlawful. If you have received this communication in error, please notify the Water and Natural Resources Division immediately by replying to the message or calling [\(307\) 777-6946](tel:3077776946).

From: Jim Ruby [mailto:jim.ruby@wyo.gov]

Sent: Monday, January 30, 2017 11:00 AM

To: andrew kuhlmann <andrew.kuhlmann@wyo.gov>; Isaac Sutphin <insutphin@hollandhart.com>; Lynne Boomgaarden <boomgaarden@crowleyfleck.com>

Subject: Brook

Hi Counsel:

Just a quick update the scheduling conference time has been tentatively changed to 10:30 a.m. on Thursday the 2nd of Feb. The hearing officer, Nick Agopian, would also like to have the hearing in Cheyenne if possible so if you have any objections to that please let me know.

Thanks

Jim

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From: Andrew Kuhlmann
To: [Jim Ruby](#)
Cc: [Lynne Boomgaarden](#); [Michael Klein](#); [Shannon Anderson](#); [Isaac Sutphin](#); [James LaRock](#)
Subject: Re: Brook
Date: Wednesday, February 01, 2017 4:59:11 PM

Mr. Ruby,

The Department does not object to the Council holding the hearing in Cheyenne. However, due to the number of parties located near Sheridan, the Department recommends holding the hearing there.

Thank you,
Andrew

--

Andrew J. Kuhlmann
Senior Assistant Attorney General
Water & Natural Resources Division
Wyoming Attorney General's Office
2320 Capitol Avenue
Cheyenne, WY 82002
[307-777-3537](tel:307-777-3537) - Phone
[307-777-3542](tel:307-777-3542) - Fax

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From: Jim Ruby [mailto:jim.ruby@wyo.gov]
Sent: Monday, January 30, 2017 11:00 AM
To: andrew kuhlmann <andrew.kuhlmann@wyo.gov>; Isaac Sutphin <insutphin@hollandhart.com>; Lynne Boomgaarden <lboomgaarden@crowleyfleck.com>
Subject: Brook

Hi Counsel:

Just a quick update the scheduling conference time has been tentatively changed to 10:30 a.m. on Thursday the 2nd of Feb. The hearing officer, Nick Agopian, would also like to have the hearing in Cheyenne if possible so if you have any objections to that please let me know.

Thanks

Jim

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From: Jim Ruby
To: [Shannon Anderson](#); [Todd Parfitt](#); [andrew kuhlmann](#); [Isaac Sutphin](#); [Lynne Boomgaarden](#); [mayor@ranchesterwy.com](#); [James LaRock](#); [Jenny Wacker](#); [wdrake@crowleyfleck.com](#); [Alan Edwards](#)
Subject: Scheduling Conference Order
Date: Tuesday, January 31, 2017 10:59:18 AM
Attachments: [Order for Scheduling Conference and Cert of Service.pdf](#)

**BEFORE THE ENVIRONMENTAL QUALITY COUNCIL
STATE OF WYOMING**

IN RE BROOK MINE APPLICATION

)
)
)
)

DOCKET 17-4801

TFN 6 2-025

ORDER

The Parties shall appear for a short pre-hearing conference in this matter that will be conducted on Thursday, February 2, 2017 at 10:30 a.m. via telephone conference call and in the Board of Equalization Board Room, 1st Floor West of the Herschler Building, Cheyenne, Wyoming. The Parties shall provide the EQC office with a direct telephone number and an email address where they can be reached for the pre-hearing on or before noon on February 1, 2017. Failure to appear at the pre-hearing conference may result in dismissal from this case.

DATED this 30th day of January, 2017.


Nick Agopian, Hearing Officer
Environmental Quality Council

CERTIFICATE OF SERVICE

I, James Ruby, certify that at Cheyenne, Wyoming, on the 31th day of January, 2017, I served a copy of the foregoing **Scheduling Conference Order** by electronic mail or by depositing copies of the same in the United States mail, postage prepaid, and addressed to the following:

John Barbula
124 Kleenburn Rd.
Ranchester WY 82839

Anton Bocek
11 Slater Creek Lane
Ranchester WY 82839

Brook Collins
38 Monarch Rd
Ranchester WY 82839

and by electronic mail to the following:

Andrew Kuhlmann
Asst. Attorney General
andrew.kuhlmann@wyo.gov

Todd Parfitt
Director, DEQ
Todd.Parfitt@wyo.gov


Alan Edwards
Deputy Director, DEQ
Alan.edwards@wyo.gov

Shannon Anderson
Powder River Basin Resource Council
sanderson@powderriverbasin.org

Isaac Sutphin
Attorney for Brook Mine
INSutphin@hollandhart.com

Mayor Peter Clark
Town of Ranchester
mayor@ranchesterwy.com

Lynn Boomgaarden
Attorney for Big Horn Coal
lboomgaarden@crowleyfleck.com
jwacker@crowleyfleck.com
wdrake@crowleyfleck.com



Jim Ruby, Executive Officer
Environmental Quality Council
122 W. 25th Street
Herschler Bldg., Rm. 1714
Cheyenne, WY 82002
Phone: 307-777-7170

From: Shannon Anderson
To: [Jim Ruby](#); [Lynne Boomgaarden](#)
Cc: [andrew kuhlmann](#); [Isaac Sutphin](#); [Michael Klein](#)
Subject: RE: Brook
Date: Monday, January 30, 2017 4:43:40 PM

Counsel and Mr. Ruby:

We request that the hearing be in Sheridan County, the location of the proposed mining operation. Thank you.

Shannon Anderson
Powder River Basin Resource Council
934 N. Main St., Sheridan, WY 82801
307-672-5809 cell: 307-763-0995
sanderson@powderriverbasin.org
Join us at www.powderriverbasin.org
Follow us at <https://twitter.com/PRBResCouncil>

From: Jim Ruby [mailto:jim.ruby@wyo.gov]
Sent: Monday, January 30, 2017 4:10 PM
To: Lynne Boomgaarden; Shannon Anderson
Cc: andrew kuhlmann; Isaac Sutphin; Michael Klein (m.klein@lhr-inc.com)
Subject: Re: Brook

Hi Lynn:

Will do. Thanks.

Jim

On Mon, Jan 30, 2017 at 4:08 PM, Lynne Boomgaarden <lboomgaarden@crowleyfleck.com> wrote:

Mr. Ruby –

Please let me know the final time for the scheduling conference and provide me the call in information. I will arrange for representation of Big Horn Coal at the scheduling conference and will confirm with you in advance who will participate on Big Horn Coal's behalf.

Thank you,
Lynne

Lynne Boomgaarden



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From: Jim Ruby [mailto:jim.ruby@wyo.gov]

Sent: Monday, January 30, 2017 12:34 PM

To: Lynne Boomgaarden <lboomgaarden@crowleyfleck.com>

Cc: andrew kuhlmann <andrew.kuhlmann@wyo.gov>; Isaac Sutphin <insutphin@hollandhart.com>; Michael Klein (m.klein@lhr-inc.com) <m.klein@lhr-inc.com>

Subject: Re: Brook

Hi Lynn:

Because of the short time frame for this hearing, 20 days from end of comment period, and the requirement that the Council publish notice of the hearing twice on two consecutive weeks, I have to have the scheduling conference this week. Thursday is the best day for the hearing officer and for me to get some kind of notice out to all of the parties so they can try and appear.

The conference can be attended by phone so you don't have to be present. The main reason for the conference is just to get a line on how best to handle the hearing and where. I regret I can't change the day or the time unless I am able to get an agreement of all the parties to change the final hearing date.

I don't have the names and addresses of all of the objectors yet, I am hopeful that I will have that in the next hour or so.

Jim

On Mon, Jan 30, 2017 at 11:56 AM, Lynne Boomgaarden
<lboomgaarden@crowleyfleck.com> wrote:

Mr. Ruby –

As you know, I am just this morning learning that the Director is denying requests for an informal conference and instead referring this matter to the EQC for a contested case hearing. I understand there are more than a dozen objectors with multiple objectors possibly represented by counsel.

On behalf of Big Horn Coal Company, we do not object to the hearing being scheduled in Cheyenne. Unfortunately, I am traveling on Thursday and cannot be available for a scheduling conference on that day. Please let me know whether the scheduling conference can be rescheduled to a date when all counsel are available and what other counsel/objectors will be participating.

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Lynne

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Sent: Monday, January 30, 2017 11:00 AM

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To: [Lynne Boomgaarden](#); [Shannon Anderson](#)
Cc: [andrew kuhlmann](#); [Isaac Sutphin](#); [Michael Klein \(m.klein@lhr-inc.com\)](#)
Subject: Re: Brook
Date: Monday, January 30, 2017 4:10:14 PM

Hi Lynn:

Will do. Thanks.

Jim

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From: Jim Ruby
To: [Jill Morrison](#)
Subject: Fwd: Brook
Date: Monday, January 30, 2017 1:18:28 PM
Attachments: [Brook Addresses.xlsx](#)

----- Forwarded message -----

From: **BJ Kristiansen** <bj.kristiansen@wyo.gov>
Date: Mon, Jan 30, 2017 at 12:46 PM
Subject: RE: Brook
To: Jim Ruby <jim.ruby@wyo.gov>

Jim,

Here are the names and numbers that I can find.

-bj

From: Jim Ruby [mailto:jim.ruby@wyo.gov]
Sent: Monday, January 30, 2017 12:35 PM
To: Alan Edwards <alan.edwards@wyo.gov>
Cc: andrew kuhlmann <andrew.kuhlmann@wyo.gov>; BJ Kristiansen <bj.kristiansen@wyo.gov>
Subject: Re: Brook

BJ:

I really need the names and contact information of the objectors that you have. I need to get hold of them to advise them of a conference this Thursday. Can you get those to me asap.

Thanks

Jim

On Mon, Jan 30, 2017 at 8:59 AM, Alan Edwards <alan.edwards@wyo.gov> wrote:

BJ is the permit coordinator and is the individual who reviewed the permit and is reviewing the comment letters. He would be the contact for that side otherwise let me know what you are trying to get information on and I will get you who you need. Andrew will be our AG for this hearing. If you contact BJ by e-mail I would appreciate if you would copy both Andrew and I. The hearing is coming up fast so that would help us ensure you are getting what you need. We are making arrangements to get a pdf copy of the permit application that was available for public review and comment on the assumption you will want/need to upload that to your docket. Heads up, though, it will be a big file. You should have the electronic copy of all of the comment letters received so far and Todd's response letters this morning. We will also get you the list of the contact information for those who submitted comment letters including their phone numbers that we have been able to find. If we receive any additional comment letters that satisfy the public comment requirements we will forward those as we get them.

Alan

On Mon, Jan 30, 2017 at 8:46 AM, Jim Ruby <jim.ruby@wyo.gov> wrote:

I am not sure. Probably whoever was the person who was the contact person for comments on the permit. I just want to make sure I know who I can contact if something comes in that I might need help figuring out or who should be on the case to get information for your permit file along with you. Also is Andrew going to be your attorney in this case?

Thanks

Jim

On Mon, Jan 30, 2017 at 8:42 AM, Alan Edwards <alan.edwards@wyo.gov> wrote:

Are you looking for the permit coordinator who was the lead for the permit review or for records? I want to make sure you are getting the person you need. Alan

On Mon, Jan 30, 2017 at 8:33 AM, Jim Ruby <jim.ruby@wyo.gov> wrote:

Good Morning Alan:

Who should I talk to in Land quality regarding Brook and the filed appeal? Have a great week.

Jim

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--

Alan Edwards

Deputy Director

Administrator, Abandoned Mine Lands

200 West 17th Street

Cheyenne, Wyoming 82002

Office: [307-777-7062](tel:307-777-7062)

Alan.Edwards@wyo.gov

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John Barbula 674-6077
124 Kleenburn Rd
Ranchester, WY 82839

Gerald and Betty Legerski NONE?
118 Kleenburn Rd
Ranchester, WY 82839

Mary Brezik-Fisher 674-7451
32 Slater Creek Lane
Ranchester, WY 82839

Sadie Clarendon 763-592
PO Box 551
Story, WY 82842

Wendy Condrat NONE?
1560 Sate Hwy 345
Ranchester, WY 82839

William Long Trust
c/o John Araas 674-7451
PO Box 3288
319 W, Dow St
Sheridan, WY 82801

Anton Bocek 672-8523
11 Slater Creek Lane
Ranchester, WY 82839

Brook Collins 673-9014
38 Monarch Rd
Ranchester, WY 82839

Gillian Malone 674-6203
19 Bar 13 Rd
Big Horn, WY 82833

Jane Buyok
102 Monarch Rd
Ranchester, WY 82839

461-2942

City of Sheridan c/o Mayor Roger Miller PO Box 848 55 Grinnell Plaza Sheridan, WY 82801	675-4202
Town of Ranchester c/o Mayor Peter Clark PO Box 695 Ranchester, WY 82839	655-2283
Tongue River Fire Protection District c/o Ray Baker PO Box 477 Ranchester, WY 82839	655-9561
Sheridan County School Dist #1 c/o Superintendant Mart Kobza PO Box 819 Ranchester, WY 82839	655-9541
Big Horn Coal Co. 10980 S. Jordan Gateway South Jordan, UT 84095	801-539-3820
John & Vanessa Buyok 86 Monarch Rd Ranchester, WY 82839 jbuyok@honyocker.com	673-0068
William Bensel 32 River Rd Ranchester, WY 82839	655-3320
Joan Tellez 1380 Gladstone St Sheridan, WY	672-8860
Shannon Anderson Powder River Basin Resource Council 934 N. Main St Sheridan, WY 82801	672-5809

Marino Engineering
1370 McCausland Ave
St. Louis, MO 63117

314-833-3189