

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;

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(v) The proposed operation would:

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(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 subsides 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).

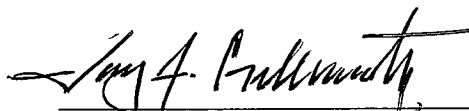
5. DEQ and the EQC are empowered with the designation and protection of alluvial valley floors through the permitting and enforcement process. Wyo. Stat. §35-11-406(n)(v) (LexisNexis 2015).

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

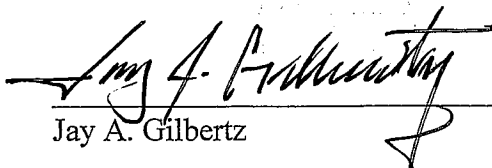
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Powder River Basin Resource Council
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Jay A. Gilbertz

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	byron wayne ubernosky	March 13, 2015
Signature	Printed Name	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

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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 Ubersnosky
Signature Printed Name Date April 25, 2016

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 PR

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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 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

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.

Andrew J. Kuhlmann (Wyo. Bar No. 7-4595)
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James LaRock (Wyo. Bar No. 7-5814)
Assistant Attorney General
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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

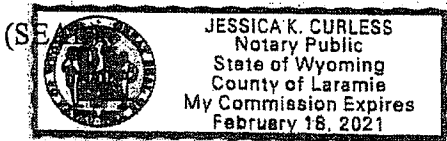
I, Alan Edwards, the Deputy Director of the Wyoming Department of Environmental Quality, have reviewed the Wyoming Department of Environmental Quality's responses to Objector Mary Brezik-Fisher and David Fisher's interrogatories, and I hereby confirm that they have been prepared under my direction and 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