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Department of Environmental Quality

Exhibit 24

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

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

**DEPARTMENT OF ENVIRONMENTAL QUALITY’S RESPONSE TO
POWDER RIVER BASIN RESOURCE COUNCIL’S FIRST SET OF
INTERROGATORIES AND REQUESTS FOR PRODUCTION OF DOCUMENTS**

Respondent, the State of Wyoming, Department of Environmental Quality (“Department”), through its undersigned counsel, hereby responds to Powder River Basin Resource Council’s First Set of Interrogatories and Requests for Production of Documents. 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, 33, and 34.

INTERROGATORIES

INTERROGATORY NO. 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.

RESPONSE:

The following DEQ staff were assigned commentary items from the Brook Mine permit application as follows:

Volume	Section	Description	Assigned Staff
I		Adjudication	Deanna Hill, Bj Kristiansen
II		Adjudication	Deanna Hill, Bj Kristiansen
III	Appendix D1	Land Use	Bj Kristiansen
	Appendix D2	History	Bj Kristiansen
	Appendix D3	Archeological Resources	Bj Kristiansen
	Appendix D4	Climatology	Bj Kristiansen, Dave Myers
IV	Appendix D5	Topography	Dave Myers
		Geology	Bj Kristiansen, Kim Medina
		Overburden Assessment	Dave Schellinger, Bj Kristiansen
V	Appendix D6	Hydrology-surface	Dave Myers, Matt Kunze
		Hydrology-groundwater	Muthu Kuchanur PhD, Bj Kristiansen
VI	Appendix D7	Soil Resources	Dave Schellinger
VII	Appendix D8	Vegetation	Jamie Jakes, Stacy Page
VIII	Appendix D9	Wildlife	Dave Myers
IX	Appendix D10	Wetlands	Dave Myers
X	Appendix D11	Alluvial Valley Floors	Bj Kristiansen, Matt Kunze
XI	Mine Plan	Mine Plan	Bj Kristiansen, Dave Myers, Kim Medina, Dave Schellinger, Muthu Kuchanur, Matt Kunze
XII	Reclamation Plan	Reclamation Plan	Bj Kristiansen, Dave Myers, Kim Medina, Dave Schellinger, Muthu Kuchanur, Matt Kunze, Doug Emme

Bj Kristiansen is the permit coordinator for the Brook Mine permit application. The other DEQ staff listed above helped review and comment on the permit application based upon their expertise.

District 3 - Sheridan

Bj Kristiansen, PG – Hydrogeologist and mining engineer – the Permit Application Coordinator

Dave Myers – Biologist - Surface water, wildlife, wetlands

Kim Medina, PG – Hydrogeologist - Geology, Groundwater

Doug Emme, PG – Mining Engineer - Mine Plan, Blasting, Reclamation Performance

Bond

Dave Schellinger – Soil Scientist - Topsoil and OB chemistry

Stacy Page (former employee) - Vegetation

District 1 - Cheyenne

Matt Kunze – Surface Water

Muthu Kuchanur, PhD – Groundwater, quality and modeling

Deanna Hill (retired) – Adjudication

Kim Pandullo – Adjudication, AVS

Also, the DEQ Director, Todd Parfitt, Deputy DEQ Director, Alan Edwards, Land Quality Division District 3 Supervisor, Mark Rogaczewski, and Land Quality Division Supervisor, Carol Bilbrough, were involved in the permit application review process in their supervisory capacity.

INTERROGATORY NO. 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.

RESPONSE:

LQD did not hire any outside advisors, consultants, or experts to review the Brook Mine permit application. The DEQ staff who reviewed the application and their roles are identified in the response to Interrogatory No. 1.

In addition to those staff members, the following government agencies were requested to comment on the indicated aspects of the Brook Mine permit application:

- Wyoming Department of Game and Fish – Wildlife
- U.S. Fish and Wildlife Service – Wildlife
- Wyoming State Engineers Office – Water Rights
- Wyoming State Historic Preservation Office – History, cultural resources
- Wyoming Attorney General – Adjudication
- DEQ Water Quality Division – General water narrative

INTERROGATORY NO. 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.

RESPONSE:

LQD is still in the process of drafting the CHIA. Work on the CHIA has been delayed due to the pending Brook Mine contested case hearing in front of the Environmental Quality Council. The objections to the Brook Mine permit application have raised hydrological concerns which could require the permit application and draft CHIA to be revised prior to finalization. Because of this, the anticipated timing of finalizing the CHIA is unknown. The final CHIA must be signed by the DEQ Director and the Wyoming State Engineer prior to issuance of the permit.

The DEQ staff involved in the writing of the CHIA include:

(1) Matt Kunze, Natural Resources Program Principle, Wyoming Department of Environmental Quality, Land Quality Division (WDEQ/LQD), Cheyenne, WY. Job Description: provide surface water hydrology support for environmental compliance and permitting of the coal and non-coal programs of the WDEQ/LQD.

(2) Muthu Kuchanur, Ph.D., P.E., Geology Supervisor, WDEQ/LQD, Cheyenne, WY. Job Description: provide groundwater hydrology support for environmental compliance and permitting of the coal and non-coal programs of the WDEQ/LQD.

The WDEQ staff involved in the direct review of the CHIA include:

(1) Kim Medina, Project Geologist, WDEQ/LQD, Sheridan, WY. Job Description: provide groundwater hydrology support for environmental compliance and permitting of the coal and non-coal programs of the WDEQ/LQD.

(2) Ursula Williams, Project Hydrogeologist, WDEQ/WQD, Sheridan, WY. Job Description: Project hydrogeologist for the Groundwater Section of the WDEQ/WQD.

(3) Jeremy Zumberge, Watershed Protection Monitoring Program Supervisor, WDEQ/WQD, Sheridan, WY. Job Description: Supervisor for the Monitoring Program of the Watershed Protection Program of the WDEQ/WQD.

The DEQ staff listed above may be contacted through DEQ's legal counsel.

The WSEO staff involved in the direct review of the CHIA include:

(1) Jeremy Manley, Natural Resources Program Principle, Wyoming State Engineer's Office (WSEO), Ground Water Division, 122 W. 25th Street, 1st Floor West, Cheyenne, WY 82002. Job Description: Performs work in the support of administration of groundwater rights for the Wyoming State Engineer's Office.

(2) Charlie Ferrantelli, Natural Resources Analyst, WSEO, Ground Water Division, 122 W. 25th Street, 1st Floor West, Cheyenne, WY 82002. Job Description: As of March 2016, Mr. Ferrantelli no longer works in the Ground Water Division but now works with the Interstate Streams Division of the WSEO.

(3) Adam Quist, Natural Resources Analyst, WSEO, Ground Water Division, 122 W. 25th Street, 1st Floor West, Cheyenne, WY 82002. Job Description: Performs work in the support of administration of groundwater rights for the Wyoming State Engineer's Office.

(4) Jason Feltner, Natural Resources Program Principle, WSEO, Surface Water Division, 122 W. 25th Street, 1st Floor West, Cheyenne, WY 82002. Job Description: Performs work in the support of administration of surface water rights for the Wyoming State Engineer's Office.

INTERROGATORY NO. 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.

RESPONSE:

The CHIA is drafted based upon the substance of the permit application. The Brook Mine permit application cannot be issued unless the CHIA finds that the proposed mining will not cause material damage to the hydrologic balance outside the mine permit boundary. The CHIA must be finalized and signed by the DEQ Director and the Wyoming State Engineer prior to the issuance of a permit for the Brook Mine. As noted in the response to Interrogatory No. 3, the final CHIA will be issued at some point after the EQC has issued a decision on the contested case. This will allow for any possible changes to the mine permit application to be incorporated into the CHIA.

INTERROGATORY NO. 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.

RESPONSE:

LQD designated property along and adjacent to Upper Slater Creek as AVF in early 2016. This property is within the permit boundary. Older AVF determinations have been made for the Big Horn Coal mine historically. These were for lands running along the Tongue River to approx. 2,000 feet east of I-90. The permit application states that the Tongue River floodplain will not be affected by mining. Therefore, an AVF determination of that area is unnecessary at this time. Should future changes to the permit indicate that the Tongue River AVF system will be impacted by mining, an AVF determination on adjacent lands within one-half mile of the permit boundary shall be made prior to any disturbance. These acreages have been identified on Exhibit D5.3-1, Surficial Geology, as Quaternary Alluvium (Qal).

INTERROGATORY NO. 6. Please explain when DEQ plans to issue a State Decision Document and/or a draft permit for Brook's proposed mine.

RESPONSE:

LQD will issue a State Decision Document (SDD) immediately prior to the issuance of the permit. LQD does not issue a "draft permit".

INTERROGATORY NO. 7. Please disclose how many water wells the groundwater modeling indicates will be impacted by Brook's proposed mine.

RESPONSE:

The list of wells and the modeled drawdown at these wells are provided in Brook Mine permit application, Mine Plan, Addendum MP-3, Table 4.9-1. Maximum Modeled Well Drawdowns during Mining.

INTERROGATORY NO. 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.

RESPONSE:

Ground water:

The locations of the monitor wells used to characterize baseline are shown in Brook Mine permit application, Appendix D6, Exhibit D6.2-1 Premine Monitor Well Locations and Table D6.2-1. Summary of Groundwater Monitoring Wells. Monitor well completion information is located in Appendix D6 – Hydrology, Addendum D6-7. The baseline groundwater monitoring program was determined to be adequate by LQD District III staff in Sheridan during the pre-application phase of the Brook Mine permit application.

Construction of the baseline groundwater monitoring network began in the third quarter of 2013 and was completed early in the fourth quarter 2013. Well clusters were installed on one mile centers as this spacing has proven effective for generating preliminary baseline data in exploration projects of the past, initiated by the Peter Kiewit Company, operator of the BHCC Coal Mine until the recent acquisition by Lighthouse Resources. No monitoring wells were completed in the overburden or interburden as no water was found in these units during drilling operations. An aquifer for this application is defined as a drilled hole capable of producing 0.5 gpm or greater.

A procedural plan for the monitoring well system is as follows:

1. One year or more of baseline data collection - hydrologic monitoring wells are installed a minimum of one year prior to mining, with a maximum 1 mile spacing to generate baseline data for the area in question.
 - Determine lithology during drilling with sample holes;
 - Sample for Baseline;
 - Water Quantity in gpm,
 - Water Quality for WQD parameters
 - Measure monthly for at least one year prior to mining
2. During Mining - Wells continually monitored through mine life, some monthly, some quarterly, dependent on pit conditions;
 - New monitor wells installed ahead of mining, as needed based on discovery;
 - Water depths, quality, hydrologic characteristics updates over time, throughout mine life;
 - New monitor wells installed behind mining in backfill to establish background water quality;
3. Post-Mining - Wells are in a long-term monitoring process during the reclamation phase
 - Wells in backfill monitored quarterly, then semi-annually to annually after 5 to 10 years
 - Record data for posterity to reassess changes to the aquifers or burden materials

It is generally understood that significant variances could occur within the groundwater model due to mining or encountering unforeseen variables. None of the other mine trench areas, from TR-2 on, have produced measurable quantities of groundwater in the overburden materials. The closeness of the outcrop to the mine panels essentially assure that the mine areas have little groundwater that has either leaked off or moved down-gradient over time.

Surface water:

As noted in Appendix D6 Section D6.1.5.1 of the Brook Mine permit application, four baseline surface water monitoring sites were established by the applicant within the permit boundary. Two locations were established on Slater Creek and two were established on Hidden Water Creek. The location of the sites is shown in Exhibit D6.1-2 of Appendix D6 of the Brook Mine permit application.

The baseline surface water monitoring program was approved during the pre-application phase of the Brook Mine permit application, which included review by LQD District III staff in Sheridan in 2013.

During the first round technical review of the permit application (April 2, 2015), the LQD requested that the permit application also include historical data from a USGS peak flow station on Slater Creek (Station No. 06299900) and data from a station (HWC-1) Hidden Water Creek that was operated by the Big Horn Mine. These data were used to further characterize the baseline surface water hydrology of the permit area.

INTERROGATORY NO. 9. Please explain how DEQ plans to respond to a subsidence occurrence at the mine site.

RESPONSE:

Objection. This interrogatory is vague and speculative.

Without waiving this objection, potential actions available to LQD in response to a subsidence incident may include:

- The operator notifies LQD of the subsidence and includes location and nature of the subsidence.
- LQD staff responds with a field visit/inspection. A log of the response and follow-up is created, including survey of the subsided area, approximate volume of subsided material, date of initial event, field description with photos.
- Determination of Brook Mine responsibility and possible changes to the Mine Plan.
- Craft a response proposal with the operator.
- Evaluate possible violation of the permit document.
- Monitor response activity, if any. Subsidence that does not affect surface use may be monitored for change over time but may not be reclaimed.
- Establish violation parameters, if appropriate.
- Continue field monitoring until the final reclamation has been performed. Make this an action item for subsequent quarterly or monthly mine inspections.

INTERROGATORY NO. 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.

RESPONSE:

The subsidence determination was delineated in Section MP.14 in the Mine Plan as well as Addendum MP-6. The subsidence potential was determined by using the Analysis of Retreat Mining Pillar Stability - Highwall Mining (“ARMPS – HWM”) stability program created by the National Institute for Occupational Safety and Health (NIOSH). The findings support a non-subsiding mining operation. Material strength data is not required by LQD for permit issuance since the mine is non-subsiding.

Regardless, relevant strength testing and analyses were included in Addendum D5-5 of Appendix D5, Topography, Geology, and Overburden Assessment. Baseline tests for rock strength were performed on representative samples of overburden, coal, and floor materials. The specific tests run were:

1. Splitting tensile Strength by Method of Brazilian Disk
2. Moisture and Density
3. Paraffin-coated Density, and
4. Unconfined Compressive Strength (“UCS”).

All tests were run as per the appropriate ASTM standards. For example, UCS for overburden was 3,500 psi, UCS for coal was 1,460 psi, and UCS for floor material was 500 psi. From those data, pillar stability factors were calculated to exceed recommended values calculated by the ARMPS_HWM. This program is an industry standard test and is required by MSHA in Highwall Mining. LQD finds the subsidence calculations adequate.

The subsidence plan was submitted to DEQ by the applicant. The plan was created by Cardno, office in Bluefield, VA. Headquartered in Brisbane, Australia. Total staff over 6,000. Number of offices 130. <http://www.cardno.com/en-au/Pages/Home.aspx>

INTERROGATORY NO. 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.

RESPONSE:

The Public Notice requirements In Chapter 7, Section 3 is only applicable when an underground coal mine will be permitted. The Brook Mine is a surface coal mine, therefore the public notice requirements in Chapter 7, Section 3 are not appropriate.

INTERROGATORY NO. 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.

RESPONSE:

The AML Division is currently aware of the following coal fires in the area:

Acme No 1 Fire, T57N, R84W, Section 10. This underground fire is extensive, has a long history, and is still active.

The Acme-Welsh Fire, T57N, R84W, Section 1, on BLM land. This is a surface, subsurface, and seam fire that is believed to have originally been associated with a mine at this location.

The Monarch Mine Area Fire(s), T57N, R84W, Sections 19 & 20, have had fire activity in the past, but presently AML is not aware of problems. In 2001, a wildfire caused surface coal slack to burn, and may have ignited the coal seam(s) in more than one area. AML did fire suppression in several areas at different times.

Hotchkiss Fire, T57N, R84W, Section 12, involves the Hotchkiss Mine area and there are fire expressions on the adjacent highwall of the Plachek Pit.

There are old records of an underground fire at the Monarch 45 or 45-2 Mine in 1979. AML has some old newspaper clippings about this event.

The AML is aware of the Ankney Ranch Fire, north of the area of interest, which is a seam fire, not mine related, therefore is not an AML site. We believe its existence is common knowledge in the area. Ankney Ranch Fire, 2.4 acres, is an outcrop fire actively burning in the Anderson Coal Bed which is 25' thick. Location is SWNW Section 6, T57N, R83W, (106° 55' 27.65" W, 44° 56' 48.59" N).

The Carney (Kleenburn) Coal Slack Fire (extinguished). T57N, R84W, Section 20. This was from fireworks igniting surface coal slack. The fire was excavated, quenched, and reclaimed.

INTERROGATORY NO. 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.

RESPONSE:

The responses to this interrogatory are organized by area.

Monarch Mine Area

The Monarch Mine Area holds overlapping underground mines known as, Old Monarch, Monarch 45, Monarch 45-2, and Kooi. These were very shallow mines that were left without ground support when abandoned. Continued failures of rooms within known mine extents at these mines is not uncommon, occurring every few years.

Monarch Mine Area, south of Buyok residence, May 2006, at least one subsidence feature was remediated. Information is limited.

Monarch Mine Area, south of Buyok residence, May 2004, a subsidence feature was remediated. Reference Task Order 6-04.

Monarch Mine Area, Monarch (Kooi) Mine area on Taylor property, November 2005, six subsidence sinkholes were backfilled and stabilized. Reference Task Order 25-05

Monarch Mine Area, Old Monarch and Kooi Mines, August 2013, one subsidence sinkhole on each mine was remediated. Reference Task Order 29-13.

Monarch Mine Area, Buyok-Monarch fire, July 2014, was related to a fire that had apparently been smoldering in a seam since before 1984. The SCS, under the RAMP program had excavated a cutoff trench (see Buyok newspaper clippings). Erosion on the river bank

resurfaced the fire and increased the fire activity. Reference Task Order 32-14 and Buyok Monarch Fire Info from Buyok.

Monarch Mine Area, Old Monarch and Kooi Mines, September 2015, several subsidence features were addressed at four mine sites; two were outside the area of interest. The two subsidence locations called Preston North and South were located above the Old Monarch Mine, one subsidence was located above the old Kooi Mine. Reference Task Order 21-15.

Monarch Mine Area, Old Monarch Mine and Kooi Mine, Sean Carrol Sire, Project 8-II, October 1997. Shafts, adits and subsidence features were addressed. Reference Project 8-II MINE SUBSIDENCE SITES FINAL REPORT BRS_MAR 1998,

Monarch Mine Area, Old Monarch Mine channel regrading project addressed subsidence and erosion, November 2013. Reference 63-P3 FINAL REPORT OLD MONARCH CHANNEL REGRADING PROJECT_BRS_01-2014.

Monarch Mine Fire, 1979, location was probably in Monarch 45 or Monarch 45-2 (aka New Monarch). Refer to Project 08_ROI SITE 8-24_HKM_01-08-1985 reported 1979 fire and Project 8 NEW MONARCH MINE FIRE_BUREAU OF MINES_1980 News clippings.

Monarch Mine Area fires, 2001-2002. Several mine fire problems were reported on the Monarch Mines area in late 2001 and into 2002. The initial cause was reported to have been a wildfire that ignited surface coal in several locations. Reference 17F-STATEWIDE RECLAMATION SITE 5B-SHERIDAN FIRE-outcrop.

Acme No. 1 Fire

Acme No. 1 fire area, July 2008, a fire-related subsidence was sealed and backfilled. Reference Task Order 7-08.

Acme No. 1 fire area, July 2009, a fire-related subsidence was sealed and backfilled. Reference Task Order 16-09.

There are references to earlier actions at the Acme No. 1 fire, probably in the 1980s. Big Horn Coal Company may have been involved with abatement actions. It is unclear if AML or SCS may have sponsored the work.

Kleenburn Site Fire

Carney/Kleenburn, September 2006, a small wildfire on what is now the Kleenburn recreation area was set by people using fireworks, this ignited a small coal slack fire. The fire was excavated and extinguished. Reference Task Order 17-06.

Carney Mine

Carney Mine, December 2009, mass grading to reduce and abate an extensive area of historic mine subsidence involving the Carney Mine which was a shallow underground with no apparent ground support. Reference 17J_BID 00110-T CARNEY MINE SUBSIDENCE MITIGATION NOVEMBER 19 2009.

Carney Mine, August 2014, two new sinkholes in a prior reclamation area were remediated. Reference Task Order 33-14.

Carney Mine air shaft under Sheridan County Road 345, August 2009, a mine air shaft under the road was causing damage, and was remediated by cement, backfill and resurfacing. Reference Task Order 14-09.

Custer-Armstrong

Custer-Armstrong Mine Site, August 2010. The work centered on closing mine openings and repairing a drainage, some subsidence was associated with the mine openings. Reference 17J_DOCS AND SPECS NORTHEAST WYOMING COAL CUSTER-ARMSTRONG SITE_TRIHYDRO_05-20-201.

Combined Mine Actions

Carney Mine and Custer-Armstrong Mine, June 2012, subsidence sinkholes were repaired. One sinkhole was at Carney, the others at Custer-Armstrong. Reference Task Order 13-12.

Acme No. 3, Kooi, and Old Monarch Mines, September 2016, each had a subsidence feature repaired. Reference Task Order 48-16.

List of References Provided:

File Name	Mine Area(s)
17F-STATEWIDE RECLAMATION SITE 5B-SHERIDAN FIRE-outcrop	Monarch Area
Buyok Monarch Fire Info from Buyok	Monarch Area
Project 08 ROI SITE 8-24 HKM 01-08-1985 reported 1979 fire	Monarch Area
Project 8 NEW MONARCH MINE FIRE_BUREAU OF MINES 1980 News clippings	Monarch Area
Project 8-13 REPORT Acme Fire	Acme Mo. 1
17J_BID 00110-T CARNEY MINE SUBSIDENCE MITIGATION NOVEMBER 19 2009	Carney
17J_DOCS AND SPECS NORTHEAST WYOMING COAL CUSTER-ARMSTRONG SITE TRIHYDRO 05-20-2010	Custer-Armstrong
63-P3 FINAL REPORT OLD MONARCH CHANNEL REGRADING PROJECT BRS 01-2014	Monarch Area
Project 8-II MINE SUBSIDENCE SITES FINAL REPORT BRS MAR 1998	Monarch Area, Sean Carroll
Task Order - 29-13 - monarch kooi subs	Monarch Area
Task Order 6-04 Monarch (Buyok) subsidence	Monarch Area
Task Order 7-08 Acme 1 Fire Subsidence	Acme Mo. 1
TASK ORDER 14-09 CARNEY AIR SHAFT	
TASK ORDER 16-09 Acme 1 fire subsidence	Acme Mo. 1
Task Order 17-06 Carney (Kleenburn) Slack Fire	Kleenburn
Task Order 21-15 - Old Monarch, Stormking	Monarch Area
Task Order 25-05 Monarch mitigate sub @Taylor	Monarch Area
Task Order- 32-14 -Buyok-Monarch Fire	Monarch Area
Task Order 33-14 - Carney Repair Kummerfeld	Carney
Task Order 48-16 -Acme, Kooi, Old Monarch	Monarch Area, Acme # 3
Task Order 13-12 Custer Armstrong Carney repairs	Custer- Armstrong Carney

INTERROGATORY NO. 14. Please explain how the DEQ reviewed and considered potential impacts to recreation uses in and around the Brook mine permit boundary.

RESPONSE:

DEQ reviewed the discussion of land uses in Appendix D.1 of the permit application. That analysis was prepared and submitted to DEQ by the permit applicant.

The Tongue River and Kleenburn Ponds are not within the proposed Brook Mine permit boundary. The Kleenburn Ponds are accessed by a road maintained by Sheridan County. This access is not scheduled to be encumbered by mining activities under the Brook Mine permit application. There are no plans to mine in or through any portion of the Tongue River or a major tributary stream – Goose Creek.

It is acknowledged that Access Yes Walk-in areas administered by the Wyoming Game and Fish Department are located inside and immediately adjacent to the proposed Brook Mine permit boundary. However, these agreements with private landowners to allow hunting and fishing access on private lands are administered by the Wyoming Game and Fish Department. Any changes to lands enrolled in the Access Yes Walk-in program are administered by the Wyoming Game and Fish Department.

INTERROGATORY NO. 15. Please explain how DEQ evaluated and required buffers around public roads and streams in reviewing Brook’s proposed mining operations.

RESPONSE:

Public Roads:

County roads will be used for haulage where the trucks leave the minesite. This occurs in year 1, with the TR-1 Pit coal hauled south to highway 338. During years 8 through 11, coal will be hauled using the Slater Creek Road and the South Ash Creek Roads to highway 345. County roads will be redesigned to allow for industrial traffic, working with Sheridan County on long term planning prior to use. Buffering is not required where the surface owner has worked out a Surface Use Agreement (SUA) to use the roads for mine transportation. Haulroads will be designed and certified ahead of mining by a revision submittal to the permit.

Streams:

In the third round technical review of the permit application (November 12, 2015), the WDEQ/LQD required that a minimum 100-foot buffer zone be applied to Slater Creek within the permit boundary after the WDEQ/LQD determined that Slater Creek was an intermittent stream. The requirements for a buffer zone on intermittent and perennial streams are found in LQD Coal Rules and Regulations Chapter 4, Section 2(r)(ii)(A) and Section 2(r)(ii)(B). As stated in Mine Plan Section MP.6.1 of the Brook Mine permit application, the minimum 100-foot buffer along Slater Creek will be marked in the field prior to commencing mining disturbance. The extent of the buffer is shown on Mine Plan Exhibit MP.5-1.

All other streams within the proposed Brook Mine permit boundary are ephemeral.

In the second round technical review of the permit application (August 12, 2015), the WDEQ/LQD requested no alternate sediment control measures (ASCMS) be used within one-half mile of any Class 2 streams such as the Tongue River or Goose Creek. In accordance with LQD Guideline No. 15-*Alternative Sediment Control Measures-Coal*, more traditional sediment control

methods (i.e., sedimentation impoundments) should be used for disturbed areas that are within one-half mile of Class 1 and Class 2 streams. As stated in Mine Plan Section MP.5.1 of the Brook Mine permit application, ASCMs will not be used as the primary form of sediment control within one-half mile of channel distance from Goose Creek or the Tongue River. Mine Plan Exhibit MP.5-1 shows the half mile buffer from the Tongue River and Goose Creek for which ASCMs will not be used as the primary sediment control.

INTERROGATORY NO. 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.

RESPONSE:

Objection. This interrogatory is vague and ambiguous in its use of the undefined term, “highwall mine”. A highwall is a common feature in many types of mines, while highwall mining is a particular mining technique. The question does not clearly identify which form of highwall is intended.

Without waiving this objection, DEQ interprets PRBRC’s use of the term, “highwall mine”, to refer to mines that have used highwall mining techniques. LQD has previously permitted the following mines that are either currently using, have used, or have proposed using highwall mining techniques:

Permit No.	Mine Name	Company Name	Mine Type	District ID	Comments
PT0331	Medicine Bow	Arch of Wyoming LLC	Surface	1	Surface mining with some previous highwall mining; mine inactive and in reclamation
PT0338	Jim Bridger	Bridger Coal Co.	Surface / Underground	2	Surface, highwall, underground longwall
PT0377	Seminole No. 2	Arch of Wyoming LLC	Surface	1	Surface mine with some previous highwall mining; mine inactive and in reclamation
PT0379	Kemmerer	Westmoreland Kemmerer LLC	Surface	2	Active highwall
PT0467	Black Butte	Black Butte Coal Co.	Surface	2	Partial surface and partial highwall
PT0730	Carbon Basin	Arch of Wyoming LLC	Surface / Underground	1	Surface and highwall conducted; surface, highwall, and longwall approved but not currently occurring

REQUEST FOR PRODUCTION

REQUEST FOR PRODUCTION NO. 1. Provide a copy of any written findings by DEQ made pursuant to W.S. 35-11- 406(n).

RESPONSE:

DEQ does not possess any documents responsive to this request. DEQ has not yet issued any written findings pursuant to Wyoming Statute § 35-11-406(n). Those findings will not be issued until the permit application is ready for final issuance.

REQUEST FOR PRODUCTION NO. 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.

RESPONSE:

Objection. This request for production requests documents protected by the deliberative process privilege. DEQ has not made a decision on the issuance or denial of the permit or the CHIA-related findings required to make such a decision. DEQ is still in the deliberative process of drafting a CHIA for the Brook Mine. *See Aland v. Mead*, 2014 WY 83, ¶ 20, 327 P.3d 752, 761-62 (Wyo. 2014). The draft CHIA is therefore covered by deliberative process privilege and will not be produced.

Without waiving this objection, DEQ has not yet issued any written findings pursuant to Wyoming Statute § 35-11-406(n). Documents that are not privileged and that may be responsive to this request have been produced in response to Request for Production 8.

REQUEST FOR PRODUCTION NO. 3. Provide a copy of any written findings by DEQ made pursuant to W.S. 35-11- 406(m).

RESPONSE:

DEQ does not possess any documents responsive to this request. DEQ has not made any written findings pursuant to Wyoming Statute § 35-11-406(m).

REQUEST FOR PRODUCTION NO. 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.

RESPONSE:

DEQ does not possess any documents responsive to this request. DEQ staff have not made any such written recommendation.

REQUEST FOR PRODUCTION NO. 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).

RESPONSE:

DEQ does not possess any documents responsive to this request. DEQ has not yet calculated or set the amount of the reclamation bond that would be required for the Brook Mine or 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”.

REQUEST FOR PRODUCTION NO. 6. Please provide a copy of any workbooks or spreadsheets used by DEQ in calculating the reclamation bond amount.

RESPONSE:

Responsive documents are included in the folder, “PRBRC RFP 6”, on the disc enclosed with these responses.

DEQ has not yet calculated the reclamation bond amount that would be required for the Brook Mine. However, when DEQ calculates the bond amount, DEQ staff will use the LQD Guideline 12 – Standardized Reclamation Performance Bond Format and Cost Calculation Methods. A copy of the current Guideline 12 is being produced and is also available on the DEQ website at: <http://deq.wyoming.gov/lqd/resources/guidelines/>

REQUEST FOR PRODUCTION NO. 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).

RESPONSE:

Recipients of those notices within one-half mile of the propose permit document can be found in Volume 1 – Adjudication, Appendix B, pages B-1 through B-107 of the permit application, which DEQ has already produced to the parties.

REQUEST FOR PRODUCTION NO. 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.

RESPONSE:

Responsive documents are included in the folder, “PRBRC RFP 8”, on the disc enclosed with these responses.

REQUEST FOR PRODUCTION NO. 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.

RESPONSE:

Objection. This request for production is vague and ambiguous. It is unclear what this request for production intends the terms, “draft or final mine permit” and “written determinations by DEQ related to permit terms and conditions”, to mean. Additionally, this request for production requests documents protected by the deliberative process privilege.

Without waiving these objections, responsive documents, that are not privileged, are included in the folder, “PRBRC RFP 9”, on the disc enclosed with these responses.

DEQ interprets the term, “draft or final mine permits” as referring to the permit application. DEQ has already provided the parties with a copy of the permit application.

DEQ interprets the meaning of “other written determinations by DEQ related to permit terms and conditions” as referring to comments raised during the technical review process regarding the permit application. Copies of those comments and responses are being produced in response to this request.

REQUEST FOR PRODUCTION NO. 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.

RESPONSE:

Responsive documents are included in the folder, “PRBRC RFP 10”, on the disc enclosed with these responses.

REQUEST FOR PRODUCTION NO. 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.

RESPONSE:

Responsive documents are included in the folder, “PRBRC RFP 11”, on the disc enclosed with these responses.

REQUEST FOR PRODUCTION NO. 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.

RESPONSE:

Responsive documents are included in the folder, “PRBRC RFP 12”, on the disc enclosed with these responses.

REQUEST FOR PRODUCTION NO. 13. Please provide a copy of any AML reports related to coal mines in the area.

RESPONSE:

Responsive documents are included in the folder, “PRBRC RFP 13”, on the disc enclosed with these responses.

REQUEST FOR PRODUCTION NO. 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.

RESPONSE:

Objection. This request for production is overly broad and unduly burdensome. This request for production is also vague and ambiguous by using the term, “Sheridan County subsidence study”. The AML Division has conducted multiple subsidence-related projects in Sheridan County and it is unclear which particular “study” this request for production refers to.

Without waiving this objection, responsive documents are included in the folder, “PRBRC RFP 14”, on the disc enclosed with these responses. Documents produced in response to Request for Production 13 are also produced for the purpose of responding to this request.

In addition to other documents provided in the response to PRBRC Request No. 13, AML has reports on this seismic study, and drill hole logs from a subsequent drilling investigation along Decker Road. The reports listed below contain interpretation of seismic data anomalies that may indicate the presence of potential mine voids. The data interpretations are intended to guide selection of drill hole locations for confirmatory drilling. At present, data collection is incomplete, and further investigation will be directed by iterative data collection and confirmation. A report will be forthcoming once the data collection phase is complete.


- **Summary of Anomalies Data Report:** Work Phase 7: Custer Armstrong; Work Phase 10: Dietz, Stormking, Monarch 45; Work Phase 11: Acme No. 3, Carney, Old Monarch, Monarch 45-2, Monarch, Goldenrod, Foothills. Fugro Document No.: 04.79160017_3.1
- **Summary of Anomalies:** Dietz Mine Decker Rd. and Decker Spur Sheridan, WY Work Phase 8. Fugro Document No.: 04.79160017_2
- Drill logs for Stations 124, 264, 268, 364, 1163, 1210, 1218, 1226 along Decker Road, as selected based upon the Dietz Mine Decker Road seismic report.

REQUEST FOR PRODUCTION NO. 15. Please provide a copy of any searches ran through the Applicant Violator System related to this permit application.

RESPONSE:

Responsive documents are included in the folder, “PRBRC RFP 15”, on the disc enclosed with these responses. DEQ has made two AVS checks so far. The first search was run in December, 2014 and it was clean. Unfortunately, the document recording that search was later inadvertently lost during a software change. The second search was run on December 2, 2016 and a copy of that search is being produced here.

Dated this 20th day of April, 2017.



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Verification

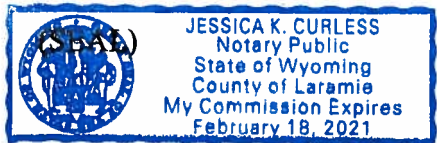
I, Alan Edwards, the Deputy Director of the Wyoming Department of Environmental Quality, have reviewed the Wyoming Department of Environmental Quality's response to Powder River Basin Resource Council's First Set of Interrogatories, and I hereby confirm that they have been prepared under my direction 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

CERTIFICATE OF SERVICE

I hereby certify that on the 20th day of April, 2017, a copy of the foregoing document with its attachments was served via U.S. mail and a copy of the foregoing document without attachments was served via electronic mail on the following:

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