GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

State of Utah
DEPARTMENT OF NATURAL RESOURCES

MICHAEL R. STYLER
Executive Director

Division of Oil, Gas and Mining
JOHN R. BAZA
Division Director

March 20, 2018

John Byars, General Manager
Canyon Fuel Company, LLC
597 South SR24
Salina, Utah 84654

Subject: Conditional Approval of 4 Right 4 East Panel, Canyon Fuel Company, LLC, Sufco Mine, C/041/0002, Task #5615

Dear Mr. Byars:

The above-referenced amendment is approved conditioned upon receipt of 2 clean copies prepared for incorporation. Please submit these copies by April 20, 2018. Once we receive these copies, final approval will be granted.

A stamped incorporated copy of the approved plans will also be returned to you at that time, for insertion into your copy of the Mining and Reclamation Plan.

If you have any questions, please call me at (801) 538-5325.

Sincerely,

Daron R. Haddock
Coal Program Manager

DRH/sqs
O:\041002.SUF\WG5615 4R4E\CONDITIONALAPPROVAL.DOC

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UTAH DNR OIL, GAS & MINING

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Technical Analysis and Findings

Utah Coal Regulatory Program

PID: C0410002
TaskID: 5615
Mine Name: SUFCO MINE
Title: 4 RIGHT 4 EAST PANEL

General Contents

Maps and Plans

Analysis:

The amendment meets the State of Utah R645 requirements for Maps and Plans.

A previous deficiency identified references to plates 5-10A, 5-10B, 5-10C 5-10AC, 5-10BC, and 5-10CC within the narrative of the amendment but were not included. These missiing plates were also notably absent from the MRP and confidential folders. Prior to final approval Permittee was required to either provide the Division with these plates, or remove all references to them within the narrative.

Permittee has submitted Plates 5-10A and 5-10C and omitted all references to the other plates within the narrative thus satisfying the requirements of this amendment.

jeatchel

Environmental Resource Information

General

Analysis:

The amendment meets the R645-301-411 requirements for general environmental resource information. Volume 1, Chapter 4, Section 4.10, page 4-1 provides a description of the premining resources and land uses within the proposed permit area and adjacent areas. Plate 4-1 is a map indicating existing land uses of the permit area. The area above and around the 4R4E panel is designated mostly as general big game winter range with some rangeland/grazing land nearby.

tmiller

Historic and Archeological Resource Information

Analysis:

The amendment meets the State of Utah R645-301-411 requirements for historic and archeological resource information. A cultural resource inventory was performed in July of 2017 by Tetra Tech and it concluded that there were no sites found within the area of the panel that are eligible for listing the National Register of Historic Places. A Determination of Significance and Effect signed by the Forest Service and the Utah SHPO indicated concurrence on the determination of no effect due to the absence of sites within the project area. A copy of this document is found in Appendix 4-2 of the amendment.

tmiller

Vegetation Resource Information

Analysis:

The amendment meets the State of Utah R645-301-320 requirements for vegetation resource information. Section 3.1.1 (Page 3-4) provides a description of the plant communities and vegetative types within the proposed permit area. The description includes "pinyon-juniper, sage brush/grass, and mountain sagebrush types of the desert shrub biome" as vegetative types found in the area. Plate 3-1 is a map delineating the existing plant communities in the area surrounding the 4R4E panel location. According to Plate 3-1, the panel will be located under primarily Douglas fir/spruce/limber pine community as well as pinyon-juniper/mountain mahogany. There is also some ponderosa pine/mountain mahogany/Manzanita community present in the area over the panel.

tmiller

Fish and Wildlife Resource Information

Analysis:

The amendment meets the State of Utah R645-301-322 requirements for fish and wildlife resource information. The primary wildlife concerns for this area are deer and elk high priority and critical winter range, potential raptor nesting habitat, and the sage grouse lekking, nesting, and brood-rearing habitat located above the 4R4E panel. Information regarding deer and elk winter ranges is provided on Plate 3-2, "Elk Range," Plate 3-3, "Deer Range & Raptor Nests," Appendix 3-15 Figure B, and in the narrative in Section 3.2.2.2 among other places. Raptor information is included in Appendix 3-4, Appendix 3-15, and in Section 3.2.2.2 (page 3-10) of the narrative. The Permittee has included information regarding sage grouse habitat in Section 3.2.2.2 (page 3-12) of the narrative.

tmiller

Land Use Resource Information

Analysis:

The amendment meets the State of Utah R645-301-411 requirements for land use resource information. Volume 1, Chapter 4, Section 4.10, pages 4-1 through 4-7 of the MRP provides a statement of the condition of the land within the permit area. Page 4-4 provides a narrative regarding the current uses of the land. It lists rangeland, timber harvesting, and general big game range as principle uses. Light yearly recreation includes camping, firewood gathering, hunting, some snowmobiling, and sightseeing from late spring to late fall. Overall, recreation is light but can become extremely heavy during the deer and elk hunts.

tmiller

Hydro Baseline Information

Analysis:

The application meets the State of Utah R645 requirements for Baseline Information.

Page 7-19 cites the drillhole location map and drillhole logs figures as Plate 7-10 and Plate 7-11, respectively.

aumarva

Hydro Baseline Cumulative Impact Area

Analysis:

The amendment meets the State of Utah R534 requirements for Hydrologic Baseline Cumulative Impact Area.

The proposed 4R4E panel is located within the Quitchupah and Muddy Creek Cumulative Impact Area (CIA) located in Sevier County, Utah west of the town of Emery. The CIA is depicted on Plate 1, Location Map of the Cumulative Impact Area Quitchupah-Muddy Creek and Plate 2, Workings Map Cumulative Impact Area Quitchupah-Muddy Creek of the Cumulative Hydrologic Impact Assessment (CHIA). The hydrologic and geologic information required to establish the CIA has previously been provided to the Division. Federal lease U-63214 were awarded to the Permittee in 1989, on-going water monitoring data continues to be provided to the Division at 13 locations, 6 springs and 7 streams stations, the CIA does not require a revision at this time.

aumarva

Probable Hydrologic Consequences Determination

Analysis:

The amendment meets the State of Utah R645 requirements for Probable Hydrologic Consequences Determination.

The approved MRP discusses the probable hydrologic consequences of mining beginning on page 7-26. A specific study of the surface and groundwater hydrology of the Quitchupah Tract is provided in Appendix 7-17. The 4R4E Panel is located within the Quitchupah Tract, within the U-63214 lease.

With the exception of subsidence, which is expected to be approximately 2 feet in the 4R4E area, no surface disturbance is proposed or anticipated. Further, no surface or groundwater resources have been identified in the area above 4R4E Panel or within the area of expected subsidence. The Permittee confirms the lack of water resources in the narrative provided on page 7-18 of the MRP. In 2017, the Permittee completed a walking survey above 4R4E and in the immediately adjacent areas and was unable to identify any surface or groundwater resources. In addition, the Permittee drilled several exploration wells in 2017, and no water was encountered during drilling. The Permittee does not provide walking survey dates or information on drilling depths to aid in hydrologic review.

Though no surface and groundwater resources have been identified above or immediately adjacent to the proposed 4R4E panel, one natural pond is established approximately 3/4 mile northwest of the Panel and a runoff catchment is located 1/2 mile just north of the panel. The Permittee does not mention the runoff catchment in the narrative, however it is pictured on the water rights map Plate 7-2. These two ponds are unlikely to be impacted by the panel because they are well outside the area of expected subsidence and they have already been undermined by long wall panels in the Quitchupah Lease.

Furthermore, due to the lack of water resources in the area above and immediately adjacent to the proposed panel, diminution or interruption of water resources is no anticipated as a probable hydrologic consequence. Similarly, contamination or impacts to water quality are also not anticipated.

The permittee provides information on the walking survey to evaluate the presence of water resources in the 4R4E area, the Permittee provides, on page 7-18, a detailed account of the surface and ground water resources surveys conducted in the area above and immediately adjacent to the proposed panel. The Permittee also provides in Table 7-11 and Plate 7-10 the drill hole information, logs, and maps for two exploratory wells drilled near 4R4E panel. No water was encountered.

aumarva

Maps Archeological Site Maps

Analysis:

The amendment meets the State of Utah R645-301-411 requirement for archeological site maps. The map included in Appendix 4-2 shows the approximate limit of potential subsidence from the 4R4E panel and indicates no known NRHP-eligible sites are within or adjacent to the subsidence limit.

tmiller

Maps Monitoring and Sampling Locations

Analysis:

The amendment meets the State of Utah R645 requirements for Monitoring and Sampling Location maps.

Plate 7-3, Hydrologic Monitoring Stations depicts the monitoring and sampling locations in the area of the proposed 4R4E panel.

aumarva

Maps Subsurface Water Resources

Analysis:

The amendment meets the State of Utah R645 requirements for Subsurface Water Resource Maps.

The previously approved baseline data, Probable Hydrologic Consequences and subsequent CHIA document found that groundwater occurs in perched zones of limited areal extent within the area of the proposed 4R4E panel. The data provided in Appendix 7-17 and 7-18 of the approved MRP demonstrate that none of the formations down through the Blackhawk formation support a continuous aquifer. The ground water systems in the area are perched and discontinuous. Furthermore, through walking surveys and exploratory drilling operations, the Permittee states on Page 7-18 of the MRP that no water resources were encountered.

aumarva

Maps Surface Water Resource

Analysis:

The amendment meets the State of Utah R645 requirements for Surface Water Resource Maps.

Plate 7-2 identifies the state appropriated water rights within the permit and adjacent area. Additionally, Plate 7-3 depicts the surface water resources and drainages both within and adjacent to the permit area (including the proposed location of Panel 4R4E.

aumarva

Operation Plan

Air Pollution Control Plan

Analysis:

The amendment meets the State of Utah R645-301-422 requirements for compliance efforts undertaken by the Permittee with the Utah Division of Air Quality. Volume 1, Chapter 4, Section 4.2, pages 4-18 through 4-20 describes the air quality compliance information. The 4R4E amendment proposal does not alter the standards or plans and does not warrant changes to the existing air pollution plan.

tmiller

Subsidence Control Plan Renewable Resource

Analysis:

The amendment meets the State of Utah R645 requirements for Renewable Resources Survey.

The Permittee provides a subsidence survey in Plate 5-10. The permittee also provides information on Page 7-18 of the MRP of a walking survey and exploratory drilling where no water was encountered above or immediately adjacent to the proposed 4R4E panel. Furthermore, two surface ponds are located north and 3/4 mile northwest of the proposed panel. These ponds have water rights, have already been undermined by longwall mining, and are well outside the area of potential subsidence impacts. Based on the information provided, no renewable resources (i.e. water resources) would expect to experience material damage or diminution in the event of mine subsidence.

aumarva

Fish and Wildlife Protection and Enhancement Plan

Analysis:

The amendment meets the State of Utah R645-301-333 and R645-301-358 requirements for fish and wildlife protection and enhancement. Appendix 3-15 Figure B indicates the limit of potential subsidence of the 4R4E panel in relation to critical and high priority deer and elk winter range. Due to the possibility of subsidence associated with the mining of the 4R4E panel affecting these important habitats, the Permittee has included a plan to monitor and mitigate subsidence cracks in the area. In addition to the existing subsidence monitoring plan (found in Section 5.2.5.1) and existing mitigation commitments (found in Sections 3.3.3.3 and 3.4.1.2), the amendment also states: "The permittee is obligated to monitor and mitigate subsidence that poses a risk to livestock and wildlife as soon as feasibly possible. ... An effort will be made by the permittee to monitor subsidence between 60 and 90 days following completion of the 4R4E longwall panel or soon as access is feasible."

tmiller

Fish and Wildlife Bald and Golden Eagles

Analysis:

The amendment meets the State of Utah R645-301-322, R645-301-333, and R645-301-358 requirements for fish and wildlife bald and golden eagle protection. A July 2017 raptor survey included in Appendix 3-4 indicated no known eagle nests were located in the area of the 4R4E panel. The map contained in Appendix 3-15 indicates the area of potential subsidence and shows no raptor nests are found within or adjacent to this area.

tmiller

Vegetation

Analysis:

The amendment meets the State of Utah R645-301-331 requirements for protection of vegetation resources. Volume 1, Chapter 3, Section 3.3.2 and 3.3.3 provides anticipated impacts on vegetation from subsidence and plans to minimize disturbances and adverse impacts. The proposed amendment does not include any new surface disturbance so any disturbance to vegetation will come only from potential subsidence. The approved MRP adequately addresses plans for protection of vegetative resources included in the amendment.

tmiller

Hydrologic Ground Water Monitoring

Analysis:

The amendment meets the State of Utah R645 requirements for Groundwater Monitoring.

Appendix 7-17 discusses groundwater monitoring conducted in the Quitchupah Tract. The Permittee began quarterly monitoring of five creek sites, four springs, 13 monitoring wells, mine discharge water and one roof drip site within the mine in 1983. Once the Quitchupah Coal Lease Tract was acquired in 1989, three springs, one creek and seven monitoring wells were added to the monitoring program. The monitoring wells are monitored for water level only. Currently, 7 stream and 6 spring locations are still being monitored quarterly. Upon review of the baseline data provided in Appendix 7-17 and the narrative provided in Chapter 7, no groundwater springs or seeps have been identified in the area of 4R4E. Furthermore, through exploratory drilling, the Permittee also did not encounter any water. The closest spring sites that are monitored are well outside the potential limits of subsidence.

aumarva

Hydro Surface Water Monitoring

Analysis:

The amendment meets the State of Utah R645 requirements for Surface Water Monitoring.

The Permittee does not identify any surface water within the area above and immediately adjacent to the proposed 4R4E Panel. Surface water monitoring is ongoing within the tract, however, with the current water monitoring plan identifying 7 stream sites within the Quitchupah Tract. Further, monitoring site 006D is located on the South Fork of Quitchupah just above the confluence with the North Fork of Quitchupah Creek, with quarterly monitoring since

2012. Monitoring site 007 is located northwest of the panel and has been monitored quarterly since 1979. Monitoring site 042 is located downstream, and has been monitored quarterly since 1979 to the present.

aumarva

Maps Affected Area

Analysis:

The amendment meets the State of Utah R645 requirements for Affected Area Maps.

A previous review of plates submitted in this amendment revealed a discrepancy in projected subsidence over the 5R4E panel. The projected subsidence depicted in Appendix 6-4 was not the same as depicted on Plates 5-10 and 5-10C. Permittee was required to alter Plates 5-10 and 5-10C to preserve consistency in the depiction and identification of the potential subsidence limints.

Permittee has made changes to Plates 5-10 and 5-10C to show that projected subsidence lies directly abouve the location of the 4R4E panel. These changes are now consistent with what is depicted in Appendisx 6-4, and therefore satisy the requirements of this amendment.

jeatchel

Reclamation Plan

Hydrological Information Reclamation Plan

Analysis:

The amendment meets the State of Utah R645 rules for Hydrologic Reclamation Plan.

As the proposed mining of panel 4R4E does not call for any additional surface disturbance, the approved hydrologic reclamation plan does not require a revision with this amendment.

aumarva

CHIA

CHIA

Analysis:

The amendment meets the State of Utah R645 requirements for Cumulative Hydrologic Impact Assessment (CHIA).

The proposed location of panel 4R4E is located in the center of the existing Cumulative Impact Area (CIA). The Quitchupah and Muddy Creek CHIA was completed initially in 1989 with a second revision in 2005. The addition of the 4R4E panel does not require revisions to the existing CHIA as the potential impacts from coal mining activity in the area of the panel has been previously examined and a finding made by the Division that the mine plan has been designed to prevent material damage to the hydrologic balance.

aumarva