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STATE OF UTAH
NATURAL RESOURCES & ENERGY
Oil, Gas & Mining

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Scott M. Matheson, Governor
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September 30, 1982

Mr. Allen D. Klein, Director
Western Technical Center
Office of Surface Mining
Brooks Towers
1020 Fifteenth Street
Denver, CO 80202

RE: Apparent Completeness REview
Beaver Creek Coal Company
Gordon Creek #2 Mine
ACT/007/016
Carbon County, Ut

Dear Mr. Klein:

Please find enclosed a final copy of the Division's Apparent completeness Review (ACR) for Beaver Creek Coal Company's Gordon Creek #2 Mine as forwarded to the operator. OSM's concerns have been incorporated into the review.

If you or your staff have any questions relative to this review, please don't hesitate to call either myself or Steve Cox of my staff.

Sincerely,

JAMES W. SMITH, JR.
COORDINATOR OF MINED LAND DEVELOPMENT

JWS/tck
enclosure

APPARENT COMPLETENESS REVIEW

Beaver Creek Coal Company
Gordon Creek #2 Mine
ACT/007/016, Carbon County, Utah

UMC 782.13-.14 Identification of Interests and Compliance Information

The applicant should submit all information pertaining to surface and mineral ownership and control including any recent changes in interests.

UMC 782.18 Personal Injury and Property Damage Insurance Information

The applicant lacks a statement that the insurance policy will be renewed for the life of the mine. The existing insurance policy is in effect only until 1984. The policy should include a rider requiring that the insurer notify the Division whenever substantive changes are made in the policy, including any termination or failure to renew in accordance with UMC 806.14(c).

UMC 782.19 Identification of Other Licenses and Permits

List all other licenses and permits applied for or received as needed to conduct the proposed underground coal mining activities. Include the type of permit or license, name and address of the issuing authority, identification numbers and dates of approval or disapproval.

The permit for the sanitary system has not received final approval by the Utah Department of Health. The applicant should take the necessary measures to acquire this permit.

UMC 783.12 General Environmental Resources Information

(a) Describe in detail the size, sequence and timing of the mining of each subarea of the Castlegate "A" and Hiawatha seams which will require individual permits over the total life of the proposed underground coal mining activities. Clearly and completely delineate these subareas on a map in accordance with UMC 783.24(c).

(b) Present an archaeological survey map which includes present and proposed surface disturbance and potential subsidence to show the relationship between these areas and the recorded sites. If there are plans for future expansion of facilities or possible impacts from subsidence, etc., to the four historic sites mentioned, a commitment to reconsider these structures for eligibility on the National Register of Historic Places should be made. During mining operations, if any previously unidentified cultural resources should be discovered, the operator should agree to ensure that the site is not disturbed and to notify the regulatory authority immediately.

Name the author and principal investigator of the archaeological study either on the title page or in the introduction. Descriptions of the historic sites (architecture, environment, etc.) and associated site forms should be included in the mine plan.

UMC 783.14 Geology Description

(a)(1)(ii) Provide copies of lithologic logs for strata disturbed by surface operations, if available. Discuss location and depth of corresponding boreholes.

(a)(1)(iii) Provide chemical analysis of overburden, interburden and stratum below lowest coal seam to be mined as per required.

(a)(2)(i) Provide map of piezometric surface if data are available from boreholes.

(a)(2)(ii) Provide map of interburden isopach between the Castlegate "A" Seam and the Hiawatha Seam.

Discuss geology of the roof rock for the Hiawatha and Castlegate "A" seams. The plan calls it variable. In what way? Is the rock competent, subject to roof falls, are there numerous fluvial channels? Are channels mapped, do they act as aquifers?

Discuss the Bob Wright Seam more extensively. How thick is the seam, is it mineable at any point within the permit area, how extensive is the seam, is the roof rock competent?

(a)(2)(iii) Provide chemical analysis of roof and floor in terms of pyrite, marcasite, potential alkalinity, salinity (EC), pH and clay content for Hiawatha and Castlegate "A" seams.

(a)(2)(iv) Provide pyrite and sulfate content for Hiawatha Seam.

A comment on page 6-13 references the Blind Canyon Seam, discuss its relevance to the Gordon Creek Mine Plan.

The applicant should provide chemical analysis of each strata of overburden to be removed including the layer immediately below the coal seam. Analyses should be geared at ascertaining whether acid-forming or toxic-forming materials are present in any strata.

The applicant should submit a map deliniating the locations of all faults on and adjacent to the mine plan area.

UMC 783.13-.15 Ground Water Information

The applicant has provided information regarding the regional ground water conditions and used this information to describe the ground water conditions in the mine area. Specific information regarding the recharge areas and the direction of flow within the aquifers in the mine area is requested.

UMC 783.16 Surface Water Information

The applicant does not include information on the quality and quantity of receiving waters. Water quantity and quality data collected at the monitoring stations during 1981 and 1982 should be included in the application to provide information on seasonal variation of the parameters.

The description of the surface water hydrology centers upon the Huntington Canyon #4 Mine and the Huntington Creek drainage. The applicability of this description to the Gordon Creek #2 Mine permit area is not specifically addressed. Clarification of this would improve the creditability of the description.

UMC 783.17 Alternative Water Supply Information

The applicant lacks a description of the quality of the alternative water supply.

UMC 783.18 Climatological Information

Indicate the distances of Wild Horse Ridge, Valley Floor and Meetinghouse Ridge monitoring stations from the permit area and give the meterological data from each if available. Figures 11-1, 11-2 and 11-3 on pages 11-6, 11-7 and 11-8 showing wind roses for these monitoring stations are missing.

UMC 783.19 Vegetation Information

Productivity measurements for reference areas are not critical until the time of comparison with the revegetated areas and do not need to meet statistical adequacy until that time. However, a statement of productivity (preferably a letter from the Soil Conservation Service) should be provided. Reference areas should be in fair condition or better or they will have to be managed for improvement.

Sample adequacy for cover and shrub density should be shown for the Douglas fir vegetation community. Sample adequacy for cover, production and woody plant density for all affected communities should be computed using a two-tailed "t" at appropriate confidence levels and a "d" value of 0.1.

The vegetation map (Plate 9-1) should be updated to show location of reference areas in relation to the disturbed area.

14MC 783.22 Land-use Information

Submit a map and supporting narrative of the uses of the land on and adjacent to the permit area at the time of application.

UMC 783.24 Maps: General Requirements

(e) The exact location of the following structures should be included on the Surface Facilities Map 3-1: access roads; lower substation and transmission lines; water supply system; and, sewage system. Also include the location of all other surface and subsurface man-made features within, passing through or passing over the permit area. Topographic expression is requested for this map.

Watersheds used in computation of diversion structure design should be clearly delineated on this map. Example: undisturbed areas A and B are mentioned in the plan on pages 7-35-37, but do not appear on any map.

The applicant failed to provide a map delineating the various soils series boundaries within the proposed mine plan area. Please relate soil sample site locations within each series sampled.

Permit area map 3-1 should be submitted to comply with UMC 783.24 (a)(b).

UMC 783.25 Cross-sections, Maps and Plans

(b) The locations of the surface and spring monitoring stations (Plate 7-3) are not consistent with the written description of the stations (page 7-27).

(c) Provide structure map for Hiawatha Seam.

(e) The surface facilities map is incomplete, it does not include the intake portal, exhaust facilities and access road east of the main disturbed area.

(f) Portray seasonal differences of head in the different aquifers in the mine area.

(i) Design data and calculations for sizing the culverts is lacking.

(k) Please provide cross-sections through the surface facilities area showing topographic relief in accordance with this section.

(L) All maps, plans, and cross sections should be certified by a registered professional engineer or professional geologist.

UMC 784.11 Operation Plan: General Requirements

(a) Please provide estimated annual production, by year, over the life of the mine.

UMC 784.12 Operating Plan: Existing Structures

The plan narrative is inconsistent with the surface structure maps in the identification of active portals. Plate 3-5 shows two portals at the west intake, two portals in the coal conveyor area and three portals on the east end by the exhaust fan. The plan narrative concerning reclamation and surface structures refers to four portals (3-3 and 3-61) and five portals (3-4). Which is correct?

The application should contain a description of each existing structure proposed to be used in connection with or to facilitate the underground coal mining activities and a compliance plan for each existing structure proposed to be modified or reconstructed for use in accordance with 784.12(a)(b).

UMC 784.13 Reclamation Plan: General Requirements

(b)(2) Provide bonding calculations for reclamation of roads and appurtenant structures.

(b)(3) The applicant should provide a map indicating the pre and post mining contours. Plesae describe how the post mining contour will be designed to acomodate drainage patterns as well as ensure adequate stability (see UMC 817.101).

(b)(4) Please provide a plan addressing concerns outlined in UMC 817.22.

(b)(5)(vii) Please further describe the topsoil and subsitiute material testing program which will be initiated prior to revegetation efforts. Describe where samples will be taken and what parameters will be analyized.

(b)(7) In Section 3.5.4, the applicant states that "coal outcrops resulting from this operation" would be covered with incombustible material. What is the nature of this incombustible material, to what thickness will it be placed?

UMC 784.14 Reclamation Plan: Protection of the Hydrologic Balance

(b)(1) The application lacks plans to minimize contact between surface water and existing or future stockpiles. These plans should include erosion control methods to be employed on these stockpiles and be incorporated into the drainage control system map.

The applicant must address UMC 784.14(d) regarding permanent entry seal and downslope barrier design in relation to the possibility of encountering significant ground water discharge within the mine.

UMC 784.16 Reclamation Plan: Ponds, Impoundments, etc.

The removal of the diversions, sedimentation ponds and dams is mentioned. However, the plan for these areas should be provided. These should contain a description map and cross-section of the structure and its location.

Applicant needs to identify "approved location" for storage of sediment from pond or locations proposed. By identifying the chemical nature of sediment unloaded, the proper procedures for disposal of them can be taken.

(a)(1)(ii) A cross-section of the sediment storage pond is lacking in the application.

(b)(1) A discussion regarding the compliance of the drainage system with current effluent limitations is lacking (UMC 817.42). The overflow spillway design must be detailed in cross-section and plan drawings and computations submitted regarding its ability to pass the 25-year, 24-hour flow. Stabilization and repair of the structure should also be addressed (UMC 817.45[s]). Postmining hydrologic effects of the surface disturbance should be discussed in terms of infiltration, runoff and ground water recharge. In the application, it is stated that excess ground water encountered in the mine will be released into the sedimentation pond. The pond design calculations should include this potential input such that mine discharge plus the 10-year, 24-hour storm flow will not exceed the capacity of the pond. The structures routing disturbed flow to the pond should be shown to be designed for the 10-year, 24-hour flow.

UMC 784.19 Underground Development Waste

Discuss proposed methods of disposal of waste rock developed through cutting of rock slopes, ramping between mineable seams, etc., as prescribed in this section. If storage is on the surface, discuss toxicity or acidity of waste material, possible exposure to mine water and diversion of surface drainage. Storage location and drainage control should be discussed if surface storage is considered.

UMC 784.20 Subsidence Control Plan

Is subsidence expected to occur due to mining beneath Beaver Creek? If so, how much and what effects are expected on Beaver Creek? If not, what is being done to protect Beaver Creek from the effects of subsidence. Please provide calculations substantiating subsidence or no subsidence. Since control stations have been established, has monitoring shown the occurrence of any subsidence? Map location of extent of disturbance with location of streams.

The application lacks a survey of structures and renewable resource lands within the proposed permit and adjacent areas, and an assessment by the applicant of whether subsidence, if it occurred, could cause material damage or diminution of reasonably foreseeable use of structures or renewable resource lands. The assessment must be accompanied by supporting methodology used to make the assessment.

UMC 784.22 Diversions

A cross-section and longitudinal profile of the diversion are required. Computations confirming the design capability (passage of the 10-year, 24-hour flow) of the diversion are required (UMC 817.43[a]). Appropriate sediment control structures for the Division should be addressed (UMC 817.43[c]). Peak flow calculations for culvert size determination (page 7-36, 37) needs further explanation, specifically steps 6 and 7. Trash rack design for the culvert is requested.

UMC 784.23 Operation Plan: Maps and Plans

(b)(5) Surface facilities maps did not identify underground development waste storage or noncoal waste storage areas. If stored underground or nonexistent, this comment can be addressed with UMC 784.19. An updated mine operation map is requested to clarify the recent plans (Plate 3-5).

(b)(9) The plan includes a narrative on the use of explosives but the storage site is not identified on the maps. Does one exist?

UMC 784.24 Transportation Facilities

More detailed maps, cross-sections and diagrams are needed to complete the engineering review for roads, parking lots, coal storage areas and the conveyor system. These should show depth of road base, gravel, slopes, berms, length of roads, etc., for all roads in the mine plan area. Data provided should be in accordance with the requirements of UMC 784.24 and 817.151-.180.

UMC 786.19 Criteria for Permit Approval or Denial

The applicant should demonstrate that revegetation can be feasibly accomplished under the plan proposed. Obtain information by establishing experimental plots, or from other minesites, published literature, etc.

TECHNICAL DEFICIENCIES

UMC 805.11 Determination of Bond Amount

The applicant states in 3.5.4.3 that fencing will be provided with an effort to facilitate revegetation success. However, no detail on the cost of the fencing or its removal are provided in the bond amount. Please provide all information necessary relating to the type and amount of fencing as well as the cost of removal. The applicant states in Section 8.6 that fill materials prior to being utilized as substitute soil materials have coarse material removed. What size material will be removed? Provide additional detail on the implements to be utilized as well as the fate of the rock material. What methods will be used? Please describe the cost of this procedure considering such factors as cubic yards removed, the screening process, implements to be utilized, man hours, etc.

UMC 817.11 Signs and Markers

Application lacks Figures 3-1 and 3-2 on pages 3-17a and 3-18a. Please provide details regarding how perimeter markers were or will be designed and placed (such as interval, durability, color, etc.).

UMC 817.13-.15 Casing and Sealing

Applicant must show that proper casing and sealing, in accordance with UMC 817.13 is planned or has been accomplished for all exploratory boreholes in the permit area. Data submitted should include borehole location, depth and type of casing or sealing.

UMC 817.22 Topsoil: Removal

(b) The operator proposes to utilize the existing pad as a source of substitute topsoil material. The substitute material from this area, particularly in locations such as coal stockpile, the grease and oil storage area as well as other locations, may be subject to contamination and compaction. Will these areas be subject to special disposal methods the operator has not addressed? How will contaminated areas be identified? How will degraded materials be disposed of?

How does the operator define coarse rock fragments? For the purpose of the reclamation plan, how will this material be separated out of the fill and where will this material be disposed of?

It is strongly recommended that the applicant evaluate the feasibility of retrieving original topsoil which remains "in place along the shoulders" as the result of original pad construction. This material should be analyzed for fertility and the volumes of such material should be determined.

Please address fertility amendments including organic amendments. For example, wood chips and sewage sludge may be employed to aid reclamation of these areas. It has been shown in past reclamation efforts that placement of even a minimal (2 inches) depth of topsoil over fill material serves to enhance reclamation efforts. The applicant alludes to topsoil redistribution from road shoulders in 3.5.4.4. Use in this manner would also serve to innoculate fill material with soil microbes more rapidly. These measures can, in turn, facilitate bond retrieval by decreasing the time involved in establishing adequate vegetation.

To demonstrate that the pad material will be adequate as a topsoil substitute, the applicant must propose either field or greenhouse trials.

The applicant states in 7.3.3.2 that sediment cleaned out of the ponds during maintenance could be stored adjacent to the topsoil. What topsoil is the applicant referring to, since there is no topsoil storage presently at this operation? Also, how will the quality of this material be determined. The objective of this determination should be to preclude any adverse effects on revegetation due to the presence of contamination material or coal fines. Please discuss mitigation

UMC 817.57 Stream Buffer Zones

Please submit information needed to establish whether Bryner Canyon stream is intermittent as stated in Section 3.4.3.1 or ephemeral as stated in Section 7.2.2.2.

UMC 817.71 Disposal of Underground Development Waste and Excess Spoil and Nonacid and Nontoxic-forming Coal Processing: General Requirements

The applicant proposes in 3.5.4.3 to backfill drainage diversions. What is the source of material proposed for backfilling? How will the operator ensure that these materials have not been contaminated as a result of the mining operations so as not to have an adverse effect on the drainages to be filled?

UMC 817.89 Disposal of Noncoal Waste

A plan addressing the placement and storage of noncoal wastes in a controlled manner on the permit area as well as final disposal should be provided.

UMC 817.97 Protection of Fish, Wildlife and Related Environmental Values

If the applicant plans to use spring surveys of the area conducted by the U. S. Fish and Wildlife Service (USFWS) to identify any potentially active rapor nests, results of these surveys should be promptly reported to the regulatory authority. The location of the golden eagle nest first reported by Springer and Truett (1980) should be included on Figure 10-11.

Submit a map in accordance with UMC 784.23(b)(8) showing the locations of aquatic sampling sites NFG-1, NFG-2, BC-1, BC-2, BC-3, SC-1. Also, plot the locations of stations presently used for inspection of sediment load in Bryner Creek and North Fork Gordon Creek. Discuss mitigation measures to be directed toward wildlife in the event that mining operations negatively impact flows at seeps and springs on and adjacent to the permit area.

All fences used to preclude wildlife use should be designed so that big game will not attempt to pass and become entangled. Specifications for their design should be included. If the road kill monitoring plan indicates that the number of kills is increasing, it is suggested that the plan include consultation with Utah Division of Wildlife Resources for recommendations to minimize these losses.

A commitment should be made to promptly report any threatened or endangered species observed on or near the permit area to the regulatory authority.

Plans should be given to ensure that the arrangement and placing of trees and shrubs are in accordance with UMC 817.97(d)(9). For most wildlife species, the clumping or grouping of shrubs/trees provide the best cover and edge effect. Since wildlife habitat is a postmining land-use, plant groupings to create edge effect should be used.

UMC 817.101 Backfilling and Grading

The applicant indicates the highwalls will be left in place as opposed to mitigation by backfilling. Please discuss the rationale for this in light of other available options such as partial backfilling and/or blasting. What measures will be taken to reduce the highwall to the minimum possible magnitude? These alternitive options will be utilized to determine if any better methods exist than to leave the highwalls in place or conversely, to justify leaving them. How do various options relate to proper post-mining drainage?

UMC 817.111-.117 Revegetation

Applicant should discuss plans for the use of temporary, experimental seed mixtures for areas to be revegetated. Seed mixtures proposed should include common and botanical names of species, seeding rates (expressed as pounds of pure live seed/acre), and methods to be used to plant the seed (drill, broadcast, etc.). If containerized trees/shrubs or bare root stock are to be used, densities and species to be planted and methods used to plant them should be given. Introduced species may be included in temporary planting mixtures provided an acceptable experimental design and a complete monitoring plan to assess the suitability of these species are submitted. Discuss the use of these experimental mixtures in relation to the establishment of an acceptable permanent planting mixture for each community type to be revegetated.

It is not clear what temporal limit is to be used as the criterion for applying either the temporary or permanent planting mixtures to a specific area. Also, temporary reclamation will probably be one of two kinds: short-term (i.e., less than three to five years); or, long-term (i.e., life-of-mine). Short-term mixtures need not contain shrub species. Each area to be reseeded should be addressed in this light. In line with this, more details are needed regarding the statement that a temporary cover will be established to control erosion (Vol. 2, Sec. 9.7). Will this be the short-term, temporary seed mixture, the long-term, temporary planting mixture, or will there be areas of each?

It is suggested that the monitoring plan proposed for the reference areas and reclaimed area include not only visual inspection, but also quantitative sampling methods for evaluating revegetation success during the first few years after planting. Include plans for weed control and the initiation of grazing on these areas. A specific management plan for the reference area, dependent upon the range condition of the area, should be proposed. Also, a commitment to submit any grazing management plan that is developed for the reclaimed area, a year in advance of implementing the plan, should be made.

Describe in detail the rates of mulching and the methods to be used to distribute and secure the mulch on all disturbed areas. On those areas where mulch is not to be used, alternative methods that help ensure protection and germination of seeds, increase the moisture retention of the soil and control erosion from wind and water must be used. These alternative methods should be described.

The applicant should propose specific standards of success for cover, production and woody plant density on areas to be permanently reclaimed. Indicate how these parameters will be measured and compared to those of the reference area at the time of bond release. Include plans to encourage species diversity and habitat diversity and the methods to be used to evaluate that diversity.

The Operation and Reclamation Plan (Vol. 1, Sec. 3) and the Vegetation Resources Section (Vol. 2, Sec. 9) should be re-examined to remove internal contradictions and ambiguities and to update these sections.

The applicant states in Part 3.5.7.1 that all reclamation would be initiated within 90 of final abandonment. Later in the section, a detailed timetable is provided in which 17 weeks would be required to achieve all the activities necessary. In light of this, the operator should give consideration to providing that the season at the initial time of abandonment occur in a season which provides ample time to achieve all necessary scheduled activities. Secondly, the operator should modify the estimated schedule to allow for all work to be done within 90 days or to clarify the statement to reflect the actual amount of time which will be necessary to complete all activities.

The applicant states in 3.5.5.2 that seeding will occur in optimum soil moisture conditions. What criteria will be employed to determine optimum soil moisture? Will the seeds be covered with soil, and if so, to what depth?

UMC 817.131 Cessation of Operations: Temporary

Submit a plan to be initiated in case of temporary cessation of operations.

UMC 817.133 Postmining Land-use

The application lacks a description of specific efforts to provide for postmining land-use of wildlife habitat. The proposed vegetation should be planted in a manner to create an edge effect by clumping the shrub or tree species.

Socioeconomics

While the following is not required for inclusion in the mining and reclamation plan, the information listed would aid in preparing an environmental assessment in compliance with the National Environmental Policy Act.

1. Exact number of new employees associated with proposed mine plan, for construction and operation, by year, for the life of the mine.

2. Any information available concerning the place of residence of existing employees.

3. Any actual or planned company assistance provided to local communities for housing, parks, road construction, etc.

4. Any data the company can provide concerning tax revenues contributed to the local communities.