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STATE OF UTAH
NATURAL RESOURCES
Oil, Gas & Mining

Norman H. Bangerter, Governor
Dee C. Hansen, Executive Director
Dianne R. Nielson, Ph.D., Division Director

355 W. North Temple • 3 Triad Center • Suite 350 • Salt Lake City, UT 84180-1203 • 801-538-5340

December 23, 1985

CERTIFIED RETURN RECEIPT REQUESTED
(P402 457 283)

Mr. Dan W. Guy, Manager
Permitting and Compliance
Beaver Creek Coal Company
P. O. Box 1378
Price, Utah 84501

Dear Mr. Dan Guy:

RE: Technical Deficiency Review, Gordon Creek #3 and #6 Mines, INA/007/017, #2, Carbon County, Utah

The Division has reviewed the latest submittal dated November 6, 1985 for the Gordon Creek #3 and #6 mine plan. Enclosed please find a regulation by regulation listing of the technical deficiencies which still remain in the plan.

As you will note, there are still a large number of technical deficiencies which must be resolved prior to permit approval. Some of the items have been requested on previous occasions and have still not been addressed adequately. They are asterisked for your reference.

Based on the time delays in Beaver Creek responding to the previous technical deficiency letter of July 1, 1985 and in the items which were previously identified and still have not been adequately addressed, the Division is concerned that Beaver Creek Coal Company is possibly not devoting the manpower and budget necessary to successfully permit the #3 and #6 mine reclamation in time for the 1986 construction season. In order to address the deficiencies contained herein and assure no delay is experienced due to any misunderstanding between Beaver Creek Coal Company and the Division, I would like to set up a meeting on January 7 in the Division offices wherein you and Division technical staff can go over the deficiencies and assure you know exactly what is needed to respond completely to the technical deficiencies in this letter.

In order to achieve permitting of the #3 and #6 mine reclamation, would you please assure that Beaver Creek Coal Company's response to the technical deficiencies is received at the Division by March 7, 1986.

Please advise me at your earliest convenience of a suitable time to meet on January 7, 1986.

Sincerely,

Lowell P. Braxton
Administrator
Mineral Resource Development
and Reclamation Program

JJW/btb
Enclosures
cc: Allen Klein
Technical Review Team
9294R-45 & 46

TECHNICAL DEFICIENCIES

Beaver Creek Coal Company
Gordon Creek #3 and #6 Mines
INA/007/017, Carbon County, Utah

December 23, 1985

UMC 800.14 Determination of Bond Amount - PGL

The cost estimate must be updated to reflect current labor and operating costs. All of the additional costs included in the revised plan (e.g., removal of the 48 inch culvert) must be included in the revised estimate. Woody plants have not been included in the reclamation cost estimate and should be.

UMC 817.11 Signs and Markers - KMM

Locations of signs should be indicated on Map 3-1A as stated in Section 3.3.5.1.

*UMC 817.13-.15 Casing and Sealing of Exposed Underground Openings - RVS

Letters from Mine Safety and Health Administration (MSHA) only pertain to the Gordon Creek #3 Mine. Moreover, the letters were written after portals were permanently sealed. MSHA did not recommend the methodology used to permanently seal the portals, they merely stated that the method of portal sealing "appeared" to conform with 30 CFR regulations.

Division policy requires permanent closure to incorporate concrete block seals with pilasters to be installed a minimum of 25 feet inby the portal entrance. The area between the portal entrance and concrete seal is to be backfilled with noncombustible/nontoxic material. For mines that encounter water (i.e., No. 3 Mine), a two inch diameter drain pipe must be installed through the concrete seal to the portal entrance to prevent the build-up of hydraulic head and subsequent portal seal blow out.

The applicant must incorporate into the MRP a plan for permanently sealing portals that follows the above described procedures for installing concrete seals/drain pipes and backfilling with appropriate materials.

*UMC 817.22 Topsoil: Removal - EH

The Mining and Reclamation Plan (MRP) provides two samples in the 7.6 acres of disturbance to characterize the soil substitute material to be used for reclamation. This is not an adequate number of samples to determine the quality and quantity of suitable soil

material. Therefore, a plan must be submitted which identifies additional sample locations for each pad area and downslope area that will have soil used as a topsoil substitute. Additional samples must be taken to a minimum depth of 18 inches and the results of chemical and physical analyses submitted to the Division. These additional soil samples are necessary to insure enough suitable soil is available for reclamation. These analyses must be collected and submitted to the Division before the plan can be approved. It is required that one of the Division's soil specialists be present at the time of sampling. Please notify the Division when sampling will occur.

The analyses must include, at a minimum:

1. pH;

2. EC;

3. SAR;

4. Texture;

5. Boron;

6. Saturation Percentage.

The applicant must depict through the use of maps and a write up the areas onsite that will have soil retrieved by the backhoe. In other areas where this method has been used, trouble has arisen at the time of reclamation with the backhoe not being able to retrieve enough fill.

UMC 817.42 Effluent Limitations - JRF

It appears that the sediment ponds will not be able to meet effluent standards at the present design. The addition of the undisturbed area draining into the ponds will result in undersized ponds. The applicant must address the following concerns to meet effluent quality.

1. Universal Soil Loss Equation (USLE) calculations for disturbed and undisturbed areas.

2. Adjustment of Figure 7-4 to accurately depict mine site location and contributing watershed.

3. Sediment yield calculations for both areas.

4. Detention time calculations for the series of sediment ponds.

*UMC 817.43 Hydrologic Balance: Diversions and Conveyance of Overland Flow, Ground Water Flow and Ephemeral Stream - JRF

The applicant denotes the reclamation drainage plan on Plate 3-1A. It is unclear as to how the disturbed drainage is routed to the sediment ponds. The area around the 24-inch CMP on Plate 3-1A is confusing as to where the flow is routed. The applicant shows drainage going in two different directions below the 24 inch CMP. The applicant must address the following concerns:

1. Submit a detailed drainage plan map, drawn to the same scale as Plate 3-1A.

2. Show justification for leaving the 24-inch CMP as a permanent reclamation structure.

3. The runoff volume calculation (page 7-29, MRP) needs to be adjusted with the following concerns:

   A. A slope of 16.2 percent does not appear to accurately reflect the watershed.

   B. The contributing drainage area is incorrect. The mine site location is incorrectly placed on Figure 7-4.

UMC 817.44 Hydrologic Balance: Stream Channel Diversions - JRF

The applicant's proposal to retain the 48-inch culvert which was utilized to divert the stream flow from Coal Canyon under the mine site pads and sediment ponds poses a problem as a permanent reclamation measure.

The applicant proposed to cap the inlet of the culvert and plug the outlet. The Division finds that this method is unacceptable. The culvert must be removed or the entire length must be filled with a nonacid-forming and nontoxic material and then sealed at both ends.

The applicant must also address the following in the MRP:

1. Certified cross sections of the reestablished stream channel.

2. Commit to using well graded riprap.

3. The field survey above and below the reestablished channel must be incorporated into the MRP.

4. Table 7-6 states a bottom width of 10 feet for the reconstructed channel while Plate 7-3 has a bottom width of 15 feet. Please correct this discrepancy.

5. The reconstructed channel riprap design is not justified with calculations. The applicant must address riprap gradations, filter blanket sizing and riprap installation i.e., keying riprap into the banks of the channel.

6. The applicant must address velocity requirements for flow in channel bends for the designed meanders.

UMC 817.46 Hydrologic Balance: Sedimentation Ponds - JRF

The Division cannot adequately assess the cross sections and plans submitted in the MRP (Figure 7-2 and Plate 7-4) to determine accurate storage volumes and overflow capacities associated with the ponds.

The applicant needs to address the following concerns in detail:

1. Stage discharge curves must be generated for both ponds.

2. Detention time - the applicant must provide calculations that provide a suitable detention time for the runoff occurring over the contributing watershed.

3. Riprap sizing calculations must be submitted for the inlets and outlets of both ponds.

4. Plate 7-4 is unclear as to the plan view. The dimension shown could be the bottom of the pond or the top of the pond. A clearly labeled and dimensioned Plate 7-4 is requested, including dimensions for width and length of top and bottom elevation of each pond. Given no dewatering capability, the MRP must demonstrate how effluent limits will be met if the design storm occurs and the pond system is already full.

UMC 817.47 Hydrologic Balance: Discharge Structures - JRF

The applicant's methodology for the spillway calculation is not acceptable. The applicant needs to address the lower spillway as a broadcrested weir. Using the broadcrested weir equation will allow proper selection of a spillway width and height. The applicant must also size the upper spillway with the same procedure.

Riprap size, gradation and filter blanket calculations must be submitted for the following areas:

1. Inlet for the upper pond.

2. Inlet for the lower ponds

Specific cross sections with dimensions must be submitted for discharge structures and riprap areas.

UMC 817.49 Hydrologic Balance: Permanent and Temporary Impoundments - JRF

The applicant needs to submit proof of the water right and who the user will be if different from the water right holder.

UMC 817.52 Hydrologic Balance: Surface and Ground Water Monitoring - JRF

The monitoring plan proposed must be upgraded to reflect the attached two tables.

UMC 817.55 Hydrologic Balance: Discharge of Water Into An Underground Mine - JRF

The applicant does not address this regulation in the MRP. Please address this regulation in specific detail.

UMC 817.56 Hydrologic Balance: Postmining Rehabilitation of Sedimentation Ponds, Diversions, Impoundments and Treatment Facilities - JRF

The applicant does address modification of the proposed permanent sediment ponds (page 7-226) but fails to address removal of straw dikes, filter fabric fences and wire fence around the reclaimed area. The applicant must address the other structures for compliance with this section.

UMC 817.59 Coal Recovery - RVS

The applicant must submit maps showing the final extent of the #3 Mine and #6 Mine workings (Plae 3-2 and Plate 3-3). Maps must indicate the timing and sequence of initial development and retreat mining in the Castlegate "A" and Hiawatha seams.

UMC 817.89 Disposal of Noncoal Wastes - PGL

The applicant must revise the MRP to state what is actually onsite. For example, page 3-4 states that the substation will be removed in 1985 and page 3-4a states that it will be removed in 1986. All inconsistencies must be removed from the plan.

UMC 817.97 Protection of Fish, Wildlife and Related Environmental Values - KMM

Raptors are the wildlife resource most likely to be adversely impacted during reclamation. General results of a raptor survey conducted in 1980 are reported in Section 10.3.3.2. Specific

nesting locations are, however, needed to determine the effects of reclamation on the population. Results of the raptor monitoring program mentioned in Sections 3.4.6.3 and 10.6 are also needed. The Division's principal concern is for construction activity during the breeding season (February 1 - July 15) if raptors are nesting in the area.

*UMC 817.101 Backfilling and Grading: General Requirements - EH

Each backfilled highwall must be depicted with cross sections that will enable the Division to determine the extent of the backfilling operation. The static safety factor of 1.5 must be demonstrated for these highwalls.

The applicant states that the backfilling will be done at the upper terrace by reaching over the fill bank and retrieving material. This approach was attempted at Huntington #4. However, rock ledges were encountered. The applicant must determine if this method will be possible and how much material will be able to be retrieved.

Plate 3-8 (page 3-34) is referred to several times in the backfilling and grading plan. However, this plate does not exist. Please clarify.

The applicant states that upon completion of backfilling and regrading during reclamation, the surface will be scarified to prevent slippage on the surface and promote root penetration. How will the surface be scarified? Elaborate in the MRP.

The highwalls to be retained on Plate 3-1A are "stable" as stated on page 3-35a (#6). A stability analysis was performed for #2 Mine Southwest Lease highwalls and stated to be similar for this mine. Samples of each should be submitted to demonstrate that they are indeed identical and the same analysis would be applicable.

The west facing highwall must be depicted on the surface facilities map and the typical cross sections along with a narrative describing the backfilling operation.

The MRP uses two numbers when indicating the cutoff point for coal fines allowable in the fill. On page 8-20, five percent is used, but on page 3-36d 50 percent is used. This discrepancy must be resolved.

UMC 817.103 Backfilling and Grading: Covering Coal and Acid- and Toxic-forming Materials - EH

The applicant must propose methods that will be used to identify the areas of 50 percent or greater coal fines and those of 50 percent or less. A visual identification cannot be used. The area of the old coal pile (see attached maps) has large amounts of coal

remaining. They must be removed and disposed of at C. V. Spur along with all toxic material. The area used for disposal of the 50 percent or less coal fines material must be included on the surface facilities map. At present, there is a volume estimate of soil onsite for use as cover material but no chemical and physical analysis have been presented to confirm the estimate. The applicant must sample this material to insure that the material is suitable as a nontoxic soil material. The plan must be changed to reflect these new proposals.

UMC 817.106 Regarding or Stabilizing Rills and Gullies - JRF

The applicant does not commit to stabilizing rills and gullies deeper than nine inches in the MRP. Section 3.5.4.2 does not contain any verbage pertaining to the aforementioned problem. Please address this deficiency.

UMC 817.111 Revegetation: General Requirements - KMM

Please clarify:

1. Willows are to be planted "within three feet of the new channel" (Section 3.5.5.4). Is this measured from the center? low water line? a high water line? Willows planted from cuttings are unlikely to survive unless planted where their soil is wet/saturated at least part of the year. If planted deep enough they will be able to survive spring flooding.

2. Figure 3-7. Please clarify scale of the figure and explain what is planted on the two inch riprap? What will the impact of impermeable fabric be on water availability to plants and the ability of plants to root deeply enough to avoid drying out in late summer?

3. Is the lowest sedimentation pond excluded from the riparian enhancement zone? If so, why?

The applicant has not proposed a specific seed mix for creation of the riparian meadow habitat. The basic seed mix could be modified with the addition of a few grass and forb species adapted to wetter or more variable environments, e.g., Deschampsia caespitosa, Festuca idahoensis, Phalaris arundinacea, Achillea millefolium. Vegetative reproduction of Carex species, unavailable from seed, could be accomplished in a manner similar to the clump plantings proposed. Small Carex clumps can be chopped up and spread by hand after final seed bed preparation.

UMC 817.112 Revegetaton: Use of Introduced Species - KMM

Four introduced species are included in the applicant's proposed seed mix comprising over 80 percent (seeds per acre) of the herbaceous species. The applicant must justify the use of introduced species in a final reclamation mix. Alfalfa and yellow sweet clover can be justified on the basis of providing quick stabilizing cover, being of value to wildlife and having nitrogen fixing ability if the seed will be inoculated with appropriate bacteria before planting. Kentucky bluegrass, in smaller quantities, can be justified as a widely naturalized grass in western states (in both upland and riparian areas), compatible with native species and not overly competitive. Intermediate wheatgrass could be easily replaced with one or more native wheatgrasses, e.g., Bluebunch (Agropyron spicatum) or Thickspike (A. dasystachyum). Blue grama grass (Bouteloua gracilis) should also be considered as a warm season addition to the seed mix.

The seeding rate proposed is acceptable for hydroseeding only because of the large number of seeds per acre contributed by Kentucky bluegrass (8.6 million per acre or 200 per ft^2). For hydroseeding, the applicant's seed mix should provide 100-150 seeds per ft^2.

The Division recommends the following for the herbaceous portion of the seed mix:

Kentucky bluegrass	Poa pratensis	1.5
Great Basin wildrye	Elymus cenereus	5
Thickspike wheatgrass	Agropyron dasystachyum	2
Bluebunch wheatgrass	A. spicatum	2
Blue grama grass	Bouteloua gracilis	1
Alfalfa	Medicago sativa	2
Yellow sweet clover	Melilotus officinalis	2
Northern sweetvetch	Hedysarum boreale	1

UMC 817.113 Revegetation: Timing - KMM

September-October is a favorable season for seeding and for placement of established "clump plantings." Fall is not, however, the most favorable time for most of the woody plantings proposed (seedlings, saplings and willow cuttings). Good root establishment of fall planted shrubs and trees is essential for first year survival. As the applicant points out, root hairs die almost immediately with exposure to air and mechanical abrasion. Nondormant specimens are particularly sensitive to dessication. We recommend against planting bare root (as opposed to containerized stock in the autumn since fine roots are inevitably destroyed during digging, transport and planting. If containerized stock is used, it should be planted early enough in the fall to become established before winter. Early planting of containerized stock may require watering.

In addition to the careful handling techniques proposed by the applicant, care should be taken to acclimate stock to sunny and windy conditions before planting.

While some success has been obtained by cutting actively growing willow shoots in fall (or late spring), the Division recommends cutting dormant shoots 1/2 to 3/4 inch in diameter and planting them after acclimation in early spring while the ground is still saturated. If possible, cuttings should be planted deep enough to contact the water table. We do not recommend planting cuttings over one inch in diameter. Choice of willow species for cuttings will be very important to establishment success because of the variable riparian conditions. Narrowleaf (Salix exigua) and Booth's willow (S. boothii) can tolerate a wide range of conditions.

The applicant must include the shrub/tree planting and monitoring schedules in the Reclamation Timetable (Section 3.5.7.1).

UMC 817.114 Revegetation: Mulch - KMM

The applicant should consider seeding without a tackifier if mulching with a tackifier is to follow within 24 hours. Some chemical tackifiers are thought to inhibit germination.

The applicant should also consider incorporating native hay, e.g., two tons per acre, into the soil before seeding on equipment accessible slopes. Improving the organic matter content of the soil should facilitate revegetation since topsoil is not available.

UMC 817.115 Grazing - KMM

The applicant should address access of wildlife to fenced areas during the bonding period and whether or not livestock grazing will be permitted on reclaimed areas during the liability period.

*UMC 817.116 Revegetation: Success Standards - KMM

The applicant should clarify sampling methods proposed for evaluating revegetation success. Section 3.5.6 indicates that monitoring methods are the same as baseline collection methods but they do not correspond.

The applicant should also review their proposed success standards which are more stringent than required. The shrub type (oak shrub) must be within 90 percent of the reference area vegetation with 80 percent confidence. The sagebrush-grass type, which does not qualify as a shrub type, must meet the 90 percent standard with 90 percent confidence. The proposed standard for woody vegetation, i.e., based on planting rate, is not acceptable.

Areas to be reestablished as oak shrubland (and eventually compared to the oak shrub reference area) should be delineated on Map 3-1A.

The applicant must also finalize the riparian reference area including mapping its location, providing range condition and productivity estimates and commit to baseline sampling in 1986.

The applicant must also be prepared to meet sample adequacy when applying for bond release as described in the Division's Vegetation Information Guidelines or propose and justify an alternative. Adequacy was not demonstrated for the baseline sampling.

UMC 817.150-.156 Roads: Class I: General

Section 3.2.10 notes that the Class I haul road will be "downgraded" to a Class II status. The Division does not concur with downgrading this road unless adequate justification is provided. Please provide complete justification in the MRP.

Pending receipt of Beaver Creek's justification and clarification from the Attorney General's office on this issue, the Division will determine the postmining status of the Class I road in question.

In the interim, please provide the following information in the MRP.

1. Sections of this road must be included in the permit area and shown on Plate 3-1.

2. Overall grade of the road in the permit area.

3. Maximum pitch of the road in the permit area.

4. Cross sections of the existing road at 200 foot intervals.

5. Drainage detail to include locations of ditches, culverts and sediment control measures.

6. Maintenance of the road.

7. Surfacing.

UMC 817.160-.166 Roads: Class II: General

Section 3.2.10 of the MRP notes the Class II access road will be downgraded to a Class III road. The Division does not concur with this downgrading. The applicant must revise the MRP to reflect

which portions of the Class II access road will be retained and demonstrate how the portion retained will meet Class II performance standards throughout the bond liability period (revise narrative and plates).

ADDITIONAL DEFICIENCIES

1. The following plates should have lease boundaries, property boundaries, bonded area and the permit area included on the plate. These boundaries should be easily distinguishable. NOTE: ALL OF THE DISTURBED AREA MUST BE INCLUDED IN THE PERMIT AREA, i.e., the sediment pond area, that is presently shown outside of the property and lease boundaries must be located within the permit area).

   A. Plate 3-1 - Gordon Creek #3 and #6 Surface Facilities with Topo

   B. Plate 3-1a - Gordon Creek #3 and #6 Postmining Topography and Drainage

   C. Plate 3-2 - Gordon Creek #3 Hiawatha Seam, Mine Operations Map

   D. Plate 3-3 - Gordon Creek #6 Castlegate "A" Seam, Mine Operations Map

   E. Plate 3-5 - Subsidence Monitoring Map (#3 Mine Map)

   F. Plate 7-1 - Water Monitoring Location and Drainage Areas

   G. Plate 7-2 - Sediment and Drainage Control Plan Gordon Creek #3 and #6

   H. Plate 9-1 - Vegetation Map

   Plate 3-1b (Existing and Postmining Cross Sections) must identify each of the sections of highwalls that will be backfilled. These sections must be shown at an appropriate scale of 1 inch = 10 feet to distinguish volumes.

   The volumes of cut and fill will change depending upon the final disposition of the 48 inch culvert. Appropriate changes must be noted.

   The plates (3-1A and 3-1B) should be updated to reflect the current plans for the area.

   Plate 3-4 (Transportation Facilities Map) should distinguish where these sections were taken from.

2. MRP must be consistent. If past tense is appropriate, then it should be changed.

3. Index must match text.