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STATE OF UTAH  
NATURAL RESOURCES  
Oil, Gas & Mining

ACT/043/008 #  
File # 293

Norman H. Bangerter, Governor  
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March 9, 1988

Mr. Jack Blonquist  
Summit Coal Company  
P.O. Box 646  
Coalville, UT 84017

Re: Stipulation Response, Waste Rock Disposal Area (December 15, 1987), Summit Coal Company, Boyer Mine, ACT/043/008, File #2, Summit County, Utah

*Jack*  
Dear Mr. Blonquist:

Please find enclosed the Division's review of the above-referenced submittal. Due to the size of the proposed facility, the submittal will be processed as a permit revision. This action requires publication of public notice and a 60-day comment period. Additionally, it has been decided to process the proposed final disposal area submittal without review of the temporary facility proposal. Essentially, the submittals are identical except for acreage differences. The same baseline information required by the final area will be required for the temporary area. Also, the permit process timeframe will be approximately identical for the final disposal proposal. Therefore, the most expeditious and beneficial permitting action will be for the final waste disposal area.

It is recognized by the Division that many of the concerns noted in this review are contingent upon the results of the overburden/groundwater investigation that is expected to be funded by the SOAP program. Final receipt of this grant has not yet been obtained by our office. We expect to have an answer on fund availability by late March. The study would be initiated (well drilling) by mid- to late April, with final approval feasible by June of this year. If SOAP funds are not available for this project, Summit Coal Company would be required to gather and submit this information.

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Due to the uncertainty of the SOAP funding availability, the deadline for response to this review will be May 1, 1988. Our office will notify you when a decision has been made on the SOAP grant. If you have any questions on this matter, feel free to call me or Sue Linner of my staff.

Sincerely,



L. P. Braxton  
Administrator  
Mineral Resource Development  
and Reclamation Program

jr  
Enclosure  
cc: B-team  
6000R/20:21

March 8, 1988

TO: File

FROM: Rick P. Summers, Reclamation Hydrologist *RPS*

RE: Stipulation Response, Waste Rock Disposal Area (December 15, 1987), Summit Coal Company, Boyer Mine, ACT/043/008, File #2, Summit County, Utah

Summary:

The application is not approvable as submitted. The following concerns will need to be addressed prior to approval. It should be recognized that a portion of the following concerns may be addressed utilizing funding from the Small Operator's Assistance Program (SOAP). The eligibility of the site for this funding is uncertain at this time. Therefore, the timeframe for applicant response should reflect an adequate period for this decision. If SOAP funding is not available for the required information, the applicant will be required to collect and submit the information.

UMC 783.15 Ground Water Information

1. The application does not contain a description of the ground water resources at the immediate waste rock disposal area. The existing application contains information of a general nature, but is not adequate for permitting this site. The application must contain information required by UMC 783.15(a)(1-3) and UMC 783.15(b).

UMC 784.13 Reclamation Plan: General Requirements

1. (b)(1) The applicant should revise the current Mining and Reclamation Plan (MRP) reclamation timetable to include removal of the waste area sedimentation pond and monitoring of the drainage entering the pond during the reclamation period.

UMC 784.14 Reclamation Plan: Protection of the Hydrologic Balance

1. (b)(1) The drainage plan for the site should include designs and calculations for a typical diversion to be installed at the site at the locations identified on Plate 3-4.

2. (b)(1) The application should include designs for a culvert to be placed at the upper end of the access road. It appears this culvert is necessary for the diversion crossing the access road from the east and discharging into the sediment pond.
3. (b)(3) The application must contain a description of the water monitoring plan (points, parameters, analysis methods, frequency and reporting) for the operation and reclamation phases of the operation. The existing MRP (plates and narrative) should be revised to reflect these additional monitoring plans. If SOAP funding is not available for the collection of baseline data, the applicant will be required to collect and submit this information.
4. (c) The application does not contain a revised determination of the probable hydrologic consequences of the proposed waste disposal facility on the hydrologic regime of the area.

UMC 784.22 Diversions

1. The peak flow values presented in Table 3.3.1 are in error.
2. The diversion designs presented are incomplete. The application must depict control of the drainage from the entire site for the entire life of the facility. Diversions should be planned to control the drainage from the area identified as Phase 5 to the sediment pond.
3. Designs for channel stability measures or a justification demonstrating that no measures are necessary should be included.
4. Designs demonstrating the 0.3 ft. freeboard requirement were not submitted.
5. The proposed size of the diversions was not included in the application.
6. Plans to retain the diversions until bond release and subsequent reclamation commitments of the diversion and pond structures were not submitted.

UMC 784.23 Operation Plan: Maps and Plans

1. Plate 3-4 should be corrected to depict the location of the diversions and the culvert discussed previously in this review.
2. The existing MRP monitoring map should be updated to depict the proposed water monitoring points. These should include groundwater sampling wells, sediment pond outfall, and points to be sampled during the reclamation period to demonstrate compliance with UMC 817.46(u).

UMC 817.46 Hydrologic Balance: Sedimentation Ponds

1. The applicant's use of a 60% reduction in the sediment volume is unacceptable. Subsection (b)(2) requires the use of 0.1 AF/ac for a storage volume and Subsection (h) requires removal of sediment from the pond when the volume reaches 60% of that design volume.
2. The assumption that only one-fifth of the area will be disturbed at any one time is not acceptable. Conversations with Division biologists indicate that the period to establish a vegetation cover equivalent to the undisturbed area (CN of 70) for this area can be on the order of three (3) years.
3. The required design event for the design of the sediment pond may be revised by the State Department of Health. The potential for acid or toxic drainage discharging to the pond during operational phases may require a larger safety factor for containment of the runoff. Comments on the application from the Department of Health have not been received by the Division. They will be forwarded to the applicant upon our receipt.
4. Plans should be submitted demonstrating the safe passage of the design peak flow from the emergency spillway to the county road drainage system. At a minimum, a 25 yr. - 24 hr. event should be used for these designs. The designs should include diversion size and stability calculations.
5. The spillway designs do not meet the requirements of Subsection (j) of this regulation. A one-foot minimum embankment height is required with the spillway flowing at design depth.

6. An NPDES permit will be required for the proposed sedimentation pond. The sampling discussed on page 6 should commit to sampling the discharge per that permit.
7. Plans should be submitted to immediately establish a vegetative cover on the sediment pond embankments and surrounding disturbed area.

UMC 817.48 Hydrologic Balance: Acid- and Toxic-Forming Materials

1. The application should address measures to divert all surface drainage from each phase of disturbance. Diversions should be located upgradient from each lift of waste placement. These diversions should be designed for the 10 yr -24 hr event.
2. The application should state that all materials will be buried or treated within the first thirty (30) days following first exposure at the site.

UMC 817.49 Hydrologic Balance: Permanent and Temporary Impoundments

1. Subsection (c) requires that excavated sideslopes not exceed 2:1. The application proposes 1:1 slopes. This should be corrected.

UMC 817.53 Hydrologic Balance: Transfer of Wells

1. The applicant should describe plans for the wells upon reclamation. Intent to transfer or well plugging plans should be included.

February 19, 1988

TO: File

FROM: Randy Harden, Reclamation Engineer *RZH*

RE: Proposed Waste Disposal Facility, Summit Coal Company,  
Boyer Mine, ACT/043/008, Folder #2, Summit County, Utah

SUMMARY

The proposed facility is not considered to be sufficiently adequate for approval. The following review discusses concerns regarding the construction, operation, and reclamation of the waste disposal site.

UMC 784.19 Underground Development Waste - JRH

Some of the information required in order to determine the proposal is not considered to be complete. With regard to this section of the regulations, the operator must still address the following:

1. The character of the bedrock and any adverse geological conditions in the disposal area.
2. A survey identifying all springs, seepage and ground water flow observed or anticipated during wet periods in the area of the disposal site.
3. A survey of the potential effects of subsidence of the subsurface strata due to past and future mining operations.

The proposed drawings and text provided do not include sufficient descriptions or detail to describe the geotechnical investigation, design, construction, operation, maintenance and removal of the site and facilities. As an example, the plans do not indicate how haul roads will be routed in order to negotiate the hillside and the configuration of the waste disposal piles. Without

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routing and scheduling of these roads, it appears to be difficult to construct the waste disposal area in accordance with the proposed plan.

The operator has not provided foundation soils information with the proposal. Topsoil and subsoil depths should be determined prior to construction in order to determine the mass balance and the quantities available for reclamation.

The operator has proposed that a 12" layer of clay be installed in conjunction with the pad excavation. Until such time as the infiltration and soils characteristics are determined for the design of the facilities, it is unknown as to whether or not this clay layer will be required. It would appear, however, that the Division would not want to see such a clay layer installed as part of the foundation for the waste material. The layer would only serve to concentrate any ground-water flow along the clay boundary and through the waste material. In looking at how the waste facilities are currently layed out, this would allow the water to pass along the clay layer and collect soluble contaminants in the waste material, and then discharge them at or near the surface at the toe of the slope of the waste pile.

UMC 817.46 Hydrologic Balance - Sediment Ponds - JRH

The operator has proposed an incised pond with inslopes of 1:1. In accordance with part (m) of this section, no slopes shall be designed to be steeper than 2h:1v. The operator must redesign this structure in order to be considered in compliance with the requirements of this section.

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

The operator has not collected sufficient information for the design of the waste disposal facility to demonstrate prevention of surface or ground-water contamination. Sufficient soils, groundwater and climatic information must be provided to demonstrate that the design will protect against the upward migration of salts, exposure by erosion, formation of acid or toxic seeps; and will provide adequate depth for plant growth, or other conditions and requirements to prevent water contamination.

jr  
cc: S. Linner  
    ✓R. Summers  
1384R/21:22

February 12, 1988

TO: File

FROM: James Leatherwood 

Re: Coal Waste Disposal, December 18, 1987 Submittal, Summit Coal Company, Boyer Mine, ACT/043/008, Folder No. 2, Summit County, Utah

Abstract

The above mentioned submittal has been reviewed and found not to be technically adequate. Topsoil removal, protection, and redistribution and waste disposal issues are discussed below.

UMC 817.22 - .25 Soil Management - JSL

Topsoil Removal

The plan does not adequately meet UMC 817.22. All topsoil materials must be removed in a separate layer from the area to be disturbed. All subsoil materials are to be removed and segregated separately. The depth of topsoil removal must be specified in the plan. The soil survey for the proposed area indicates that a Bezzant Gravelly loam and a small amount of Moweba Gravelly loam exist. The topsoil depth of the soil is approximately seven inches. It is advisable to commit to removing a minimum of seven inches of topsoil material.

Topsoil Storage

The plan does not adequately meet UMC 817.23. All stockpiled topsoil must be selectively placed on a stable surface in the permit area and be protected from wind and water erosion, unnecessary compaction and contaminants. The topsoil cannot be stockpiled in a berm due to the high potential for water erosion and contamination from eroded acid-or toxic-forming materials.

The removed topsoil must be stockpiled at a site that will not be disturbed and will be protected from contaminants. The stockpile should not be a mix of topsoil and subsoil. The topsoil and subsoil should be stockpiled separately. The plan must address the specific measures that will be used to insure protection. These measures should include plans, cross-sections volumes, designs and maps of the following:

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- 1) Location
- 2) Drainage diversions
- 3) Stockpile dimensions (include max and min slopes)
- 4) Biological stabilization (include rate and seed mix)
- 5) Compaction mitigation.

The use of the upper subsoils for a berm is adequate if another incised berm/drainage will be implemented around the perimeter of the waste backfill. The runoff from the waste material should not come into contact with any growth medium. The runoff will most likely contain toxic levels of boron. If this will not be implemented then I recommend a double berm in which the upper two feet of subsoils is removed first as an outside berm, then the remaining subsoils to removed and placed as the inside disturbance area berm.

#### Soil Redistribution

The plan does not adequately meet UMC 817.24. The submittal did not segregate the topsoil from the subsoil so no topsoil redistribution plan was established. A general soil redistribution plan was discussed. However, topsoil must be removed and stored separately from all subsoil. A redistribution plan is required. The plan should include:

- 1) Subsoil scarification prior to topsoil redistribution (include depth of scarification)
- 2) Expected depth of topsoil redistribution.
- 3) Topsoil compaction mitigation (Division recommends incorporating alfalfa at a rate of 1 ton per acre tilled in the upper acre slice).
- 4) Length of time between topsoil redistribution and seeding and mulching (if seeding will not occur for longer than one month some type of soil stabilization plans are needed.
- 5) The site should be left in a rough condition.
- 6) Redistribution should be carried out when the soil is dry.

The final total depth of soil redistribution is dependent upon the acceptance from the operator to the Divisions change in the backfilling and treatment of the acid- or toxic forming material. If the applicant advocates for the use of a 12 inch clay layer then the proposed four feet of soil redistribution will be adequate. If the no clay cap is placed on the waste then a total of five feet of material must be redistributed.

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### Topsoil Testing and Amendments

Prior to any site disturbance, the topsoil and subsoil must be sampled and analyzed for the following: Texture,  $\text{CaCO}_3$  %, pH, available phosphorus, electrical conductivity saturation percentage and potassium. The rate of sampling should be one sample every acre with a minimum total of three samples. The depth should be a composite of the upper seven inch soil depth and a composite of the soil between seven inches and 48 inches.

After redistribution (ie. final reclamation) the soil materials should be evaluated for fertilizer and other amendments as necessary.

### UMC 817.103 Backfilling and Grading: Covering Acid- And Toxic-Forming Materials - JSL

Due to the hydrologic problems associated with encapsulating acid-forming materials, the floor of the backfill site should not be lined with clay but should be lined with the required amount of  $\text{CaCO}_3$  equivalent. Based on the data submitted, sampled October 29, 1987, the required amount of  $\text{CaCO}_3$  equivalent would be between 23.13 to 25.94 tons of  $\text{CaCO}_3$ /1000 tons of proposed backfill waste material. Thus the floor will be lined with  $\text{CaCO}_3$  equivalent and the waste material would be backfilled on top of the  $\text{CaCO}_3$  equivalent material.

The Division also recommends that the clay liner not be placed on top of the waste if the applicant would redistribute a total of five feet of soil materials. Five feet of material is required to insure that the vegetative root growth does not come into significant contact with the waste material. Again, the boron is highly toxic and would cause substantial vegetative damage if the vegetation is impacted by the waste materials.

cc. R. Harden  
S. Linner  
✓R. Summers

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