



STATE OF UTAH
NATURAL RESOURCES
Oil, Gas & Mining

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August 29, 1986

Mr. Richard Blonquist
Summit Coal Company
P. O. Box 646
Coalville, Utah 84017

FILE COPY

Dear Mr. Blonquist:

Re: Initial Completeness Review, Mining and Reclamation Plan, Boyer Mine, PR0/043/008, Folder No. 2, Summit County, Utah

The Division has reviewed the Mining and Reclamation Plan (MRP) for the Boyer Mine submitted in January of 1984. The plan has been found to be both incomplete and technically deficient. The attached deficiency document outlines information that is required to make the plan complete and adequate.

In responding to this document, please format the response such that it fits into the existing document, i.e. by replacing existing pages or maps or inserting new text into the proper place in the MRP. In addition a cross-reference should be submitted listing all the regulations and the pages or sections in which they are addressed. Seven copies of the response must be submitted to the Division.

Please feel free to contact me or Susan C. Linner if you have questions regarding this review or would like to meet with the reviewers.

Sincerely,

L. P. Braxton

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

SCL:jvb
Attachment
cc: D. Guy
A. Klein
B Team
0028R-51

INITIAL COMPLETENESS REVIEW

Summit Minerals Company
Boyer Mine
PRO/043/008
Summit County, Utah

August 29, 1986

UMC 771.23 General Requirements for Format and Contents - SCL

The mining and Reclamation Plan (MRP) must be updated to include all changes in surface facilities design operation and reclamation plans made during the review of the exploration permit application. Specific references to required updated information are found throughout the following review.

UMC 771.25 Permit Fees - SCL

DOGM has no record that the \$5.00 application fee was paid at the time of submittal.

UMC 782.13 Identification of Interests - DL

- (a)(1) The applicant must provide his or her telephone number.
- (a)(2) On page 2-1 of the permit application, Tom and Vern Boyer - Land and Livestock are listed as the owners of record. On Plate 2-1 of the MRP a J. L. Boyer is shown as the surface owner of the proposed "Surface Area Affected." On Table 2-1A LaVern Boyer is listed as the surface owner for a portion of the proposed "Surface Area Affected." The applicant must clarify who the owner of record is for the entire proposed surface area affected.
- (a)(2) Table 2-1A provides descriptions of portions of the: Surface area affected, contiguous properties, and the names of the surface and mineral rights owners for each respective property. During the review of this table, a description could not be found of that portion of the surface area affected south of Chalk Creek in the E1/2, NE1/4, Section 36, Township 3 North, Range 6 East, which clearly states who owns the mineral and surface rights. The applicant must provide information which clarifies who the surface and mineral rights owner is of the above mentioned property.

- (a)(2) Table 2-1 is a list of all the mineral rights owners for the surface area affected. Table 2-1A has a list which indicates who the mineral rights owners are on several parcels of land within and contiguous to the surface area affected. Item 1 of Table 2-1A describes a portion of the surface area affected. Therefore all the mineral rights owners named under Item 1 should also be listed on Table 2-1, however, a number of the people listed in Item 1 of Table 2-1A are not listed (i.e. Linda and Norma Shipley and the spouses of Boyer Family members, if in fact their names are on the mineral rights documents).
- (a)(6) The applicant must provide the name and telephone number of their resident agent who will accept service of process.
- (b)(1) The applicant must provide addresses for all Corporate Officers and Directors.
- (b)(2) The applicant must provide the names and addresses of principal shareholders.

UMC 782.13 Contiguous Surface and Sub-Surface Land Owners - DL

- (e) Plate 2-1 which is supposed to delineate surface land ownership is difficult to read, as the property boundary lines are difficult to discern from other lines. The operator must provide a map which clearly delineates property boundary lines.

The applicant must provide complete addresses for all of the contiguous surface land owners.

Merrill and Freda Orgill who are identified as contiguous land owners in Table 2-1(A), item 5 are not identified as contiguous land owners in section 2.2.8 of the PAP nor are they identified as contiguous land owners on Plate 2-1. The applicant must clarify whether or not Merrell and Freda Orgill are contiguous land owners and make corrections to those pages and plates of the MRP as necessary.

G. and M. Jones who are identified as contiguous land owners on Plate 2-1 are not listed in section 2.2.8 of the MRP. The applicant must clarify whether G. and M. Jones are contiguous land owners and make the necessary changes to the MRP.

The applicant has not identified any of the contiguous subsurface area land owners in section 2.2.8 of the MRP as required. The applicant must identify all contiguous subsurface area land owners.

- (f) The applicant must supply the MSHA i.d. number for the mine.

UMC 782.14 Compliance Information - SCL

Since the exploration operation has received Notices of Violation, this section must be addressed in its entirety.

UMC 782.15 Right of Entry -DL

The MRP does not contain an adequate description of the documents on which the applicants base their legal right to conduct underground coal mining activities in the permit area. The applicant must provide copies of the surface and subsurface lease agreements covering the entire permit area.

UMC 782.17 Permit Term Information - DL

- (a) The Horizontal extent of the proposed underground mine workings is best illustrated on Plate 3-3. The acreages given in section 3.4.8.3 as referenced in Section 2.6.4 of the MRP are meaningless without Plate 3-3. The operator must reference both Plate 3-3 and Section 3.4.8.3 in Section 2.6.4.

Section 2.6.5 "vertical extent for each phase" references Plates 3-4(A) - (C) showing the proposed mine development for the life of the mine. Plates 3-4(A) thru (C) cannot be located in the application, however, this information is located in Plate 3-3 of the MRP. The applicant must clarify this information with the correct reference.

- (b) The applicant has requested a permit term of 14 years, however, they have not provided the information required by UMC 786.25(a)(2). If the applicant chooses to pursue the 14 year permit term the information required in UMC 786.25(a)(2) must be provided. Due to the nature of the required information it is suggested that the applicant request a standard five-year permit term, which can be renewed.

UMC 782.18 Personal Injury and Property Damage Insurance
Information - JRH

The applicant needs to provide a certificate of liability insurance in the MRP satisfying the requirements of UMC 800.60.

Due to revisions in the regulations concerning bonding and insurance a copy of the final rule, adopted June 20, 1985, for PART UMC 800 -- BOND AND INSURANCE REQUIREMENTS FOR SURFACE COAL MINING AND RECLAMATION OPERATIONS UNDER REGULATORY PROGRAMS, SUBCHAPTER J, is enclosed at the end of this review document.

UMC 782.19 Identification of Other Licenses and Permits - SCL, DL

Table 2-4 lists other permits required. However, this table does not include addresses of licensing authorities, identification numbers of the applications or permits, or dates of approval or disapproval. The applicant must revise the table to include this information. The mine operation will also require an Air Quality Approval Order from the State Department of Health, and this should be included in the list.

UMC 782.21 Newspaper Advertisement and Proof of Publication - SCL

The applicant references a publication notice in the MRP, but there is no copy of the notice or proof of publication. If the notice was published the applicant should provide a copy of the notice and proof of publication. If it was not published the applicant should submit a publication notice which complies with the requirements of this regulation. Notice need not actually be published until the Division determines the MRP to be complete.

UMC 783.12 General Environmental Resource Information - JRH

Information required in part (a) of this section should be updated in the MRP to reflect those changes made in the mining operation as a result of the exploration plan and operations currently occurring on the site.

UMC 783.14 Geology Description - DD

The applicant needs to define the existence of groundwater on and adjacent to the mine plan property. Identify formations that ground water occurs in and the depth down to the first aquifer below the coal seam to be mined. Supply groundwater quality data that has been collected and/or referenced in literature.

The applicant shall provide the pyritic content and potential alkalinity of the stratum immediately above and below the coal seam to be mined and the clay content of the stratum immediately below the coal seam to be mined.

The applicant shall provide pyrite and marcasite contents of the coal seam.

UMC 783.15 Groundwater Information - DD

The applicant shall describe the depth below the surface and the horizontal extent, the use and all water right owner or water in the aquifers.

UMC 783.15 Ground Water Information - DC

The applicant should submit the proposed information from the literature review, site specific investigations and test borings as stated in Sections 7.1.3 and 7.1.3.2. The proposal of the type of information to be submitted appears adequate but this proposal should be carried out and the information presented in the Mining and Reclamation Plan. Additionally, groundwater information presented in the SOAP submittal should be incorporated into the MRP. At a minimum this section should address all requirements under 783.15(a)(1)- (4) and 783.15(b).

UMC 783.16 Surface Water Information - DC

The applicant should submit the proposed information from the literature review and site specific investigations as stated in Section 7.2.2 and water quality information as stated in 7.2.3. The results of these investigations should be presented in the Mining and Reclamation Plan. Additionally, surface water information presented in the SOAP submittal should be incorporated into the MRP. At a minimum surface water information must include information on all surface water bodies in and adjacent to the permit area; minimum, maximum and average discharge conditions of Chalk Creek and all tributary drainages; and water quality data for Chalk Creek and all tributary drainages as outlined in UMC 783.16(b)(2)(i) - (vii).

UMC 783.17 Alternative Water Supply Information - DC

The applicant should make Sections 3.5.3.2 and 7.1.6 consistent. These two sections are conflicting and should be consistent with each other. Additionally, the applicant should state whether water rights for the alternatives mentioned in Section 6.5.3.2 are or will be available to the Summit Coal Company.

UMC 783.18 Climatological Information - LK

This information is currently not in the plan, however, it is included in the SOAP report. Once the information from the SOAP report is incorporated into the mine plan, this section should be complete.

UMC 783.19 Vegetation Information - LK

The vegetation data supplied (Chapter 9) was not collected as per DOGM Vegetation Information Guidelines and is inadequate.

There is no discussion on sampling methodology and sample size sampling must be done during the height of the growing season (i.e., late June through early September), not late winter.

Cover data must be collected by species and total vegetation cover (the latter not to exceed 100%). There is no woody plant density data. From productivity data reported and the table on pages 9-4, all range sites are in poor condition, thus precluding the option of using the range site method for revegetation success standards.

Therefore, a vegetation reference area(s) will need to be established and approved (with vegetation data being collected during the growing season).

UMC 783.21 Soil Resources Information - JSL

The soil series legend on the Soil Map Plate 8-1, 2B and 3G, does not correlate with the soil survey labels 1B and 2G (Mowebe gravelly loam and Richville loam soils, respectively). Please amend.

UMC 783.22 Land Use Information - LK

There are problems with the discussion on reclamation in the land use chapter. Refer to UMC 784.13 for specifics.

UMC 783.24-25 Maps: General Requirements, Cross Sections, Maps, and Plans - JRH

Maps, plans and cross sections provided in the MRP need to be revised to reflect those changes made in the exploration plan for the operation and other intended revisions to the MRP since the submittal of the MRP to the Division.

UMC 783.25 Cross-sections, Maps and Plans - DD

The applicant shall provide a map of the mine plan area that defines old or abandoned mine locations on and adjacent to the permit area and areas worked prior to August 3, 1977. Provide, on the same map those areas worked after August 3, 1977 and the proposed areas of mining. Indicate dates of mining and show all pillars, drill holes, wells, springs and creeks. Map size should be at least 1 inch = 250 feet (1:3000 scale).

The applicant shall provide a geologic map of the mine plan and adjacent area of a size at least 1 inch = 500 ft (1:6000 scale). Included on the map shall be formations, attitudes, of formations drill hole locations, coal outcrops, cross section lines, springs and all adits or openings to mines.

The applicant shall provide geologic cross-sections of the permit and adjacent areas.

UMC 784.11 Operation Plan: General Requirements - JRH

The description of the coal mining methods and procedures used during mining operation should be revised as a result of the information and modifications accounted for in the exploration phase of the facilities. Primarily, expected changes in the operation plan would include information gathered on coal reserves, recovery and mining sequence. Waste facilities will have to be modified to include sediment pond waste materials. Refer to comments made in the technical deficiencies section of this review.

A description explaining the construction, modification, use, maintenance, and removal of the proposed facilities must be incorporated into the plan. Since most of the facilities of the operation currently exist as a result of exploration operations, the text of the MRP should be revised to reflect those facilities. Basically, this section should deal with proposed facilities which are in addition to those existing facilities.

UMC 784.12 Operation Plan: Existing Structures - JRH

As a result of the exploration operations at the mine site, a majority of the facilities proposed in the MRP are currently existing. This section of the MRP should provide a complete description of the existing facilities, maps and plans of the existing facilities, proposed modifications, a construction schedule for modifications to the existing facilities, and evidence that the existing facilities meet or shall be modified to meet the performance standards of Subchapter B of Chapter VII, 30 CFR, and Subchapter K of the UMC Regulations.

The applicant should carefully review all the information required in this section to ensure that it is included in the MRP and that this section can be determined complete upon resubmittal.

UMC 784.13 Reclamation Plan: General Requirements - JRH

Upgrading the facilities from an exploration to a mining operation will require the applicant to incorporate all facilities and disturbances resulting from exploration work into the Mining and Reclamation Plan.

The reclamation plan in the MRP needs to be revised to include changes in the operation plan. The applicant should closely review and incorporate into the plan, all of the requirements under this section. Guidelines with regard to reclamation practices and procedures are currently available or will be in the near future.

UMC 784.13 Revegetation Plan - LK

- (b)(5) The reclamation plan in chapter 9 should be discarded. Section 9.6 Mitigation & Management Plans should refer to the reclamation section in chapter 3 instead of Section 9.7.

The revegetation plan in Chapter 3 (Section 3.6.5) should be replaced with the revegetation plan for the exploration permit (Appendix III in the undated submittal).

In Chapter 4, page 4-13, comments regarding various phases of revegetation are made which potentially conflict with the revegetation plan. These need to be eliminated and the references to Section 9.7 be corrected to refer to the appropriate sections in Chapter III.

UMC 784.13 Reclamation Plan: General Requirements - JSL

- (b)(5)(iii) In the October 10, 1984 Exploration Mine Review (EMR) response, Appendix 3, Reclamation Plan, Phase 3, Site Preparation, Figure 9-1 delineates shrub planting parallel to a highwall on the upslope of a steep slope. Due to the increased probability of the upslope soil highwall failure and erosion, this is an unacceptable planting technique.

- (b)(7) The applicant states that there are no acid- or toxic-forming materials on site. However, data submitted in previous EMR responses indicates a sulfur content of 0.17 to 4.20 percent (American Chemicals and Research Laboratories). Based on this information the coal material has an acid production potential (APP) equal to -5.3 to -131.25 tons CaCO_3 /1000 tons of material. An Acid Base Potential (ABP) of -5 tons CaCO_3 /1000 tons of material is defined as an acid or toxic forming material. However, to fully determine the ABP one must also look at the neutralization potential (NP). The ABP is then determined by the following: $\text{ABP} = \text{APP} - \text{NP}$ where units are in tons CaCO_3 /1000 tons material equivalence. The NP analysis has not been determined for the prospective coal material. Due to the variability of sulfur in the coal, the Division

recommends that the operator sample the roof, mid-seam, and floor after every 1000 feet of mine entry and crosscut (1,000 quadrants). All acid and toxic forming materials must be disposed of in compliance with UMC 817.48 and UMC 817.103

UMC 784.14 Protection of Hydrologic Balance - DC

The applicant must describe, in detail, the methods to be used to protect the quality of surface and groundwater resources in and adjacent to the permit area. This description should also include a comprehensive map showing all details of the drainage and sediment control plan, for both the operational and reclamation phases. A map showing the location of all surface and ground water rights adjacent to the permit area must be submitted. A comprehensive ground and surface water monitoring plan that is in accordance with the Water Monitoring Guidelines established by the Division must be submitted. Additionally, the applicant must use all of the hydrologic information presented in the plan to prepare a determination of the probable hydrologic consequences of the mining operation.

UMC 784.16 Reclamation Plan: Ponds, Impoundments, Banks, Dams and Embankments - DC

The applicant must incorporate the sediment pond designs in the October 10, 1984 reply to Technical Deficiency Review into the Mining and Reclamation Plan. All input assumptions concerning design storm volume should also be included in the MRP. See comments under UMC 817.46 for additional comments.

UMC 784.16 Reclamation Plan: Ponds, Impoundments, Banks, Dams and Embankments - JRH

Since the water impoundments proposed in the mine plan are currently existing, as-builts of the sediment pond and calculations proving the adequacy of the existing facilities should be provided.

UMC 784.18 Relocation or Use of Public Roads - JRH

The Operator shall submit recent permits and approvals for right-of-entry from the county road, including the new access for the haul road, and incorporate them into the MRP.

UMC 784.19 Underground Development Waste - JRH

The Operator must locate, design and provide a reclamation plan for a site for the temporary and permanent disposal of underground development waste for the mine. Although the Operator has indicated that such material will not be generated on the site it is apparent

that normal operations on the site will accumulate coal and non-coal waste material. Sources of this waste material include but are not limited to fines and wastage from coal screening and handling facilities on the site, cleanup of the loadout area and the haulage roads on the site, and sediment pond waste material.

UMC 784.20 Subsidence Control Plan - DD

The applicant shall develop a subsidence control plan. Include a survey which shows whether structures or renewable resources exist within the proposed permit or adjacent area, and if subsidence does occur would it cause material damage or diminution.

If a survey shows that structures or renewable resources exist, or if this Division should determine that damage to structures or renewable resources will occur the applicant shall submit the information listed below:

- a. A detailed description of the mining method and other measures to be taken which may affect subsidence, including:
 1. The technique of coal removal, such as longwall mining, room and pillar with pillar removal, hydraulic mining or other methods; and
 2. The extent, if any, to which planned and controlled subsidence is intended.
- b. A detailed description of the measures to be taken to prevent subsidence from causing material damage or lessening the value or reasonably foreseeable use of the surface, including -
 1. The anticipated effects of planned subsidence, if any;
 2. Measures, if any, to be taken in the mine to reduce the likelihood of subsidence, including such measures as -
 - i. back stowing or backfilling of voids;
 - ii Leaving support pillars of coal; and
 - iii Areas in which no coal removal is planned, including a description of the overlying area to be protected by leaving coal in place.
 3. Measures to be taken on the surface to prevent material damage or lessening of the value or reasonably foreseeable use of the surface including such measures as -

- i Reinforcement of sensitive structures or features;
 - ii Installation of footers designed to reduce damage caused by movement;
 - iii Change of location of pipelines, utility lines or other features;
 - iv Relocation of movable improvements to sites outside the angle-of-draw; and
 - v Monitoring, if any, to determine the commencement and degree of subsidence so that measures consistent with known technology may be adopted in order to prevent subsidence from causing material damage to the extent technologically and economically feasible, maximize mine stability, and in order to maintain the value and reasonably foreseeable use of such surface lands, except in those instances where the mining technology requires planned subsidence in a predictable and controlled manner: Provided, that nothing in this subsection shall be construed to prohibit the standard methods of mining. The monitoring, if any, will continue until the final cessation of mining and the completion of reclamation has occurred or until such shorter time as may be approved by the Division.
- c. A detailed description of the measures to be taken to mitigate the effects of any material damage or diminution of value or foreseeable use of lands which may occur, including one or more of the following as required by UMC 817.124 -
- 1. Restoration or rehabilitation of structures and features, including approximate land-surface contours, to premining condition.
 - 2. Replacement of structures destroyed by subsidence.
 - 3. Purchase of structures prior to mining and restoration of the land after subsidence to a condition capable of supporting and suitable for the structures and foreseeable land uses.
 - 4. Purchase of renewable insurance policies payable to the surface owner in the full amount of the possible material damage or other comparable measures.

- d. A detailed description of measures to be taken to determine the degree of material damage or diminution of the value or foreseeable use of the surface, including such measures as -
 1. The results of presubsidence surveys of all structures and surface features which might be materially damaged by subsidence.
 2. Monitoring, if any, proposed to measure deformations near specified structures or features or otherwise as appropriate for the operation.

UMC 784.23 Operation Plan: Maps and Plans - JRH

Revisions made to the site as a result of the installation of the exploration facilities as well as other modifications planned or proposed must be incorporated into the MRP in order to consider this section complete.

UMC 784.24 Transportation Facilities - JRH

The applicant must incorporate revisions made in the exploration plan and planned revisions to the original plan into the MRP in order to determine this section complete.

UMC 784.25 Return of Coal Processing Waste To Underground Workings - JRH

The operator has indicated that there will be no coal processing waste returned to underground workings. In the event that the Operator wishes to return coal and non-coal waste to underground workings for permanent disposal, a commitment must be made to comply with the requirements of this section.

TECHNICAL DEFICIENCIES

UMC 817.11 Signs and Markers - SCL

The application does not address the use of perimeter markers as required by this section.

UMC 817.13 Casing and Sealing of Exposed Underground Openings:
General Requirements - JRH

The Operator has not satisfactorily described the measures to be taken for both temporary and permanent closures of underground workings. Temporary closures and permanent closures must be in accordance with MSHA requirements under 30 CFR regulations. Additionally, under the Division's guidelines, requirements for permanent closure of mine openings includes both a block stopping and a minimum of 25 feet of backfill for each portal. The Operator should readdress this section accordingly.

UMC 817.14 Casing and Sealing of Exposed Underground Openings:
Temporary - JRH

See section UMC 817.13 above.

UMC 817.15 Casing and Sealing of Exposed Underground Openings:
Permanent - JRH

See section UMC 817.13 above.

UMC 817.22 Soil: Removal - JSL

Throughout the reclamation plan and the EMR response, the operator has committed to various topsoil and subsoil removal depths. The operator has committed to a twelve inch topsoil and six inch subsoil redistribution depth. However at no time has a soil mass balance table or a specified depth of soil removal been presented. The applicant states in the October 10, 1984 EMR response, that the volume of useable soil is presented in Plate 8-1a. Plate 8-1a was not submitted. The operator must submit a soil mass balance table. This table should be in an accountant-like fashion, ie. credit and debit soil volumes. The exact acreage disturbed, the depth of removal, the volume of topsoil removed and stockpiled, the volume of subsoil removed and stockpiled and the location, acreage, and depth of postmining reclamation soil redistribution, must be included in this table.

The applicant must answer the previous reviewers comment UMC 817.22, Soil: Removal - TLP, which stated "What is meant by the statement on page 7 of the November 13, 1984 response..." "A large portion of the area will not be disturbed until such time as reclamation commences." Is this a borrow area? If so please submit a narrative as to the operational and reclamation plan for this area. Include premining and postmining cross sections, and delineate the location on the surface facilities map.

UMC 817.23 Soil: Storage - JSL

In the reclamation plan the operator commits to prevent the establishment of noxious plant species. On July 03, 1986 Lynn Kunzler and James Leatherwood of the Division visited the Boyer mine site. It was evident that vegetation establishment and weed control had not been successful at that time. The Division recommends that the topsoil stockpile be sprayed in the spring with a herbicide and revegetated with the enclosed interim seed mix.

UMC 817.24 Soil: Redistribution - JSL

The operator must develop a cohesive soil redistribution plan throughout the MRP. The current exploration plan and revisions have various discrepant soil redistribution depths (ie. EMR response, October 10, 1984, pg. 7; Appendix 3, Reclamation Plan, pg. 9-7 and in the Technical Adequacy response). The Division has accepted the commitment by the operator to redistribute six inches of subsoil and twelve inches of topsoil. This redistribution depth must be adhered to until such time that the Division is provided with technical data that identifies reclamation success with a lesser depth of soil. This may be accomplished through experimental test plots. The operator must consult the Division in this matter.

The EMR response dated September 07, 1984, Redistribution of Soils, last sentence of paragraph four states that tillage will protect the redistributed topsoil from wind and water erosion. This must be deleted from the Permit. Unfortunately, the weight of research shows that tillage actually increases soil erodability.

The Division does recommend tilling the top six inches of redistributed topsoil to alleviate compaction. The Division also recommends tilling in 0.75 ton of alfalfa to a six inch depth into the subsoil material prior to topsoil redistribution.

The operator must commit to redistribute the soil material only when the mass water content is less than fifty percent of field capacity and insure that the redistributed soil is reseeded and mulched in less than a one week period. If this is not possible, the operator must develop and describe what means will be used to insure soil stability.

UMC 817.25 Soil: Nutrients and Amendments - JSL

An issue has been raised between the previous reviewer and the operator. The specific issue dealt with effectiveness of ripping as a means to adequately distribute the fertilizer throughout the soil. This issue cannot be resolved until the operator defines and commits to a specific fertilizer management plan. The Division has reviewed the fertilizer recommendation rate submitted by Native Plants Inc. The following is an approveable fertilizer management recommendation based upon Native Plants recommendation. The following plan is based on a broadcast distribution of a granular fertilizer with Division personnel on site at the time of application. The fall application should consist of Urea for the nitrogen requirement, diammonium phosphate for the phosphate requirement and potassium sulfate for the potassium requirement. The spring fertilizer program should consist of diammonium phosphate and potassium sulfate. Based on the applicant's fertilizer recommendation (Appendix 3, Reclamation Plan, pg. 9-9) the following fertilizer and rate is recommended:

<u>Fertilizer Type</u>	<u>Analysis</u>	<u>Rate (lb/ac)</u>	
		<u>Fall</u>	<u>Spring</u>
Urea	45-0-0	111	0
Diammonium phosphate	21-53-0	142	47
Potassium Sulfate	0-0-52	75	25

The potassium rate has been reduced from that recommended, due to the usual inherent supply of potassium in these soils. The operator must change the potassium recommendation of K_2O_2 to K_2O . The following corrections must also be made: 1.) Samples 1A, 1B, 2A, 2B, and 3 sodium adsorption ratio values must be corrected to 0.38, 0.56, 0.41, 0.40, and 0.40 respectively. 2) Texture must be corrected in samples 1A and 1B to read as a Clay Loam.

Other Nutrient and Amendment changes in the MRP should include: 1) eliminating the fertilization application with the mulch, 2) change the post mining reclamation soil sampling scheme from composite sampling to individual site sampling, as composite sampling tends to dilute the soil samples, and 3) the following must be analyzed at the time of final reclamation: pH, electrical conductivity, potassium, zinc, iron, available phosphorus and texture.

UMC 817.41 Hydrologic Balance: General Requirements - DC

The applicant must describe in detail all practices and structures that will be used to control and minimize water pollution. These practices may include but are not limited to stabilizing disturbed areas through land shaping, diverting runoff, vegetation, regulating channel velocity in diversions, lining diversion channels, mulching, and preventing gravity drainage of acid waters from the mine.

UMC 817.42 Hydrologic Balance: Water Quality Standards and Effluent Limitations - DC

The applicant must demonstrate, on a map and with a narrative, how all runoff from the disturbed area will be passed through the sedimentation pond. The applicant must demonstrate how the detention of the surface runoff in the pond will meet all state and federal water quality laws and regulations. Additionally, the applicant should include a copy of the NPDES Permit required for discharge out of the pond.

UMC 817.43 Hydrologic Balance: Diversions and Conveyance of Overland Flow, Shallow Ground Water Flow, and Ephemeral Streams - DC

The applicant must submit complete designs for the undisturbed diversions of the gully above the minesite. The designs must include the computation of the 10-year, 24-hour runoff for the diversion, peak flow rate, culvert and ditch capacities, velocities at the design event and any required channel linings.

UMC 817.46 Hydrologic Balance: Sedimentation Ponds - DC

The applicant must incorporate all of the sediment pond designs in the October 10, 1984 submittal into the Mining and Reclamation Plan. The applicant must address all subsections of this regulation before a technical analysis can be performed on the pond.

UMC 817.47 Hydrologic Balance: Discharge Structures - DC

The applicant must determine outlet velocities at the primary and emergency spillways of the sediment pond, at all culvert outlets, and any other discharge structure in the permit area. Outlet protection must be designed for all areas where discharge velocities are capable of producing erosion.

UMC 817.49 Hydrologic Balance: Permanent and Temporary Impoundments - DC

The applicant has not addressed this regulation.

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

The applicant has stated in Section 7.1.7 and 7.2.7 that surface and ground water monitoring will occur but has not committed to a plan. The applicant must submit a comprehensive ground and surface water monitoring program that is in accordance with the Water Monitoring Guidelines that have been established by the Division.

UMC 817.59 Coal Recovery - JRH

The Operator should incorporate into the MRP any revisions to the mining plans for the site which may affect the coal recovery plans provided in the application as a result of the exploratory work accomplished at the site.

UMC 817.71 Disposal of Excess Spoil and Underground Development Waste:

General Requirements - JRH

The provisions of this section require that excess spoil and underground development waste be disposed of within the permit area. Under Utah guidelines, sediment pond waste is to be treated and disposed of in accordance with those standards set under coal processing waste. The Operator must provide for both temporary and permanent waste disposal facilities for sediment pond material within the permit area.

See also those comments made under section UMC 784.19.

UMC 817.88 Coal Processing Waste: Return to Underground Workings - JRH

See those comments made under UMC 784.25.

UMC 817.89 Disposal of Non-Coal Wastes - JRH

The Operator should provide in the plan, a detailed design and analysis providing for the disposal of non-coal waste materials on the site. Several State and Federal laws govern the location and disposition of material such as oil and grease, liquid wastes, hazardous wastes, PCB's and other such materials that may be encountered on the mine site. The Operator should provide the location and proof of compliance with State and Federal regulations for any off-site facility to be used by the Operator including sanitary landfills and contractors landfills. The Operator must also commit to disposal of all such non-coal waste materials in accordance with Local, State and Federal regulations.

UMC 817.99 Slides and Other Damage - JRH

The requirements of this section were not found to be addressed in the MRP. The Operator should commit to notify the Division in the event of a slide or other damage that occurs on the site.

UMC 817.101 Backfilling and Grading: General Requirements - JRH

Specific plans for backfilling and grading are required in the MRP under this section. Additionally sufficient information must be provided to the Division regarding earthwork mass balances to determine reclamation costs for bonding purposes. The Operator shall include in the resubmittal of the MRP, all current forms and contours accomplished on the site as a result of exploration activities, additional work which is planned in conjunction with the operational phase of the mining and the required earthwork which will to comply with backfilling and regrading requirements of this section. Sufficient details including maps, plans, cross sections, mass balance and other calculations should be provided in the plan to determine adequacy of the design for reclamation.

UMC 817.101 Backfilling and Grading: General Requirements - JSL

Many types of soil stabilization techniques have been discussed by the operator, ie. cut faces, terraces, and basins. The Division requires that the operator commit to a specific plan, and delineate the appropriate plan on the final reclamation map. Once a specific soil stabilization technique is decided upon, the operator must submit all pertinent technical information. For instance, if basins are to be employed, what equipment will be used, at what time will the operation take place in respect to other operations, what is the design criteria (ie. depth and general shape). The Division also requests the operator to define the grouser operation from the revised reclamation plan in the Technical Adequacy response (undated).

UMC 187.103 Backfilling and Grading: Covering Coal and Acid- and Toxic-Forming Materials - JRH

Coal analysis found currently in the MRP accounts only for the metallurgical quality of the coal and does not include the parameters required to determine whether the materials left on the site will be acid- or toxic- forming. Please refer to the soils guidelines regarding the appropriate analyses required. Additional calculations and treatments may be necessary if the analyses show the material to be either acid- or toxic-forming.

UMC 817.106 Regrading and Stabilization of Rills and Gullies - JSL

The operator must commit to fill (with topsoil), regrade, and seed all rills and gullies before they degrade to a depth of nine inches.

UMC 817.131 Cessation of Operations: Temporary - SCL

The applicant must commit to comply with the requirements of this section in the event of temporary cessation of operations.

UMC 817.150-.156 Class I Roads - JRH
UMC 817.160-.166 Class II Roads - JRH
UMC 817.170-.176 Class III Roads - JRH

Roads existing on the site and those proposed in the MRP will most likely be classified under all three of the above road classifications. The Operator must show by design calculations, drawings and within the text of the MRP that the existing roads on the site comply or will comply with the design, construction, operation, maintenance and reclamation requirements of these sections. The Operator should completely review and include the requirements of these sections in the MRP.

UMC 817.180 Other Transportation Facilities - JRH
UMC 817.181 Support Facilities and Utility Installations - JRH

The above sections of the regulations require that the design, installation, operation and maintenance of such facilities minimize environmental degradation of the permit and surrounding areas. The Operator should indicate in the discription of such facilities, what measures are or will be taken to protect these environmental concerns.

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DOGM RECOMMENDED SEED MIX FOR TOPSOIL STABILIZATION
Summit Minerals Company
Boyer Mine

<u>SPECIES</u>	<u>RATE*</u>
<u>Agropyron dasystachyum</u> Thickspike wheatgrass	5
<u>Agropyron smithii</u> Western wheatgrass	5
<u>Sporobolus cryptandrus</u> Sand dropseed	.5
<u>Medicago sativa</u> Alfalfa	2
<u>Melilotus officinalis</u> Yellow sweetclover	2
<u>Penstemon palmeri</u> Palmer penstemon	.5
TOTAL	15 lbs.

* Rate is Pounds Pure Live Seed/Acre for Broadcast seeding.