

0015



STATE OF UTAH
NATURAL RESOURCES
Oil, Gas & Mining

File
ACT/007/019 #2

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August 19, 1987

CERTIFIED RETURN RECEIPT REQUESTED
P 001 717 718

Mr. Sam Quigley
Andalex Resources, Inc.
P. O. Box 902
Price, Utah 84501

Dear Mr. Quigley:

Re: Determination of Completeness Review, Centennial Project,
ACT/007/019, Folder No. 2, Carbon County, Utah

The Division has reviewed the Mining and Reclamation Plan (MRP) for the Centennial Project, which was resubmitted April 13, 1987, in response to the Division's original Completeness Review (January 21, 1987). The plan is still determined to be incomplete, as outlined in the attached review.

The majority of the deficiencies listed in this Completeness Review are the same deficiencies outlined in our January 21, 1987, Determination of Completeness Review. The January 21, 1987 comments are underlined in the attached review. These deficiencies have not been fully addressed or responded to.

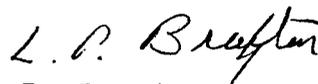
Most of our concerns regarding the deficiencies have been portrayed to Mike Glasson in the above referenced review, in meetings held at the Division's office (April 15, 1987), at the mine site (July 16, 1987) and in phone conversations.

In order to achieve a technically complete and adequate Mining and Reclamation Plan and to ensure that compliance action will not be taken by the Division for failure to adequately address previously noted deficiencies, we must have the enclosed deficiencies addressed completely and submitted as inserts or addendums to the MRP within 30 days of receipt of this review.

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Mr. Sam Quigley
ACT/007/019
August 19, 1987

If you have any questions please feel free to call Sue Linner
or myself.

Sincerely,



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

DWD:ptb
Enclosure
cc: R. Holbrook
M. Glasson
S. Linner
B. Team
0005R-101

Determination of Completeness

MRP Resubmittal
Andalex Resources Inc.
Centennial Project
ACT/007/019
Carbon County, Utah

August 18, 1987

UMC 770.12 Coordination with Requirements Under Other Laws - HWS

Original DOGM Comment

- (a) Nothing in the permit was found which addresses the requirements of the Toxic Substances and Control Act, 15 U.S.C. 2605, 2607 and 2611. These sections have to do specifically with PCB containing equipment, storage, and elimination.
- (a)(2) The language on page 44 of the permit, Chapter II, last line needs to be changed from "under 30 CFR 817.95," to "under UMC 817.95." The federal regulations have been remanded.
- (a)(3) Nothing in the permit was found which addressed the Resource Conservation and Recovery Act, 42 U.S.C. Section 3251 et seq., specifically storage of petroleum products on the site.

Determination of Completeness

These comments have not been addressed.

UMC 771.23 Permit Applications - General Requirements

Determination of Completeness - KRW

- (b) This application is neither clear, current, nor concise. For example, there are contradictions concerning the number of ground water wells on site, the acreage disturbed, location of water quality monitoring stations, diversion

ditch design, and others which were not noted. Many of the maps were not current or not of sufficient detail to determine present conditions at the mine. There was discussion and references to old design plans that should be removed or updated. The Table of Contents and cross reference directory are incomplete or out-dated, commonly referencing sections, pages and chapters that do not exist. Finally, the document is poorly organized, making an adequate review very difficult. The document must have sequentially numbered pages, all Figures and Maps numbered and referenced appropriately in the text narrative, a comprehensive Table of Contents, and all literature sources properly cited.

UMC 776.23 Permit Applications - General Requirements for Format and Contents - SCL

Original DOGM Comment

- (b) The application still contains much outdated and conflicting information. Exhibits, Appendices and drawings must be relabeled as appropriate. All references in the text should be checked for accuracy. The regulation by regulation cross-reference must be updated and resubmitted. A copy of this review document, noting where each paragraph is addressed must also be provided upon resubmittal of the Mining and Reclamation Plan (MRP).

Determination of Completeness

There are still conflicts in the plan and areas where the cross-references are incomplete or wrong. Specific problems are addressed throughout this review document. The applicant did not submit a copy of the previous review document, with notations to the resubmittal, which made review very difficult.

UMC 782.13 Identification of Interests - SCL

Original DOGM Comment

- (a)(1) The applicant is still listed as Tower Resources.

Determination of Completeness

These sections have been corrected.

Original DOGM Comment

- (a)(5) The operator is still listed as Tower Resources.

Determination of Completeness

These sections have been corrected.

Original DOGM Comment

(a)(6) No phone number for the resident agent is given.

Determination of Completeness

This section has not been addressed.

Original DOGM Comment

(e) No address for Sun Oil Company is given. An incorrect address for the Division of State Lands is given. Plate 3 shows AEP as an adjacent mineral owner, but the text says Franklin Real Estate Co. is the owner. This must be clarified.

Determination of Completeness

The address for the Division of State Lands has not been corrected.

Additional Comments

No address is given for J. and S. Critchlow. SUNEDCO should be listed under Surface owners.

Original DOGM Comment

(g) This appears to be an erroneous legal description since the land described is not contiguous to the permit area.

Determination of Completeness

This has not been corrected. The correct legal description is Township 13 South, Range 10 East.

UMC 782.14 Compliance Information - SCL

Original DOGM Comment

(c) The listing of violations is not current; violations received for the last three years must be listed.

Determination of Completeness

The applicant has not updated the list to include violations received at the Centennial Project site in the last 3 years.

UMC 782.18 Personal Injury and Property Damage Insurance
Information - JRH

Determination of Completeness

This section is complete.

The operator has provided evidence of insurance as required by the Division. The certificate of liability insurance is found at the end of Appendix A, Chapter II of the MRP. Insurance is provided through Old Republic Insurance Company.

UMC 782.19 Identification of Other Licenses and Permits - SCL

Original DOGM Comment

This section is not complete. The addresses are out of date, no renewal dates are given. Should reference Appendix A, Exhibit II-A (Chapter VIII) for approval letters.

Determination of Completeness

These items have not been addressed.

UMC 782.21 Newspaper Advertisement and Proof of Publication - SCL

Original DOGM Comment

The publication notice has not been made a part of the application.

Determination of Completeness

This has not been done.

UMC 783.12 General Environmental Resource Information - JRH/SCL

Original DOGM Comment

The application must contain sign off(s) from the State Historical Preservation Officer for the mine disturbance and Emergency Lease.

Determination of Completeness

A clearance for the Emergency Lease was not included in the MRP.

UMC 783.13-16 Description of Geology and Hydrology (Ground Water and Surface Water Information)-KRW

Original DOGM Comment

The operator must include a description of the geology within the proposed mine plan area, down to and including the first aquifer to be affected below the lowest coal seam to be mined. As part of this description the operator must identify the first aquifer below the lowest coal seam to be mined.

Determination of Completeness - DWD

This section is not complete.

The applicant has identified the Aberdeen Sandstone as the first aquifer below the lowest coal seam to be mined (Section 3.3-1.4). Based on this information the applicant needs to identify the horizontal extent and thickness of the Aberdeen Sandstone aquifer, and establish any water tables that exist.

Original DOGM Comment

The operator must submit a summary of all water quality data that has been collected to date. This summary must include when flows occurred and any seasonal variation of total dissolved solids, total suspended solids, acidity, pH, total and dissolved iron, and total manganese. The operator must include a summary of the amount and quality of water that has been discharged from the mine into the surface water system.

Determination of Completeness - KRW

This section is not complete.

The present document contains some water quality data, this is generally one to four samples (1 year) at the baseline sampling stations. Two years of data, as per Division Guide lines, are needed for baseline sampling and should be presented in this document.

Because the permanent sampling stations are not the same as the baseline sampling stations the Division has requested that all water quality samples to date be submitted. The present permit contains 1 year of data (1984) for 6 of the 10 proposed sample stations, with one extra station (006 Outfall, 1984 water quality data) not located on the monitoring station map. Furthermore, the submitted data shows a spring identified as S18-3, although in the permit application this site is not identified as a spring.

The applicant needs to make a clear concise summary of the ground water and surface water quality in the area. This summary should include all of the data collected during the baseline monitoring period and the operational period. This includes discharge for the surface stations and static water level for the monitoring wells, as well as the parameters that are required to be sampled under the approved monitoring plan (see UMC 784.14 of this document). Since contradictions exist concerning monitoring and stations and sample frequencies (see UMC 784.14 of this document), the summary should include a table listing all monitoring stations (past and present) and the dates which they were monitored.

II. 783.15

- (a) The permit application is insufficient in delineating the depth below the surface and the horizontal extent of the aquifers in the mine area. The inability of an aquifer to sustain a high pumping rates does not indicate that the aquifer is small, perched or lenticular.
- (b) The permit contradicts itself, or is not current on the number of wells at the mine site. Plate 6 shows four ground water wells at the mine site, the mine plan discusses three wells, and two wells are talked about in the Hydrologic Inventory Section. Furthermore, the Hydrologic Inventory Section says that both wells will be monitored, but water quality data is given for only one well.

The operator must submit a map of the aquifer and sufficient data on the wells, so that the Division can evaluate the depth to ground water, direction of flow, and areal extent of the aquifer. This data should include the following:

- 1) Location of each well, clearly shown on a topographic map.
- 2) Elevation of each bore hole.
- 3) Depth to static water level.
- 4) Lithology of aquifer.
- 5) Drill logs of each well.
- 6) Results of all tests performed on each well.
- 7) Any other pertinent information on the aquifer that the operator has available. This should include the results of deepening Well # 1.

UMC 783.17 Alternative Water Supply Information - DC

Original DOGM Comment

The operator discusses water rights in the 1981 Hydrologic Inventory located in Chapter IX. However, the operator should update the water rights discussion to include information current up to the submittal date.

Determination of Completeness - KRW

This section is not complete.

The operator discusses water rights in the 1981 Hydrologic Inventory. However, the operator needs up-date this discussion or note that there have been no changes in water rights in the area. Furthermore, the operator needs to state in a narrative how the mine could impact water resources and identify alternative sources of water that could be developed or bought to mitigate impacts on nearby water rights.

UMC 783.19 Vegetation Information - LK

Original DOGM Comment

A demonstration that the data were collected during a year of normal or better precipitation (see DOGM Vegetation Information Guidelines for the Range Site Method).

Determination of Completeness

This was not addressed in the MRP. Precipitation data for the Price weather station supplied to DOGM by the National Oceanographic and Atmospheric Administration (NOAA) was reviewed to determine whether vegetation data was collected during a 'normal' precipitation year, as defined in DOGM's Vegetation Information Guidelines (criteria for use of the range site method for determining revegetation success requires vegetation data to be collected during a 'normal' year). While precipitation for the period October 1980 to June 1981 equaled 100% of the average for this same October-June period, precipitation for May (.54"), June (.16") and July (.22") 1981 was only 75%, 23% and 26% of the average for each month, respectively. This does not meet the criteria for a 'normal' precipitation year. Therefore, the use of range sites for determining revegetation success cannot be approved, and reference areas (or other suitable success standard) will need to be employed. If reference areas are used, the following will need to be done: Select and permanently mark in the field appropriate reference areas (DOGM can assist in the selection process), change appropriate sections in the mine plan to show that reference areas will be used for the revegetation success standard, and have the SCS evaluate the range condition of the reference area(s) on a 5-year basis (during the 1987 field season and the field seasons prior to submitting the permit renewal application).

Original DOGM Comment

Page 90 refers to Table IV-7 for a list of important vegetation species. Table IV-10 on page 91 appears to be the referenced material. Please correct.

Determination of Completeness

This comment was not addressed.

Original DOGM Comment

The acreage of disturbance for each range site needs to be provided as well as the total acreage disturbed. The current plan identifies seven acres (page III-25 & IV-92), 24.25 acres (page 12 (immediately preceding page IV-94 which will be referred as page 93a hereafter)), and 20.66 acres (Page 1 of Vegetation study) of disturbance. DOGM staff planimetered Map 34 and found 33.9 acres. Please clarify.

Determination of Completeness

Page III-25 was revised to read approximately 33 acres. None of the other comments were addressed and are still valid.

UMC 783.21 Soil Resources Information - JSL

Original DOGM Comment

The applicant has submitted the soil survey by Earth Environmental Consultants Inc. However the soil survey and map conducted by the SCS, May 27, 1980 was not submitted. The May 27, 1980 survey is found in the previously permitted MRP as exhibit IV-C, and the corresponding soils map as plate XIII. This survey and map corresponds to that portion of the disturbance area that was not mapped by Earth Environmental Consultants Inc. The SCS soil survey and map must be incorporated into the MRP. Plate 18 must be updated to reflect the previously surveyed area by the SCS. This can be accomplished by identifying the previously surveyed area on plate 18 with a reference to the SCS map.

The applicant must update the acreage of each soil series disturbed (page 3, Earth Environmental Consultants Inc. soil survey). The acreages given for each specific soil series is incorrect. The total acreage of disturbance does not equal 20.66 acres. DOGM staff planimetered the total disturbance acreage of Map 20 to be approximately 33.8 acres.

Determination of Completeness

The applicant has not addressed this section.

UMC 783.22 Land-Use Information - JRH/LK

Original DOGM Comment

Grazing lands and wildlife habitat are considered renewable resources lands. Impacts to these resources will require mitigation. Statements contrary to this on page 42 must be corrected.

Determination of Completeness

This comment was not addressed.

Original DOGM Comment

The MRP contains outdated production projections. Actual production information should be included through 1986 and the Operator should project production for the next five year permit term and for the life of the mine as required.

Determination of Completeness

The operator has submitted this information by hand writing the information into the existing text. This information is considered to be complete.

UMC 783.24 Maps: General Requirements - JRH/SCL

Original DOGM Comment

- (b) The applicant must submit a map which correctly delineates the permit area as excluding the three lease modifications. These areas have not been permitted by OSM or DOGM.

Determination of Completeness

The applicant shows the correct permit area on Plate 4. Section UMC 782.15 should reference Plate 4 as showing the correct permit area boundary.

Original DOGM Comment

- (d) Those maps referenced do not indicate any buildings in and within 1000 feet of the proposed permit area. The Operator shall revise the drawings to provide the location and identification of all structures found within that area in order to complete the requirements of this section.

Determination of Completeness

This section is not complete.

Maps and plans provided in the mining and reclamation plan do not clearly show the affected area as required. The facilities maps for the site should clearly depict the affected area and the number of acres should also be provided on the drawing. The revegetation map indicates the different reclamation treatments but does not provide the acreages for each application. Several of the required maps do not contain the mark of a registered professional engineer.

UMC 783.25 Maps: Cross Sections, Maps, and Plans - JRH

Original DOGM Comment

- (1) Appropriate maps and drawings must bear the number and mark of a registered professional engineer or land surveyor as appropriate. Many of the drawings found in the MRP do not have such identification on them.

Determination of Completeness

This section is not complete.

Maps and plans provided in the mining and reclamation plan do not clearly show the affected area as required. The facilities maps for the site should clearly depict the affected area and the number of acres should also be provided on the drawing. The revegetation map indicates the different reclamation treatments but does not provide the acreages for each application. Several of the required maps do not contain the mark of a registered professional engineer.

UMC 783.25 Cross-Sections, Maps, and Plans

Determination of Completeness - KRW

The following information is needed:

- (a) See UMC 783.13-16 II.
- (b) The present permit shows the location of all monitoring sites correctly labeled, this map needs to be corrected to show the present monitoring stations. Furthermore, a distinction should be made between old monitoring sites and current sites.
- (f) The permit does not address this map. Sufficient data should be available for determination of the ground water aquifer. This map should be submitted with the data required in UMC 783.15 (a and b).

UMC 784.11 Operation Plan: General Requirements - JRH

Original DOGM Comment

- (a) Insufficient information is found in the operation plan regarding mine planning, production and projection of annual and total tonnages. This section should include a recap of the production of the mining operations for the last five years and an updated version of the annual and total production expected for the operation in light of the additional lease areas incorporated into the mining and reclamation plan.
- (b) Changes, modifications, revisions and amendments to the mine plan since the original application must be incorporated into the text of the operation and reclamation plan. Information such as the affected area acreage, the location and identification of specific reclamation treatment areas and other such information that is required in the MRP is not found on the drawings or within the text or conflicts with other outdated information within the text of the MRP. This information must be clarified and presented to the Division in a manner such that the information can be located in the MRP and that the plan is coherent throughout.

Determination of Completeness

This section is considered to be complete, however the organization and the format of the materials presented in the plan is poorly ordered and structured.

The operator indicates in Chapter III of the mining and reclamation plan that all of the surface facilities and structures required for mining operations were constructed during the initial permit and that no further facilities are planned for construction.

A description of the type and method of coal mining and the anticipated tonnages from production is also found in this section of the mining and reclamation plan. Three seams are to be mined, which are the Gilson, Aberdeen and the Lower Sunnyside. Each seam will consist of separate portals and no interconnecting shaft or slopes are planned. Mining pillars and entries are to be superimposed to achieve maximum safety and recovery and minimize ground stress during mining operations. Coal production is expected to reach 1.2 million tons/year by the year 1990 and remain at that rate throughout the life of the mine.

The current method of underground mining consists of the utilization of continuous miners with feeder breaker and conveyor haulage to the surface.

Raw coal is hauled from the permit area and no coal processing occurs on site. Coal loadout and haulage is accomplished by utilizing a front end loader for loading into 28 ton coal haulage trucks.

The operator indicates that since only raw coal is produced at the mine site, no spoils or mine development waste will be brought to the surface and no waste disposal facility will be required. The operator further indicates that no coal waste will be returned to underground workings.

The only dams or water impounding structures on the site are the sediment ponds which do not meet the water impoundment criteria as required under 30 CFR 77.216.

UMC 784.12 Operation Plan: Existing Structures - JRH

Additional Comments

This section is considered to be complete, however the material is still poorly ordered in the plan and references found in the table of contents and the the regulation cross reference. The operator needs to reorganize the plan.

The operator has indicated that all structures were constructed during the initial permit term. No existing structures were utilized at the site prior to implementation of the operator's permit. Structures constructed during the initial permit term were under the requirements of Subchapter K - Performance Standards.

UMC 784.13 Reclamation Plan: General Requirements - JRH/LK

Original DOGM Comment

(b)(5) Submission of DOGM's Draft Revegetation Guidelines does not constitute a revegetation plan. A specific plan must be supplied.

Section 5.1, Schedule of Revegetation (page IV-92) must be revised to show seeding will occur late fall (after October 1) and that tree and shrub transplants will be planted the following spring.

While the applicant plans mulch (page IV-93), the type(s) of mulch, the areas to be mulched and the rate of application must be identified.

The applicant must provide specific details on the revegetation monitoring plan, i.e. what parameters will be measured, frequency & timing of samples for each parameter, etc. and at what level will reclamation be determined to be progressing in a satisfactory manner during early monitoring.

Determination of Completeness

This section is not complete.

These comments were addressed by the applicant stating that DOGM guidelines would be followed. This does not constitute a specific revegetation plan as required. The previous comments are still valid and must be addressed.

Original DOGM Comment

The reclamation plan as provided in the MRP is not coherent and it cannot be determined complete. Several of the sections found do not correspond to existing or proposed site conditions. Information pertaining to the reclamation of the site is not clear and does not completely describe the required reclamation activities which must be accomplished on the site.

In order to determine the reclamation plan complete, the Operator shall be required to revise and consolidate the information into a comprehensive and complete plan. All information in the plan must be updated to reflect the existing or proposed conditions of the site at the time of reclamation. The Operator shall provide a detailed and logical sequence and description of the reclamation activities to occur on the site. This information can be presented in a format that could also be used to determine the reclamation cost estimate.

The reclamation plan must consider the quantities of the reclamation activities involved in order to determine a cost estimate for bonding and in order to prove the reclaimability of the site. Mass balance calculations must be provided by the Operator to show treatment of excess mine development waste, regrading requirements to achieve approximate original contour, topsoil distribution, and design and stability of the final reclamation contours.

The reclamation plan must also indicate the timing and sequence of the reclamation work to be accomplished. In addition to the logical requirements for the revegetation plan, the Operator must also include specific plans for sediment control and water diversion for Phase I reclamation. Phase I reclamation is accomplished when initial regrading and revegetation treatments have been achieved, but sediment control and measures to protect the site from erosion are used to maintain effluent requirements on the site until

vegetation requirements have been established. Phase I reclamation requires that sediment control structures such as sediment ponds and diversion ditches remain until such time as vegetative cover has been established. The Operator should include in the plan and the reclamation cost estimate, specific plans and costs for the removal of these structures.

No reclamation plans or designs have been provided for the reestablishment of the natural drainages upon the reclamation of the site. The Operator must include specific channel sizing criteria, riprap sizing, and quantity estimates for this work.

Determination of Completeness

A narrative description of the type and method of coal mining operations proposed is found in Part III A of the MRP. Initial operation of the Pinnacle Mine commenced on October 3, 1980. Coal mining is accomplished utilizing continuous miners in a conventional room and pillar type mining operation. The operator anticipates that mining production for the operations will increase from the current rate of 700,000 tons/year to approximately 1,200,000 tons/year by the year 1990. Production at the increase rate is expected to remain constant throughout the life of the mine(III A 5).

A description of the construction, modification, use, maintenance and removal of the facilities used for mining operations is discussed in chapter III of the mining and reclamation plan. All of the existing structures are located on plate 6 and 7. Until completion of the mining activities, the portals will be sealed according to existing state and federal regulations and all buildings and structures not being utilized as part of the mining sequence will be removed, according to Part E of Chapter III. All of the structures proposed in the mining and reclamation plan have been completed during the initial permit term for these mining operations.

Although this section could be considered technically complete, the operator has not presented the information in an orderly fashion as previously requested. Only minor portions of the text was revised and updated in the plan.

Determination of Completeness - KRW

The following information is needed:

- (b)(1) The reclamation plan needs to specifically address. Under this section a detailed timetable of the water monitoring period and removal of the sediment ponds needs to be included (see 784.14 of this document for Monitoring Plan specifications).

UMC 784.14 Reclamation Plan: Protection of Hydrologic Balance - DC

Original DOGM Comment

The operator must reorganize Chapter 4, Section B to include up to date information regarding the surface and ground water monitoring program, the status of the water wells, discharge of water from the mine and a summary of all ground and surface water monitoring. There is conflicting information concerning the hydrology of the area between Chapter 4, the 1981 Hydrologic Inventory, and Exhibit III-C. All of the information from the above sections and from the Emergency Lease submittal must be reorganized and compiled into a complete and coherent discussion of the hydrology of the area.

Determination of Completeness - KRW

- (3) The permit application must include a monitoring plan. This plan should include specific discussion on monitoring station locations, frequency of monitoring, and all parameters that will be monitored (see Guidelines For Establishment of Surface and Ground Water Monitoring Programs for Coal Mining and Reclamation Operations). Also see UMC 783.13-16 I. of this document.

This section still needs to be updated and corrected as specified above.

UMC 784.14 Reclamation Plan: Protection of Hydrologic Balance - JRH

Original DOGM Comment

- (d) Information regarding the closure of underground mine openings is found on page 47 of the MRP. Insufficient information is provided by the operator in order to determine this section complete. The Operator must provide specific plans for closure of all mine openings and with regard to this section, what measures will be taken to minimize the impacts on surface and ground water upon closure. The Operator shall provide a specific plan for closure of the mine openings, including hydrologic seals as required in order to protect inflow or outflow of surface and ground water at the mine opening. This information was previously requested by the Division but cannot be found in the revised MRP.

See also comments made under UMC 817.13-.15.

Determination of Completeness

This section is not complete.

Conflicting information is found in the plan regarding the permanent closure of the mine openings and the probability of mine water discharge upon cessation of mining operations. Please refer to UMC 817.15 for additional comments.

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

Additional Comments

This section is not complete.

The operator fails in the description of the sediment pond facilities, to indicate the sequence and timing for the removal and reclamation of the sediment ponds. Sediment control structures must remain on the site upon initial reclamation until such time a vegetative and effluent standards are met. The operator must provide a suitable description for the removal and use of the sediment ponds throughout reclamation. In the event that recontouring of the site through reclamation makes the pond(s) unsuitable or ineffective, other such sediment control measures must be designed, described and included in the mining and reclamation plan.

UMC 784.18 Relocation or Use of Public Roads - JRH

Original DOGM Comment

The Operator must include in the mining and reclamation plan, the most recent approvals for road use permits, right-of-entry permits and evidence of approval for any relocation or other use of public roads. This information is not found in the plan or is not properly referenced so as to locate this information in the MRP.

Determination of Completeness

This section is complete.

The operator indicates on page 45, Chapter III of the mining and reclamation plan that there will be no underground mining activities within 100 feet of the right-of-way line of any public road, nor has any public road been relocated or are there such plans for such relocation.

UMC 784.19 Underground Development Waste - JRH

Original DOGM Comment

The Operator has indicated that no underground development waste will be brought to the surface. Please note however, that waste material is and has been generated in and around the mine facilities, loading area and through cleanout of the sediment ponds. The Operator shall submit a plan for both the temporary and permanent storage of these materials in order to determine this section complete. This information was previously requested by the Division but was not found in the revised MRP.

Determination of Completeness

This section is not complete.

The operator has indicated that the mine produces raw coal and has no processing waste materials. However, the applicant does not address the method of disposal of incidental coal spoils and coal waste. The plan must incorporate such material as sediment pond waste, cleanup of loadout and coal transportation facilities and other such coal waste materials that may be generated on the site. The operator must identify and locate both temporary and permanent locations for the disposal of this coal waste material. One suitable alternative could be that the operator locate a temporary location for the stockpiling of such materials. Upon reclamation, these materials could be used as backfill materials, if proven to be suitable. The operator may also wish to indicate that coal fines or spills from the coal handling and conveyor system would be added to the raw coal and shipped as mine product. Sediment pond waste must be treated as coal waste material due to the high content of coal waste and spoil materials collected from the disturbed area. However, upon suitable testing of the material, other applications for use of this material may be determined and proposed by the operator.

UMC 784.21 Fish and Wildlife Plan - LK

Original DOGM Comment

A specific fish and wildlife plan must be included in the permit application. 33.9 acres of disturbance (as digitized from map 34 by DOGM staff) is a significant impact on deer winter range and needs to be mitigated. The operator needs to document how compliance with special stipulation #7 has been achieved. What is the posted speed limit on unpaved sections of the road? Are Swareflex reflectors being used? Other appropriate wildlife mitigation/enhancement that should be included in the Fish and Wildlife plan include: an employee education/awareness training program, design/construction of powerlines in accordance with raptor protection technology, and restoration/enhancement of wildlife habitat features.

Determination of Completeness

The applicant has not addressed how compliance with special condition #7 was achieved. This is still needed.

The applicant has provided a verbatim copy of recommendations from the Utah Division of Wildlife Resources (DWR) for mitigation of wildlife impacts for the fish and wildlife plan. Is it the intent of ARI to implement all DWR recommendations? If so, this needs to be made clear in the MRP.

UMC 784.22 Diversions

Determination of Completeness - KRW

This section is not complete.

The following information is needed to properly evaluate expected channel velocities. The permit application needs to show longitudinal profiles of all existing diversions, proposed diversions and the reclaimed channels. These profiles should show all check dams (concrete or loose rock) that are being used or are proposed to be used to reduce channel velocities. The application should contain designs for each diversion demonstrating adequate capacity, expected velocity at design flow, and an evaluation of riprap protection required (or demonstration that flows are nonerosive for existing channel material).

The application should contain the modification received by the Division dated July 30, 1986 for replacement of road culvert.

UMC 784.23 Operation Plan: Maps and Plans - JRH

Original DOGM Comment

Surface facilities maps and plans have been submitted by the operator and are included in the plan. Some conflicts in the drawings regarding the proposed location of the new office building and the proposed vs. existing configurations of the sediment ponds is found in the drawings. The Operator shall be required to submit current as-built drawings of the facilities and clearly indicate what facilities are to remain as proposed and the sequence and timing of their construction. Although some of this information has been revised on the drawings, it does not correspond completely with the descriptions and the plans found in the text of the plan. Specific references to drawings in the text of the MRP do not correspond to the drawings. This information must be revised in order to determine this section complete.

Determination of Completeness

This section is not complete.

Some of the drawings and maps were updated to eliminate old and conflicting information. Those replacement maps are incomplete in that they do not bear the mark of a registered professional engineer, and, that primary information such as the disturbed area boundaries are not presented on the drawings. These maps and plans must be submitted in an approvable format prior to determination of completeness.

UMC 784.23 Operation Plan: Maps and Plans

Determination of Completeness - KRW

The following information is needed:

- (b)(6) The permit application needs to address this section more thoroughly. The application has maps showing some of the diversions as they exist or as they are proposed. Many of these are incomplete, outdated or of insufficient detail to evaluate the diversion. The following maps are needed to evaluate the diversion ditches:
- 1) A map of all diversion ditches (stream channel and overland flow) as they exist.
 - 2) A map of all proposed diversion ditches (stream channel and overland flow) as they are proposed during the Aberdeen Expansion phase.
 - 3) A map of all diversion ditches (stream channel and overland flow) as they are proposed during the reclamation period, before the removal of the sediment ponds.
 - 4) A map of the final reclaimed channels that will remain as permanent structures.

These maps should be on a topographical base map of 1 in to 200 ft or less, with sufficient detail to determine watershed slopes. The maps should show only hydrologically relevant information. This includes road culverts, well locations, sediment ponds, diversion ditches, and the entire area drained by each diversion. It should be noted that Plate 9 has the watersheds incorrectly delineated, the inter-basin areas of undisturbed land are not drained by the culverts and should be shown as draining to the diversion ditches.

Each structure should be clearly delineated and labeled along with any berms or other topographic controls which divide drainages but are too small to be shown at the map scale.

Maps 1 and 2 could be combined if there will be no changes in the existing structures by the addition of the Aberdeen Expansion.

Maps 3 and 4 could also be combined if all structures shown on Map 3 will be permanent and the only changes will be the removal of the sediment ponds.

The removal of the drainage culvert and establishment of the reclaimed channel will require changes in the discharge structure of Sediment Pond C. These design changes must be detailed and shown to be capable of passing the design storm (25-yr, 24-hr)(see 817.46 II 2B of this document).

UMC 784.24 Transportation Facilities - JRH

Original DOGM Comment

Some of the information regarding the requirements of this section are found in the MRP. However, due to the organization of the plan, it is not apparent that all of the information required for this section is contained in the MRP. The operator shall reorganize the plan such that this information can be readily located and such that only the current information is referred to in the plan. These revisions were previously requested but are not evident in the revised MRP.

Determination of Completeness

The previously stated comments still apply to this section.

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

Additional Comments

This section is complete.

The operator states in III C 2.6 that there will be no coal processing waste returned to underground workings.

TECHNICAL DEFICIENCIES

UMC 800 Bonding - JRH

Original DOGM Comment

A copy of the bond for the operations is found in Chapter II of the MRP. The bond amount determined is estimated for 1986 dollars and is in the amount of \$381,839.00.

Cost estimate information for reclamation found in the MRP was developed in 1981 and needs to be revised and updated to incorporate all those changes and modifications to the surface facilities. Calculations must be resubmitted in order to determine the updated amount of bond required for the operation.

In providing the revised cost estimate, the Operator shall be required to determine the quantities required for each reclamation construction activity, the equipment selected to accomplish the reclamation work, productivity calculations for the equipment based on site criteria, and determination of unit costs and total costs for each reclamation activity. The Division uses Caterpillar Handbook for determination of equipment and productivity, Blue Book Rental Rate Guide for equipment costs, and Means Cost Data to determine labor costs, miscellaneous construction activities and escalation factors to be used in determining the estimated costs for the site.

The Operator shall include with the cost estimate a reference of the sources used in order to determine those costs. Planametric or cross sectional information shall be provided along with calculations in order to determine mass balances for the earth work required. The Operator shall also provide a map of the surface facilities area delineating the specific reclamation treatments for each area as they apply. Suitable maps and sections are found in the MRP which can be utilized to accomplish these requirements, however specific technical information must be included on the drawings in order to determine the bond amount. Maps should include such information as the total affected area, permit area boundaries, identification and location of topsoil piles and waste piles, the acreage and depth of topsoil to be used in reclamation, and the acreage and respective seed mix to be used in revegetation for each respective area. Cross sections should include cut and fill areas and reference earth work calculations if not included on the drawing. The map shall also indicate the timing and the sequence for the reclamation work to be accomplished, primarily Phase I and Phase II reclamation work. Phase I reclamation consists of the majority of the reclamation work to be accomplished, but sediment control facilities are to remain until vegetation and sediment control standards are met. Phase II reclamation will involve the removal of the sediment control facilities once vegetative cover is established (sediment ponds, diversion ditches, etc.).

The Division shall utilize the estimate provided by the Operator in order to determine the amount of bond required.

Determination of Adequacy

This section is not technically adequate. The operator has not provided the above requested information.

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

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

Original DOGM Comment

- (a) The Operator must include in the MRP, specific plans addressing the temporary closure of mine openings during temporary suspension or inactive periods of mining operations. These commitments shall be similar to those required under 30 CFR 1711 requirements made by MSHA. This information must be included in the plan in order to determine this section technically adequate.
- (b) The Operator must provide in the MRP, specific information regarding the closure of all drill holes, wells and shafts. The measures taken by the operator to temporarily seal these openings must be included in the mining and reclamation plan.

Determination of Adequacy

This section is not technically adequate.

The operator has not addressed this section of the regulations pertaining to the temporary sealing of mine openings. The operator had directly responded to UMC 817.14, but comments were in regard to permanent closure of mine openings and not temporary closure.

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

Original DOGM Comment

The Operator must provide specific plans for reclamation of the mine openings. Division guidelines for the closure of mine portals requires that a concrete block stopping designed in accordance with 30 CFR regulations be installed and a minimum of 25 feet of non-combustible material be backfilled into the mine opening. Plans for the final closure of mine openings must also address the protection of the hydrologic balance. Hydrologic seals will have to

be installed in the event of potential discharge of water from the mine openings. This determination must be made by the Operator and approved by the Division in order to determine this section complete.

Any monitoring or water wells that are to remain as a post mining land use must have the approval from the Division of Water Rights and a well transfer form completed and approved if the operator wishes to transfer any such wells to the landowner. Otherwise, the Operator shall include specific information for the permanent closure of these wells.

Determination of Adequacy

This section is not technically adequate.

On page 31, Chapter II of the mining and reclamation plan, the operator indicates that, "Since all mining is down dip from the portals, no water will exit from the mine." On page 47-a, the operator indicated that, "Since a portion of the mine slopes towards the portals, and mine water is present, seals will be constructed at least one drainage pipe in the lowest portal."

No definitive information is provided in the mining and reclamation plan in order to determine the amount or the quality of the water expected to be discharged from the mine. The operator needs to determine these values and include them in this section of the plan. Further conflicting information found in the plan should be removed and replaced as necessary.

The operator further indicates that in the event that mine water does discharge from the portals, that it will be sampled quarterly for compliance with effluent standards and treated if necessary during the liability period.

In the event that mine water does discharge from the portals or is expected to discharge from the mine. The operator shall be required to obtain an NPDES permit for such discharge. More details as to the hydrologic balance of the mining operations upon cessation of mining activities should be included in the hydrology section of the plan. In any event the operator needs to provide commitment to permanently treat and handle mine water discharge upon completion of mining activities.

UMC 817.22 Topsoil: Removal - JSL

Original DOGM Comment

A topsoil mass balance table must be incorporated into the MRP. This table must include the acreage of proposed future disturbance and present disturbance; volume of stockpiled topsoil; and the proposed depth of topsoil redistribution. The applicant must also include the specific depths of topsoil removal for all future disturbances. Include the methodology to verify that the appropriate depth of soil is being removed (flagging, islands etc.).

Determination of Adequacy

This section has not been addressed.

Additional Comments

On April 23, 1987 the Division had approved a modification to the plan. The temporary substitute topsoil material located at the pad site had been replaced with the substitute topsoil materials contained within the dike of decommissioned sediment pond A. The dike is now the substitute topsoil stockpile. Sediment pond A is now no longer functioning as a sediment pond and should not be referenced to as a sediment pond within the scope of this plan. For further clarification refer to April 14, 1987 and April 17, 1987 memos to file and the approval letter dated April 23, 1987. The recent April 13, 1987 submittal does not contain this approval or reflect the various surface and hydrological facility changes. The plan must be updated. Sediment pond A must be deleted from the text of the document as a sediment pond. The April 15 submittal of plate 6, must be updated along with Plate 8 and appropriate text. The applicant must also insert into the plan all applicable hydrologic information demonstrating that all disturbed drainage will be handled by sediment ponds B and C.

UMC 817.23 Topsoil: Storage - JSL

Additional Comment

The Division can not approve the disposal of noncoal waste next to the soil stockpile as indicated on plate 6, unless the operator explicitly defines how the substitute topsoil material will be adequately protected.

UMC 817.24 Topsoil: Redistribution - JSL

Original DOGM Comment

The applicant must submit the following information:

- A) The soil redistribution plan must include specific methodology to minimize soil slippage. The Division recommends ripping the subsurface material six inches prior to topsoil redistribution;
- B) Plans to alleviate topsoil compaction after redistribution must be specified within the MRP. The Division recommends tilling in one ton of alfalfa per acre at a six inch depth (or other organic material with a C:N ratio of 20:1). This amendment would enhance the aeration, water holding capacity, microbiological communities and stabilize a favorable nutrient cycle within the topsoil;
- C) The minimum depth of topsoil redistribution must be explicitly defined for the disturbance area; and,

Determination of Adequacy

This section is not technically adequate.

ARI states that topsoil will be replaced according to UDOGM guidelines. This is not adequate. The applicant must commit to specific performance standards. The soil guidelines should not be construed as a specific soil management plan. The guidelines are to be used as an aid to develop specific operation and reclamation plans.

UMC 817.25 Topsoil: Nutrients and Amendments - JSL

Original DOGM Comment

The following must be committed to within the MRP:

- A) Sample and test all redistributed topsoil and subsoils for the following parameters: organic matter, available phosphorus, potassium, pH, electrical conductivity and texture. Sampling rate must be equal to a minimum of one sample for each five acres of disturbance. Each site must be sampled at the following depths: 0-6 inches, 6-12 inches, and 12-24 inches. The specific sample sites must be identified and presented on the soil survey map 90 days prior to final reclamation; and,

- B) Redistribute and incorporate one ton of alfalfa (or other organic material with a C:N ratio of 20:1) into the redistributed topsoil.

Determination of Adequacy

This section is not technically adequate.

UMC 817.42 Hydrologic Balance: Water Quality Standards And Effluent Limitations

Determination of Adequacy - KRW

This section is not technically adequate.

- (a)(1) The application needs to contain plans for sediment control for the office facilities area and the powder magazine. This should include the area, slope, cover, sediment yields, water yields and all sediment control measures to be used to prevent degradation of the receiving waters. This should include a water monitoring plan to show that the drainage from these areas are not in excess of effluent limitations.

Field inspections showed that there was some sediment control measures applied to the drainage area around the office buildings. These included straw bales and pavement, however there were some road embankments that needed revegetation. Plans to reestablish vegetation on the road embankments as well as a commitment to monitor the discharge from this area should be included in the description.

Field inspections also showed that the drainage from the powder magazine area does not report to any sediment control facility. Just south and east of the powder magazine area there is a small basin that could be used for a stilling basin. The applicant should submit a short narrative describing the area, slope, cover, sediment yields, water yields and all sediment control measures that will be used to reduce sediment yields from this area. This should include a commitment to monitoring the discharge from the stilling basin.

The field inspection also found two point discharge sources at the mine site, one was at Sediment Pond C and one was from the underground workings. In the text of the application references to one NPDES permit was found, however, the location of the discharge point was not given. These two point sources need to be discussed and a NPDES permit presented for each source. Furthermore, the applicant needs to show that the permits are current for each of the discharge points.

UMC 817.43 Hydrologic Balance: Diversions and Conveyance of Overland Flow - DC

Original DOGM Comment

The operator has included several sections on diversion design in the MRP. The discussion of diversions should be limited to only what is present on the ground currently. All sections in the MRP that have been revised or changed should be taken out of the submittal. The discussion of the diversions should include the following components for review. The following comments apply to both undisturbed diversions around or under the mine site and disturbed diversions that report to treatment facilities.

The operator must submit a map(s) of the area draining to each diversion. The map(s) must depict the controls that delineate the areas (i.e., berms, topographic, etc.), disturbed versus undisturbed areas, and location and label of each diversion. The map(s) should be of a topographic scale that is sufficient to determine elevation change and hydraulic length. The operator must submit a cross section for each diversion and each section of diversion that varies in configuration. A peak flow for the design event for each diversion must be submitted. All input assumptions and calculations must be included. From the design discharge for each diversion the operator must calculate and present the design velocity and diversion capacity. All diversions that will experience erodible velocities, in the diversion or at the outlet, must be reinforced and protected to prevent erosion.

Determination of Adequacy - KRW

This section is not technically adequate.

The operator has attempted to respond to the Determination of Completeness document dated 1-21-87; however, Plates 6 and 7 are not sufficient to evaluate the diversions. Part of the inadequacy will be eliminated after responding to UMC 784.22 of this document.

Although complete calculations of riprap design were not done preliminary review of the riprap design shows that the filter blankets are not acceptable. Filter blankets should be at least as thick as the mean riprap diameter. For operational diversions, the Division will accept 9 inches of 3/4 inch well graded gravel fill for all filter blankets, if there applicant will commit to the use of correctly sized, well graded, dumped, angular riprap. However, for final channel reclamation designs, a designed, engineered filter blanket will be required.

The information on culvert design seems acceptable, but Plate 9 needs to be updated to show actual culvert dimensions. The mine plan states that an energy dissipator will be used at the exit of culvert C15. Field inspection showed that no such structure existed and that it was possibly not needed due to the size of existing rocks at the outlet. The Division requires that the applicant install the aforementioned erosion protection and update any relevant maps, or demonstrate that the existing rock at the outlet is of sufficient size to effectively control erosion at the outlet and that the applicant will monitor the outlet after each large storm to ensure that no erosion is occurring.

In talking to Mike Glasson on 7-17-87 he stated that the culverts had conveyed the runoff from a 100 yr storm event. Documentation of this event and the structures that were in place at the time of the event would be helpful in evaluating culvert and diversion ditch design.

The Division did find several discrepancies in the design of the diversion ditches. Plates 6 and 7 show riprap protection on the undisturbed drainage channels (unlabeled); however, the discussion, calculations, and cross-sections of these channels do not show riprap protection. The plans, calculations and cross-sections must be revised to agree with each other.

UMC 817.44 Stream Channel Diversions - DC

Original DOGM Comment

The operator has submitted information on culvert sizes needed in the Sedimentation and Drainage Control Plan and the revised Sedimentation and Drainage Control Plan. The discussion of stream channel diversions should be limited to only what is on the ground currently. All sections in the MRP that have been revised or changed should be taken out of the submittal. Additionally, the discussion must include the following components for review.

A map of the area draining to each culvert must be submitted. The map must depict the controls that delineate the areas, the location and a label of each culvert. Designs for each culvert must be submitted. Specifically, a peak flow for the design event with all input assumptions and calculations for each culvert must be submitted. The operator must demonstrate that each culvert is capable of passing the design event. From the design discharge the operator must calculate an exit velocity from the main culvert. If the exit velocity is erodible, designs must be submitted for an energy dissipator at the culvert outlet.

This regulation also requires that the operator submit complete reclamation plans for the channels after removal of the culverts. This plan must include a demonstration that the reclaimed channels will be capable of safely passing the 100-year, 24-hour precipitation event runoff. This demonstration must include a peak flow for the design event. From the design discharge for each channel the operator must calculate and present the design velocity and channel capacity. All channels that will experience erodible velocities must be lined and protected to prevent erosion. All channel lining designs must be submitted for review. These designs must include all input assumptions (i.e., Manning's n, area, slope, etc.) and subsequent calculations for a stable channel lining. The operator must also include cross-sections for each reclaimed channel.

Determination of Adequacy - KRW

This section is not technically adequate.

- (d)(1-3) This section needs to be specifically addressed in the permit. The main channel drains an area of greater than one square mile and must be addressed under this section. Because the drainage is ephemeral, restoration of aquatic habitat is not of primary concern, however the reestablishment of the riparian habitat is. The Division recommends the use of a series of loose rock check dams in the restored main channel. These loose rock check dams enhance riparian habitat by raising the stream zone water table making water more available for the establishment of riparian vegetation. Furthermore, they can reduce or eliminate the need for channel riprap by reducing channel slopes and providing grade control. If the applicant chooses not to use a series of check dams the Division requires longitudinal profiles of the upstream and downstream natural channels (1/4 mile) to show that the restored channel will approximate the natural stream channel characteristics.

Also see Section 817.43 Determination of adequacy.

UMC 817.46 Hydrologic Balance: Sedimentation Ponds - JRH

Original DOGM Comment

The Operator does not include detailed sections or information regarding the sediment pond in order to determine whether or not the ponds comply with parts (i) through (u) of this section. The Operator must clearly show that the design and the construction of the sediment ponds are in accordance with the requirements of this section. In particular, the combined inslope and outslope of the embankments shall not exceed 5h:1v and the minimum embankment width shall not be less than the height of the embankment plus 35, divided by 5 as the height is measured from the upstream toe of the embankment. The Operator shall submit the information as required in order to determine this section technically adequate.

Revised maps of the sediment pond were provided with the revised MRP, however insufficient information is provided on the drawings in order to determine this section technically adequate. The sediment pond drawings must show the location and the elevations of the inlet and outlet control structures, and the elevation of the pond when passing the peak event as required in the regulations. Sections or plans of the sediment ponds must clearly show that the ponds meet the criteria of this section. The drawings do not show that the combined inslope and outslope of each embankment equal a total of 1v:5h or greater as required. The drawings do not show that the minimum width of the embankment meets the requirements of the regulations.

Contour information provided on the drawings must be expanded to incorporate the pond embankment and any other cuts or embankments which may affect the overall stability of the sediment pond embankments. In the event that these structure do not meet the criteria of this section, the Operator must develop and provide designs for reconstruction of the ponds in order to meet these criteria, or, provide designs and analysis which prove that the existing ponds are sound and in a stable condition within the criteria set for the stability of these embankments.

Original DOGM Comment-DC

The operator has included several sections and maps in the MRP discussing sedimentation ponds. The material included is contradictory and unclear as to what ponds have actually been constructed at the mine site and which ponds are proposed. The operator must reorganize all discussions of sedimentation ponds at the site and clearly present what is currently on the ground and what is still being proposed. All text and maps should be coordinated to reflect what has been constructed and what is proposed. If any of the ponds have been constructed differently

from the original designs, as-built drawings must be submitted. Technical review of the sedimentation ponds cannot be performed until the operator has reorganized all sections and presented the material in a concise and coherent manner. As a reminder of the technical review performed by the Division, the operator must address all subsections of this regulation. All input assumptions and calculations must be presented in the MRP.

Determination of Adequacy - KRW

This section is not technically adequate.

The permit application shows four sedimentation ponds(a, b, c, and d). This has been changed with the recent approval of the new topsoil storage area. To present a clear, concise and current mine plan (UMC 771.23) Sedimentation Pond A and all references to it should be removed.

I) Preliminary Observations on Sediment Pond B (Plate 11):

- 1) Plate 11 does not show the current design of this sediment pond. Field observations on 7-17-87 showed that culverts are used to convey the water through each dike; this should be changed to show current configurations.

To help reduce the amount of design work and calculations needed for this permit the Division recommends redefining Sediment Pond B as primary settling basins. This would be acceptable since all of the runoff and sediment from the area above Pond B eventually report to Sediment Pond C. Redefining Sediment Pond B as a primary settling basin will eliminates the need to show containment volumes and detention times for Pond B as required by this section.

Upon development of stage volume curve for Sedimentation Pond C (see comments in Part B UMC 817.46 of this document), if the applicant finds that Pond C cannot contain the entire runoff and sediment volumes from the drainage area, the Division would allow subtracting the volume of water and sediment that are stored in the dead storage area of the stilling basin (Sediment Pond B). If subtracting the dead storage space behind the stilling basin is necessary to allow Sediment Pond C to function correctly, the applicant must submit to placing sediment markers in the stilling basins which corresponds to a sediment volume of 0.1 acre ft / acre draining into the stilling basin and to clean the ponds when this volume is reached.

II) Preliminary Observations on Sedimentation Pond C

- 1) The permit application needs to construct a stage volume curve that shows the sediment pond can contain the design sediment volume and the 10yr - 24hr design storm.
- 2) A) The permit should also contain a stage discharge curve along with the methodology and calculations used to evaluate the dewatering devise. This curve should show that the primary spillway can pass a 10 yr. - 24 hr. storm event and that the primary and emergency spillways can safely pass the 25yr - 24hr storm event and have the necessary free board required in UMC 817.46 (j). The use of Mannings Equation does not appear to be justifiable in this case due to the use of culvert and the constrictions in the pipe.
B) A second stage discharge curve during the reclamation period will be required. This curve should reflect the new spillway configuration used to dewater the sediment pond into the reclaimed channel during the reclamation period.
- 3) The permit states that the sediment will be cleaned out when it reaches 20% of the pond capacity. The applicant needs to demonstrate that 20% of the ponds capacity is less than 60% of the design storage volume as required by UMC 817.46 (h) and commit to the placement of markers showing this volume of sediment in the pond.
- 4) The maps should show the specific type of energy dissipator being used along with the necessary narratives, diagrams and designs showing the adequacy of the energy dissipators. If loose rock riprap is used, then cross-sections of the energy dissipators are needed. If grouted riprap is proposed, a narrative will suffice.
- 5) Comparison of the maps and cross-sections found on Plate 12 with the actual configuration observed in the field suggests that the pond needs the accumulated sediment removed. Because of the large volume difference between the submitted cross-sections and the current pond capacity, the applicant must commit to a clean out that leaves the pond with the approximate original design contours as shown in Plate 12 or submit an 'as built' survey of the ponds current capacity.
- 6) The map needs to be updated showing the second spillway in the pond and any other structures which are not shown on plate 12.

- 7) The maps are not certified by a registered professional engineer as required by UMC 817.46 (r). It is recommended that before the plan is certified that the engineer check the 2 ft of free board shown on Plate 12. Field observations did not show this much free board.

III) Preliminary observations on Sediment Pond E

- 1) See above comment-B1
- 2) See above comment - B2A
- 3) See above comment - B3
- 4) This map is lacking in sufficient detail to evaluate the design.
 - A. There needs to be a horizontal scale for pond volume calculations.
 - B. There needs to be more details on the seepage collars. Seepage collars must increase flow length at least 10% to be effective. The Division is concerned that piping could occur along culvert C15 because of the shallow burial depth of this section of pipe.
- 5) Because Sediment Pond E2 is essentially a stilling basin and will eventually fill with sediment, the Division believes a spillway is needed. A culvert or rock spillway capable of passing the 25yr - 24hr peak discharge will suffice.
- 6) The map should also show the type of proposed energy dissipators along with the necessary narratives, designs, and diagrams showing the adequacy of the energy dissipators. If loose rock riprap is going to be used, then cross-sections of the energy dissipators are needed. If grouted riprap is to be used a narrative will suffice.
- 7) These maps must be certified and stamped by a registered professional engineer.

UMC 817.47 Hydrologic Balance: Discharge Structures - DC

Original DOGM Comment

The operator must include a discussion of discharge structures from the sedimentation ponds. This section cannot be reviewed until the comments made under UMC 817.46 have been addressed.

UMC 817.47 Hydrologic Balance: Discharge Structures

Determination of Adequacy - KRW

This section is not technically adequate.

No energy dissipator is shown for the outlet of the primary spillway on Sediment pond E. There is a simple procedure outlined in Applied Hydrology and Sedimentology for Disturbed Areas (Barfield, Warner, and Haan, 1985) for determining scour hole geometry and the necessary riprap protection for culvert outlets. This protection will also be necessary on the outlet of Sediment Pond C in the reclamation stage when the flow is no longer being directly conveyed to the culvert. The Division requires a narrative, diagrams, and details to evaluate these energy dissipators.

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

Original DOGM Comment

The applicant contends that there are no acid- or toxic- forming materials. However the acid base potential (ABP) of the roof, floor, and midseam was not submitted (ie. appendix IV-F was not submitted). This information must be presented within the MRP. If the analysis finds an ABP of negative five (5) or less (tons CaCO₃/1000 tons material) the applicant shall:

- A) Determine the ABP and SAR of the spoil material contained within the sediment pond; and,
- B) Develop a plan to handle all acid- or toxic- forming materials in compliance with this regulation and UMC 817.103.

Determination of Adequacy

This section is not technically adequate.

Appendix IV-F has not been submitted. Roof and Floor data, submitted with chapter IV, Geology, II Laboratory Analysis indicates that the roof and floor materials are less than or equal to -5 tons $\text{CaCO}_3/1000$ tons material. This determination is based on the percent pyritic sulfur reported for samples 2 and 12. The calculated acid production potential for each is -8.75 and -9.06, respectively. The neutralization potential for each is 2.4 and 3.8, respectively. Therefore the acid-base potential is calculated to be -6.35 and -5.26 for sample 2 and 12. The potential of acidification by this material is explained by Jim Robbins of Camp Dresser and McKee. Specifically "Samples 2 and 12 were found to have low pH values and significant quantities of pyritic sulfur..." and "It is highly likely that variations in the amount, size, and degree of pyrite oxidation can account for most of the variation in chemical composition in these samples."

Sample 7 indicates a sodium adsorption ratio (SAR) of 23. A SAR of 15 or greater is defined as a toxic material. Consequently the roof and floor material are classified as an acid or toxic forming material (ATFM) based on the limited data presented. The applicant is required to adequately reply to parts A and B of the previous comment or provide further data verifying that the roof and floor materials are not an ATFM.

UMC 817.49 Hydrologic Balance: Permanent and Temporary Impoundments - DC

Original DOGM Comment

The operator has not specifically stated whether the sedimentation ponds will be reclaimed. A commitment to reclaim the pond must be made in accordance with UMC 817.46(u) or this regulation must be addressed.

Determination of Adequacy

- (d) See UMC 817.46 of this document.
- (h) See UMC 817.46 of this document.

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

Original DOGM Comment

The operator must submit and summarize all water quality data that has been collected to date. The Division has established guidelines for surface and ground water monitoring since the operator received approval for their water monitoring plan. The

Division will review the data and the summary submitted by the operator and make a determination if the monitoring plan needs to be modified in order to comply with the established guidelines.

Determination of Adequacy - KRW

This section is not technically adequate.

As noted in the Determination of Completeness Document dated 1-17-87 the applicant must summarize and submit all water quality data that has been collected to date. The information available in the present document is insufficient. However, when the data is submitted in compliance with previous section in the current document the criteria of this section should be met.

UMC 817.53 Hydrologic Balance: Transfer of Wells - DC

Original DOGM Comment

This section has not been addressed. The operator must discuss what will happen to the existing water wells after cessation of mining.

Determination of Adequacy

This section has been determined complete.

UMC 817.55 Hydrologic Balance: Discharge of Water into an Underground Mine

Determination of Adequacy - KRW

This section is not technically adequate.

A short narrative describing the amount of water that is discharged into the mines and the treatment of it so that it meets effluent limitations is needed to meet the requirements of this section.

UMC 817.59 Coal Recovery - JRH

Original DOGM Comment

Coal production and coal recovery information provided on page 25 of the mining and reclamation plan does not reflect the production or the recovery of the operations over the past five years nor does it indicate whether or not any changes in the annual or gross production of the operation have been made due to changes in the mining and operation plan. This section must be modified to

indicate such changes and to incorporate additional leases added to the operations plus any additional lease areas which may be proposed to be incorporated into the mining operations over the life of the mine. Specific production information on an annual basis should also be provided for the five year permit term. This section is not considered to be technically adequate.

Determination of Adequacy

This section is not technically adequate.

The Operator indicates that the life of the operation will be theoretically 30-40 years and mentions that there are additional unleased Federal coal areas economically accessible only through Andalex's operation. This information is found on page 4 and pages 24-25 of the MRP. Plates 29-31 indicate the sequence of mining projected through the permit term. This information is considered to be adequate.

The operator should locate and identify those leases adjacent to the permit area which are potential reserves. Additionally, under UMC 817.59, Coal Recovery, the operator shall be required to indicate access to those reserves in the MRP. As part of the mining and reclamation plan, the operator will have to address how they intend on accessing those potential reserves or in the event that those reserves are not mined by the operator, how access will be maintained for future mining of those reserves.

The location of additional coal leases must be included in the permit in order to indicate those potential areas of mining by the operator. Although the operator does not wish to include additional lease modifications to the MRP at this time, those areas must be identified in the MRP as potential areas for coal recovery. Surface and mineral ownership maps should also be revised in order to show the location and extent of those potential future reserves adjacent to the permit area.

UMC 817.71-74 Disposal of Excess Spoil and Underground Development Waste: General Requirements - JRH

Original DOGM Comment

The Operator indicates that there will be no excess spoil and underground development waste brought to the surface or developed on the site. The Division has determined that materials to be cleaned out of sediment ponds on the site contain sufficient coal and coal waste such that this material falls into this category. Materials to be cleaned out of sediment ponds shall be treated in accordance with this section of the regulations and other sections as they apply.

The Operator must determine and locate both temporary and permanent storage locations for the sediment pond waste material. Note that this material may be returned to underground workings only upon approval by MSHA to do so. Temporary storage facilities should be accounted for in the MRP such that the material may be dried out so that saturated or slurry type material is not permanently impounded during disposal. In the event that the operator can demonstrate to the Division that the material is suitable for other uses such as substitute topsoil material of fill material, such other uses may be approved for the disposal of sediment pond waste. The Division will not approve the disposal of the material off-site to a landfill or other facility. This material shall be disposed of within the permit area as required under this section.

Additionally, the Operator may wish to provide at least a temporary storage area for mine spoils and mine development waste in the event that material has to be brought out of the mine under requirements of MSHA regulations pertaining to the limit of coal contained in loose material in the mine. In the event that such materials would be brought to the surface, the operator could commit to include this material as backfill during the reclamation of the operation if the mass balance of the earth work involved in the reclamation would allow.

This information was previously requested by the Division but no response was found in the revised MRP.

Determination of Adequacy

This section is not technically adequate.

This information has yet to be addressed by the operator.

UMC 817.89 Disposal of Non-Coal Wastes - JRH

Original DOGM Comment

The regulation cross reference indicates that this section is not applicable. The Operator shall reference the requirements of this section accordingly.

The Operator must provide specific plans for the temporary and permanent disposal of all non-coal wastes as outlined in this section including, but not limited to, oil and grease, flammable liquids, garbage, abandoned equipment, timber and other combustible materials and other such wastes that are or may be generated on the site.

The Operator must develop specific plans for the treatment and disposal of these materials and must identify any toxic or hazardous waste materials that are generated on the site. Materials to be disposed of off site shall be to a designated sanitary landfill as approved by the State Department of Health. Operations of the disposal site shall be conducted in accordance with all local, State, and Federal requirements.

The Division requires that the Operator commit to the requirements of this section regarding the storage and disposal of solid waste materials under part (c) of this section.

Although some of the above information required is found in a letter from Carbon County in Appendix M, the Operator shall be required to incorporate the information and the requirements into the text of the mining and reclamation plan. This section is not considered to be technically adequate.

The above information was previously requested by the Division but could not be readily located in the MRP. The revised MRP does not have sufficient or technically accurate references to this information if it is found within the text of the MRP.

Determination of Adequacy

This section is not technically adequate.

No revisions to the deficiencies of this section were found in the plan.

UMC 817.95 Air Resources Protection - SCL

Original DOGM Comment

Chapter III p. 40 shows production levels of 1,200,000 tons per year, which would be in violation of the Air Quality Approval Order (AQAO). Andalex must make application for a new AQAO if this tonnage will be mined or update projected mine production.

Determination of Adequacy

This section is not technically adequate.

The MRP projects that the 960,000 tpy permitted by the AQAO will be exceeded by 1990. A modified AQAO will have to be received before the approved tonnage can be exceeded.

UMC 817.99 Slides and Other Damage - JRH

Original DOGM Comment

The commitment to notify the Division in the event of any slides or other damages is not referenced in the plan and could not be found in the plan. The Operator shall provide a commitment in the plan regarding this section and reference it in the regulation cross reference. This section is not considered to be technically adequate.

This information could not be located in the revised MRP.

Determination of Adequacy

This section is not technically adequate.

This information was still not referenced and could not be found in the text.

UMC 817.101 Backfilling and Grading: General Requirements - JRH

Original DOGM Comment

Backfilling and grading requirements of this section are not completely addressed in the mining and reclamation plan. Information referenced could not be found within the plan regarding backfilling and grading requirements other than a slope stability analysis as found in Appendix E. The Operator shall be required to provide to the Division, a mass balance of the materials to be regraded and backfilled during reclamation of the operation and determination of the location and disposition of and excess spoil and mine development waste. Maps and plans submitted should show in detail, the post mining and the post reclamation contours or cross section in order to determine the mass balance for earth work on the site.

This information was previously requested by the Division but was not addressed in the revised MRP. This section is still considered inadequate.

Determination of Adequacy

This section is not technically adequate. No response to the above deficiencies was found in the plan.

No mass balance for earth work was found in the mining and reclamation plan. Reclamation drawings show contour intervals at 50 feet. the information provided in the plan does not clearly indicate the reclaimability of the site with respect to earth work an regrading of the site. The operator shall provide suitable drawings, description and design for backfilling and grading

requirements at the site. Equipment used for such work shall be selected by the operator, quantity and productivity calculations provided, and representative cost for earth work required must be provided in the mining and reclamation plan in order to determine this section technically adequate.

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

Original DOGM Comment

Although the Operator has indicated that there are no acid- or toxic-forming materials there must be a commitment in the mining and reclamation plan indicating that the Operator shall act in accordance with the requirements of this section in the event that such materials are encountered and will submit a plan to the Division for the location and disposal of materials if and when they are encountered.

Determination of Adequacy

This section has not been addressed.

UMC 817.106 Regrading or Stabilizing Rills and Gullies - JSL

Original DOGM Comment

The applicant must commit to fill, regrade, stabilize and reseed all rills and gullies prior to an eroded depth of nine inches.

Determination of Adequacy

This section has not been addressed.

UMC 817.131 Cessation of Operations: Temporary - SCL

Original DOGM Comment

The applicant must commit to the requirements of this section in the application.

Determination of Adequacy

This section is not technically adequate.

The cross reference shows this regulation to be addressed in Section III E (3,4). These sections were not found in the plan.

UMC 817.151 - .156 Roads: Class I - DC/HWS

Original DOGM Comment

The operator has not addressed these regulations. All regulations and subsections of these regulations must be addressed.

The operator has recently upgraded the haul road from a sand gravel base to asphalt. The MRP should reflect this change and address the appropriate requirements of this section.

UMC 817.150-.156 Class I Roads - JRH

UMC 817.160-.166 Class II Roads - JRH

UMC 817.170-.176 Class III Roads - JRH

Original DOGM Comment

It is not clear in the mining and reclamation plan that all of the requirements of this section have been addressed. The Operator shall reorganize and further reference the requirements of these sections to determine these sections technically adequate.

The Operator has indicated that there are no Class II or III roads within the permit area. All access, service and utility roads within the permit area must be classified and the Operator must provide design, construction, maintenance and reclamation plans for each road in accordance with the regulations.

The above clarification and indication of the description of the roads was not found within the revised MRP. This section is still considered to be inadequate.

Determination of Adequacy

This section has yet to be addressed.

UMC 817.180 Other Transportation Facilities - JRH

Original DOGM Comment

More specific information regarding the conveyor structures and other transportation facilities must be provided by the operator. The Operator shall be required to furnish sufficient design, operation and removal plans for the facilities in order to determine this section technically adequate. The Operator must also quantify these facilities in a manner that can be used in determining the reclamation cost estimate for the mine site.

The Operator also has not specifically addressed what measures will be taken in the design and operation of these transportation facilities so as to protect the environment and public safety as outlined under this section. This section is not considered to be technically adequate.

Determination of Adequacy

This section is not technically adequate.

This information was not provided by the operator as requested.

UMC 817.181 Support Facilities and Utility Installations - JRH

Original DOGM Comment

Comments regarding support facilities are similar to those under other transportation facilities. The Operator must account for these facilities in all phases of the mining operation from design through reclamation of the site. Measures to prevent or reduce damage to the environment or to property to the extent as possible using the best technology currently available must be outlined. The Operator shall provide in the mining and reclamation plan a detailed description of such facilities located or proposed on the site and indicate what measures have been taken in order comply with the provisions required in this section.

All utilities and other services passing on or through the mine permit area shall be shown or indicated on the drawings as required and the operator shall provide appropriate information regarding the measures taken to protect these utilities and other facilities. This section of the mining and reclamation plan is not considered to be technically adequate.

Determination of Adequacy

This section is not technically adequate.

This information has yet to be updated and incorporated into the mining and reclamation plan.

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