

ACT 1007/012

File ACT/007/007
7 (cover letter)
both MRP (plans) ^{file}
copies in Appendix B



U. S. Steel Mining Co., Inc.

a Subsidiary of United States Steel Corporation

WESTERN DISTRICT

P.O. BOX AE
PAONIA, COLORADO 81428
303/527-4816

October 8, 1985

RECEIVED

OCT 10 1985

Mr. D. Wayne Hedberg
Permit Supervisor
Division of Oil, Gas & Mining
355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, UT 84180-1203

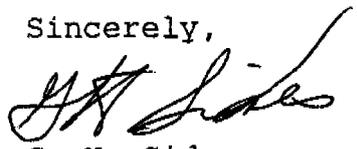
DIVISION OF OIL
GAS & MINING

RE: Abatement Plans
NOV N84-2-13-1

Dear Mr. Hedberg:

Enclosed are ten (10) copies of the Notice of Violation abatement plans as approved by the Division. The plans should be inserted in Appendix B of the MRP.

If you have any questions, please contact V. R. Watts at 303-527-4816.

Sincerely,

G. H. Sides
General Manager

GHS/kb

Enclosures

cc: B. A. Filas
V. R. Watts
L. King
EC File (w/o encl.)

Abatement Plans NOV N84-2-13-1

Basin to Control Slurry Line Discharges

On July 3, 1985, abatement plans were approved by the Division. These are as follows:

1. Drawing E9-3450 which proposes modifications to the existing structure to adequately meet the requirements of 817.46 (e) - (u).
2. Map A9-1449 which shows the hydrologic curve numbers and a proposed permit area extension.
3. Design storm runoff calculation sheets.

The following presents a discussion of 817.46 (e) - (u):

- (e) The structure is designed to the extent possible to prevent short circuiting.
- (f) The structure is designed not to discharge and be full containment of any water discharged to it.
- (g) The structure is designed to contain runoff from a 10 year - 24 hour precipitation event, refer to the attached calculations. A riprapped emergency spillway will remain to protect the integrity of the structure.
- (h) Sediment will be removed as required. Soil loss carried by runoff is not expected to be a significant contributor of sediment.
- (i) The structure will contain a runoff from a 25 year - 24 hour precipitation event, refer to the attached calculations.
- (j) Refer to drawing E9-3450.
- (k) The structure is large enough that if it settles 5 percent no significant impact will result.
- (l) The impoundment height is approximately 15 feet. This results in a minimum crest width of 10 feet. The design crest width is 12 feet, refer to drawing E9-3450.
- (m) Refer to drawing E9-3450.

B-80

AMENDMENT TO
APPROVED Mining & Reclamation Plan
Approved, Division of Oil, Gas & Mining

by DW. Hedberg date 18/OCT/85
reviewed by T. Munson

- (n) The structure will be built on a clear surface with a slope of less than 1:1.
- (o) & (p) The structure will be constructed to comply.
- (q) Does not apply.
- (r) The impoundment has been designed and will be inspected during construction under the supervision of a registered professional engineer.
- (s) The embankment will be seeded to control erosion as specified in the permit.
- (t) The impoundment will be inspected as specified in the permit.
- (u) The primary purpose of this structure is not sedimentation control but process water control.

The proposed modifications will be conducted in an area which was previously disturbed as was noted in the original submittal. Therefore, it will not be necessary to salvage and store topsoil. Spoil from the pond excavation will be stored as shown on map A9-1449.

Subject Storm Runoff into Catch Basin

CALCULATION NOTES

By B.A.F.

Checked _____

Acc't _____

8-27 1984

Sheet No. 1 of 2 Sheets

All drawing and page references in this section refer to either drawings submitted in this section, or drawings and pages included in the Operation and Reclamation Plan - Wellington Coal Cleaning Plant - ACT/007/012.

- * The entire drainage area is located within the Sn soil group (DWG. E9-3339).
- * Due to the proximity to the PCE2 series, the Sn series is assumed to be soil group D (PP. B-18,19).
- * Undisturbed areas have a 15% sage-grass cover. (Cover density is estimated at approx. 60% of actual cover noted in field reconnaissance, August 1984, to account for seasonal changes.) This corresponds to a hydrologic curve number of 84 (P. B-3).
- * Disturbed areas have no appreciable cover, which corresponds to a hydrologic curve number of 89 (P. B-21,22). The Containment area within the basin also has a curve number of 89 because the pond is generally dry.
- * A 10 year-24 hour storm is 1.82 inches. A 25 year-24 hour storm is 2.18 inches (P. B-17).

WELLINGTON COAL CLEANING PLANT
PROPOSED SLURRY DISCHARGE
LOCATION MAP

DRAWN:
W.J.C.

APPROVED:

SCALE: 1" = 200'

A9-1449

RECEIVED

OCT 10 1985

DIVISION OF OIL
GAS & MINING

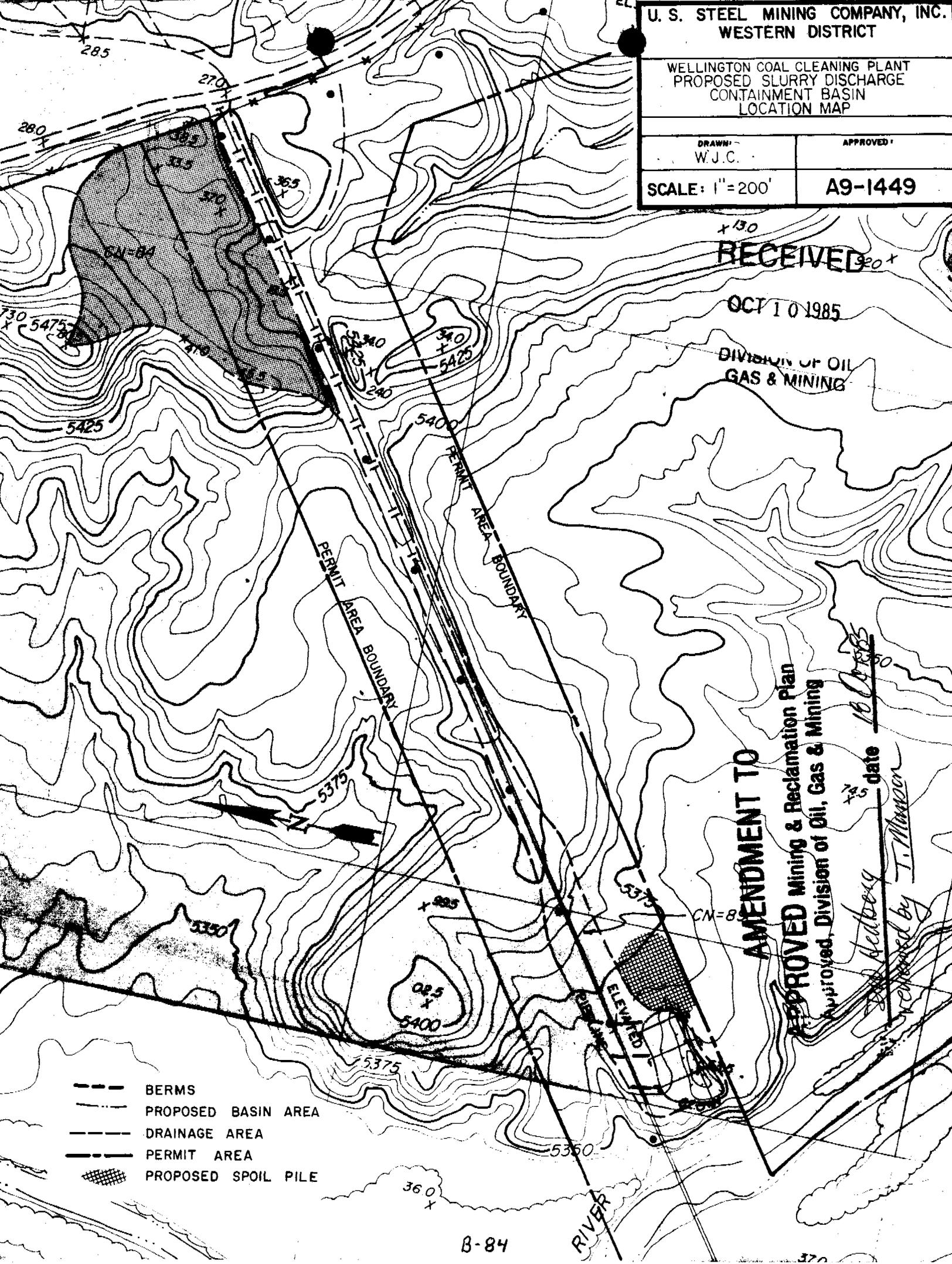
AMENDMENT TO

APPROVED Mining & Reclamation Plan
Approved, Division of Oil, Gas & Mining

date 10/10/85

approved by J. Manion

- BERMS
- - - PROPOSED BASIN AREA
- DRAINAGE AREA
- PERMIT AREA
- ▨ PROPOSED SPOIL PILE



Subject Storm Runoff into Catch Basin

CALCULATION NOTES

By B.A.F.

Checked _____

Acc't _____

8-27 1984

Sheet No. 2 of 2 Sheets

Method referenced on Page B-2 of ORP.

| <u>Acres</u> | <u>Curve No.</u> | <u>Weighted CN</u> |
|--------------|------------------|--------------------|
| 3.10 | 84 | 45.9 |
| <u>2.57</u> | 89 | <u>40.3</u> |
| 5.67 | | 86.2 |

$$CN = 86$$

$$S = 1000^{.86} - 10 = 1.63$$

$$Q_{10-24} = \frac{(1.82 - 0.2(1.63))^2}{1.82 + 0.8(1.63)} = 0.714 \text{ In.}$$

$$\text{Volume} = 0.714 \text{ in } \left(\frac{1 \text{ Ft.}}{12 \text{ In.}} \right) 5.67 \text{ Acres}$$

$$= \underline{\underline{0.34 \text{ Acre-Ft. for 10 Yr. - 24 Hr. Storm}}}$$

$$Q_{25-24} = \frac{(2.18 - 0.2(1.63))^2}{2.18 + 0.8(1.63)} = 0.987 \text{ In.}$$

$$\text{Volume} = 0.987 \text{ In } \left(\frac{1 \text{ Ft.}}{12 \text{ In.}} \right) 5.67 \text{ Acres}$$

$$= \underline{\underline{0.47 \text{ Acre-Ft. for 25 Yr - 24 Hr Storm}}}$$

Both the existing and modified basins are adequate to contain a 25 year-24 hour storm.

TECHNICAL ANALYSIS

U. S. Steel Corporation
Wellington Coal Cleaning Plant
ACT/007/012, Carbon County, Utah

August 22, 1984

Introduction

The United States Steel Corporation's Wellington Coal Cleaning Plant is located on Corporation owned land near Wellington, Utah. The coal cleaning plant receives raw coal from the Somerset Mine in Colorado by rail, processing the raw coal to a reject product and a clean coal product. The clean coal product is shipped by rail to the Corporation's Geneva Steel Works in Orem, Utah. The reject product is placed in designated disposal areas in the vicinity of the plant.

The Wellington Coal Cleaning Plant was completed in 1958 and has been in continuous operation since that date. The cleaning plant is located west of the Price River adjacent to the Denver and Rio Grande Western Railroad. The primary reject disposal area is located east of the Price River and is connected to the cleaning plant by a refuse pipeline and a clear water pipeline. The refuse material is pumped from the cleaning plant to the refuse disposal area. The coarse refuse is placed in the refuse waste pile and the fine, high ash coal flows with the carrying water to the upper refuse pond. The fine material begins to drop out in the upper refuse pond. The partially clarified water passes to the lower refuse pond where the balance of the fine coal drops and clear water passes to the clear water holding pond for return to the coal cleaning plant on the west side of the Price River. The make-up water is pumped from a well. The source of the well water is the Price River. The well water passes from the river through the alluvials to the well which serves as a collection point. The water is pumped from the well to the clear water pond. The coal processing water system is a closed system to conserve and maximize use of the water. Water escapes from the system as water vapor from the heat dryer and through evaporation from the upper refuse, lower refuse and clear water ponds.

The plant receives from 1.5 to 1.8 million tons of raw coal annually and ships 1.2 to 1.5 million tons of clean coal. Some 300,000 tons of refuse is pumped or trucked to the refuse disposal areas.

The projected life of the coal cleaning operation exceeds 30 years.

An Operation and Reclamation Plan (ORP) for the Wellington Coal Cleaning Plant was received by the Division of Oil, Gas and Mining (DOGM) on March 19, 1981. DOGM did an Administrative Completeness Review on December 6, 1982 and an Apparent Completeness Review (ACR) on April 8, 1983. U. S. Steel responded with Technical Revision No. 1 submitted June 13, 1983 and Response to the Apparent Completeness Review (ACR) on July 11, 1983. A Determination of Completeness (DOC) review was sent to the applicant December 2, 1983. The DOC Response was received January 3, 1984. The permit application was declared complete on January 17, 1984. Newspaper advertisement of the application was published in the Price Sun Advocate beginning January 27, 1984.

Existing Environment

The Wellington Coal Cleaning Plant is sited on the Price River floodplain which has been deposited on the Blue Gate Shale member of the Mancos Shale. The major rock units which outcrop in and adjacent to the preparation plant are members of the Mancos Shale formation which is Upper Cretaceous in age--from oldest to youngest. they are as follows: (1) Tununk Shale; (2) Ferron Sandstone; and, (3) the Blue Gate Shale. These rock units strike N15°E and dip 4°W.

The permit area is in the drainage basin of the Price River which is a tributary to the Green River and ultimately the Colorado River. The drainage area for the Price River upstream from the plant is approximately 950 square miles. The plant is situated upon the alluvium deposits of the Price River floodplain. There are no springs or seeps and no perennial streams with the exception of the Price River within the permit area. Ground water resources in the permit area are limited to the water in the flood plain alluvials which range in depth from a few feet to 42 feet. The Blue Gate Shale member of the Mancos Shale formation underlies the alluvials. This low permeability member serves as a confining layer for the alluvial ground water. No water is discharged to the Price River or off-site as the plant operates on a closed water system where water is recycled through a system of ponds for clarification before subsequent reuse by the cleaning plant.

There are three major plant communities affected by the activities of the coal cleaning plant. Plant communities on the rolling hills are predominately *Atriplex-Hilaria* (Shaldscale-Galleta), and to a much lesser extent, *Artemisia-Hilaria* (Black Sagebrush-Galleta). Finally, the major drainage and valley disturbances were once inhabited by *Sarcobatus-Suaeda* (Greasewood-Alkali Seepwood) communities. Moreover, isolated patches of nearly pure stands of Indian ricegrass (*Oryzopsis hymenoides*) and mat saltbrush (*Atriplex corrugata*) can be found throughout the property.

The soils of the Wellington Preparation Plant were derived from colluvial processes related to indigenous soft shale and sandstone combined with alluvial deposition. Alluvial processes are currently significant as evidenced by deposition along oxbow bends of the Price River. A mesic temperature regime in association with an aridic and torric moisture regime when combined with aforementioned alluvial and colluvial processes have overshadowed the biotic factor in yielding aridisols and entisols. Soils are generally fine textured with low permeability and are often highly susceptible to erosion. Low nutrient supplying power and organic matter are significant considerations in reclamation. Failure to stockpile topsoil in predominantly pre-Law disturbances have necessitated the use of topsoil "borrow" areas. Such materials have been shown by chemical analysis to be suitable for reclamation and will be utilized in revegetation test plots to affirm their viability. Revegetation and mulching will mitigate potential erosion losses. Soil amendments will remedy any nutrient deficiencies.

UMC 817.11 Signs and Markers

Existing Environment and Applicant's Proposal

The applicant states that appropriate signs and markers have been placed in the Wellington Coal Cleaning Plant area, as follows (ACR Response, page 8).

Permit identification signs are placed at points of access to the permit area.

Permit area perimeter markers are in place and are maintained to be in good condition.

Buffer zone signs are emplaced 100 feet out from the Price River within the permit area.

Topsoil piles are appropriately identified.

Compliance

Applicant complies with this section.

Stipulations

None.

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

Existing Environment and Applicant's Proposal

U. S. Steel's Wellington Coal Plant is a surface coal preparation plant with no underground mining. There are no underground openings to seal.

There are no boreholes within the permit area and the operator does not have future plans to install any.

There is only one water well in use within the permit boundary; it will be sealed in accordance with the regulatory authority guidelines at the time of reclamation (page 20, UMC 817.53, second paragraph).

Compliance

The well seal will be placed in accordance with State guidelines at the time of reclamation and is in compliance.

Stipulations

None.

UMC 817.22-.25 Topsoil

Existing Environment and Applicant's Proposal

The soil resources are discussed in the Operation and Reclamation Plan (page numbers 783-19 to 783-25), mapped on E9-3339, while data are presented in Appendix I of the DOC Response. The order 3 soil survey performed by the Soil Conservation Service (SCS) has been upgraded via intensive soil sampling.

The soils of the Wellington Preparation Plant were derived from alluvial deposition of sandstone and shale materials, colluvial process, with some alluvial deposition still in occurrence in oxbow bends associated with the Price River. These soils occur at an elevation of between 5,300 and 5,500 feet generally increasing in elevation from broad alluvial flats to colluvial slopes associated with mesas and benches.

Soils of the disturbed area associated with the plant site are the Billings-Bunderson Complex. These soils were formed from alluvial fans and flood plains. Such soils are fine textured and alkaline; salinity concerns and high erosion hazards are associated with these soils. Such soils are nearly impervious to drainage.

The Ravola soils (which occur near the refuse ponds) are derived from alluvium and from shale and sandstone. These soils are considered well drained. Such soils are moderately alkaline and moderately to strongly susceptible to erosion.

Shaley colluvial soils which are found at the base of mesas and benches abut the disturbed area in an incidental manner.

Mixed alluvial soils of moderate salinity occur in the areas where plant drainage accumulates and in the proposed substitute materials location.

UMC 817.22 Topsoil: Removal

Little future removal of topsoil is proposed. What will occur will be attendant to coarse refuse pile and slurry pond expansion (see Map E9-3339). When topsoil and topsoil substitute materials removal is necessary, it will be accomplished by utilizing data provided to the regulatory authority (see Table IIA) to evaluate soils with respect to suitability criteria (Appendix II, DOC Response).

A representative soil removal plan is provided in Appendix II (DOC Response) and will be supplemented by more detailed plans based on series specific information.

Substitute Soils: Identification and Removal

An area has been designated (see Map E9-3339) for the acquisition of substitute materials to remedy the deficit topsoil balance. This area has been sampled and data have been presented (Tables IIC-F, DOC Response) and have been compared to soil suitability criteria (Table IIA, DOC Response). This area is adequate to provide the required volume and soil materials are qualitatively acceptable (and will be improved upon by techniques such as adjusting the boundary of the substitute topsoil area to take advantage of material with lesser clay content and by the addition of organic amendments as described in the January 1984 "Revegetation Test Plot" submission [page 15]).

The operator will remove substitute topsoil from the topsoil borrow area to a depth of 1.5 feet (Page II-5; Rev. 6-26-84). The removal depth has been decreased and aerial extent increased compared to the plans presented in the TA response).

Results from test plots will be further utilized to affirm the viability of substitute materials.

Substitute materials will be removed from borrow areas by piling with dozers and loading with wheel-loaders for transport. Bulldozers and motor graders will then be employed to provide approved soil depths.

Compliance

Data from Table IID (DOC Response) indicate that clay contents are relatively high. The operator's suitability Table IIA rates these soils as poor while DOGM guidelines rate them as unsuitable. The operator proposes mixing soils of high clay content in future disturbances attendant to coarse refuse expansion to reduce clay content to 36 percent (see pages II-4, 5, DOC Response). The operator has discussed means to improve the texture of these materials proposed for borrow in the MX series such as providing mixing to reduce the impact of high clay contents (see page 1-4, DOC Response). The boundaries of the borrow area in the MX Series have been moved to the east to take advantage of soils which have lower clay content. In addition, organic amendments will be incorporated by use of disk harrows into lower redistributed soils derived from the MX Series (Response to Draft TA, Stipulation 817.22-(2)-TLP, and Memo to Coal File dated May 4, 1984). The precise type of organic matter and its rate will be ascertained through test plots.

The data presented to characterize the proposed substitute soil material shows the material to be suitable as substitute soil material. However, the data also appears unrealistically high for soil organic matter and conversely low for soil EC. The operator should adhere to the following stipulation for the purpose of validating the original data set.

The volume of topsoil substitute materials is currently inaccurate. Adherence to stipulation UMC 817.22(2) - TLP will bring this into compliance.

Stipulation 817.22-(1)-TLP

1. The applicant shall justify, provide methods, reflect on the coal fines, etc., as to why OM is high and EC is so low. Samples shall be obtained and rerun since the validity of data presented in the applicants response to the Draft TA is still in question. This shall be accomplished within 90 days of permit approval.

Stipulation 817.22-(2)-TLP

2. Exhibit IIA must be amended within 90 days of permit approval to reflect the revised volume of substitute soil necessary to remedy the soil deficit. This figure is 38,000 cubic yards lower than it should be.

UMC 817.23 Topsoil: Storage

Storage of topsoil will be on stable surfaces isolated from the danger of surface erosion by overland flow. Berms will be placed at the toe of the stockpile to prevent loss of soil to runoff from the stockpile itself. Topsoil stockpiles will be mulched at 2,000 lbs/ac and seeded to afford adequate protection. Mulch will be anchored and/or covered with anchored netting (pages II-3 and 4, DOC Response).

As a point of clarification regarding U. S. Steel's comment in the December 30, 1983 DOC Response under UMC 817.23 (page 12), the reference to 784-13 was to the text of the March 20, 1983 ORP rather than the June 30, 1983 document. In any case, the applicant has adequately addressed these concerns in Appendix II.

Compliance

The topsoil storage plan as detailed by the operator is in compliance.

Stipulations

None.

UMC 817.24 Topsoil: Redistribution

In Appendices I and II of the DOC Response, the operator provides the various replacement depth of coarse refuse (capillary barrier) and topsoil/substitute material redistribution depth for any given area to be reclaimed. Prior to soil redistribution, areas will be graded to final contours (UMC 784.13 in the Operations and Reclamation Plan). All affected areas will be ripped to a two foot depth.

The operator will utilize approximately 5.5 inches of a homogeneous mixture of the upper 2.0 feet of the topsoil borrow area will be utilized to reclaim the topsoil borrow area. (see page I-4 and II-5, 6-26-84 revised TA Response)

Compliance

Compliance will be achieved through operator adherence to the following stipulations.

Stipulations 817.24-(1-2)-TLP

1. Within 90 days of permit approval the applicant must fully describe the mixing procedure including techniques and implements necessary to achieve uniform mixing of materials on a scale this large.

2. Within 90 days of permit approval the methods proposed to be tested to preclude loss of topsoil through voids in the coarse refuse area (page 4, January 1984 "Revegetation Test Plots") should be expanded upon to describe specific test depths of cover necessary to prevent soil loss into voids.

UMC 817.25 Topsoil: Nutrients and Amendments

Prior to topsoil redistribution, the operator will perform random soil sampling (at least one sample per reclaimed acre) to ascertain nutrient needs at the time of reclamation (II-4, DOC Response). Soil tests to be performed are described in 2.3 on page II-1 (DOC Response). As a minimum and for bonding purposes, a basic soil fertilizer application is described in Appendix H of the ORP. The application will be modified as per soil test results and according to guidelines issued by the regulatory authority. Should nutrient deficiencies manifest themselves (plant symptoms), maintenance applications of fertilizer will be provided by the operator (II-4, DOC Response).

Compliance

The applicant complies with the requirements of this section.

Stipulations

None.

UMC 817.41 Hydrologic Balance: General Requirements

Existing Environment and Applicant's Proposal

The applicant has proposed methods in the Permit Application Package by which mining activities will be conducted to minimize changes to the hydrologic balance within and adjacent to the permit area. Those proposals will be presented throughout this section and the following sections (UMC 817.41-.57).

The applicant proposes to control surface runoff from disturbed and undisturbed areas by using a combination of diversions, berms, channels, culverts and sedimentation ponds as discussed under TA Sections UMC 817.43-.46 and 817.49. In all instances, undisturbed area drainage will be separated from disturbed area drainage.

Surface water monitoring plans have been implemented and will continue to operate to detect any impacts from mining operations on the surface water system as discussed under TA Section UMC 817.52.

Impacts to ground water systems have been and will continue to be analyzed through on-going studies. Monitoring and sampling will help the applicant keep impacts to a minimum by detecting changes in water quality or quantity that could result from operations. Plans illustrating the monitoring schedule and showing the quality and quantity of water at sampling sites have been supplied in the mine plan (pp. 783-7 to 783-10 Operating and Reclamation Plan and pp 783-13 to 783-25, ACR Response).

The applicant has suggested plans to ensure that receiving streams will be in compliance with applicable State and Federal water quality regulations as discussed in TA Section UMC 817.46.

The applicant has submitted plans for sedimentation and control ponds depicting their capacity to store the expected sediment and runoff volumes of a 10-year, 24-hour precipitation event plus any volumes of water used in the preparation plant. All calculations and diagrams have been presented showing the architectural stability of the embankments and routing structures.

Riprap sizing calculations have been performed and submitted to the regulatory authorities (Appendix B, ACR Response) for areas where channel velocities are excessive. Plans to protect stream channels utilizing the calculated size riprap will be implemented with construction of the ditch upon reclamation.

The applicant has proposed and implemented preventative measures such as chemical testing of water, soil and rock material and utilizing hydrologic structures and limiting contamination to the hydrologic system from any acid- or toxic-forming materials (Appendix III, DOC Response).

Compliance

The operator has proposed designs utilizing best technology control practices to minimize changes to the prevailing hydrologic balance in both the permit and adjacent areas. The following TA sections (UMC 817.42-.57) describe specific design details for the hydrologic facilities proposed.

The applicant's proposals will meet the general requirements for this section when the stipulations in the following sections are met.

Stipulations

None.

UMC 817.42 Water Quality and Effluent Limitations

Existing Environment and Applicant's Proposal

All surface drainage from the Wellington Preparation Plant will be treated in catchment basins, silt fences or filtered through large areas of undisturbed land characterized by a low slope, many natural depressions and adequate cover of native vegetation (50-60 percent) to minimize discharges off the permit area which would exceed effluent limitations (page 784-25, B-45, Map F9-177, Appendix B). A system of four ponds will treat drainage for 267.5 acres of disturbed area. These ponds serve a dual function as plant water clarification and holding areas during normal operations of the plant. Water in the Wellington area is a valuable resource with only six to eight inches of annual precipitation (NOAA Atlas). Therefore, any water collected in the catchment ponds as the result of rainfall is incorporated into the plant water washdown system via the use of pumps and is utilized in the operation of the plant. Additionally, no discharge is expected to occur from the plant disturbed area for the 25-year, 24-hour event as all ponds are sized for total containment of this event (page 784-25, B-7, B-8 of ACR Response).

The three ponds on the west side of the Price River which control drainage from the disturbed area surrounding the location of the plant facilities have been designed to handle three years of predicted sediment accumulation and total containment of the 25-year, 24-hour precipitation event (calculations in Appendix B, ACR Response).

The applicant has proposed to maintain and leave in place one pond on the east and two ponds on the west side of the Price River following cessation of operations for drainage control during reclamation. These ponds will be removed only after the disturbed area has been restored and the reclamation requirements of UMC 817.111-.117 have been satisfied (page 16, DOC Response). Additionally, a postoperation water monitoring program consisting of sampling at the inlets to the ponds for parameters required by State and Federal effluent limitations at the time of reclamation will be conducted to insure compliance with UMC 817.46(u) before pond removal (page 16, DOC Response).

Drainage from 123.5 acres of disturbed land will be collected and allowed to flow and spread across an area of 314.06 acres which will act as a natural sediment filter. The sediment filter areas have very low slopes (0-1 percent) with many natural depressions that act as sediment traps. Vegetation cover of these areas has been reported to be 50-60 percent. Field reconnaissance conducted by the applicant and the Division of Oil, Gas and Mining for the

past three years has resulted in no observations of significant erosion problems and little to no evidence of historical erosion. No areas of channelized flow across the filter areas have been observed indicating the flow is indeed spreading and largely infiltrating in this area and the filter area is functioning as expected.

The operator indicates that sampling this area for verification of filter function is not feasible as sampling points where flow has collected in large enough volumes for sampling do not exist. Division observation on-site confirms this problem.

Silt fence treatments for two areas have been proposed for drainage treatment. The area surrounding the pumphouse on the east bank of the Price River is approximately one acre in size and has a predicted runoff volume of 0.063 acre-feet for the 10-year, 24-hour precipitation event.

An area of 31 acres near the coal refuse pile on the west side of the permit area will utilize a large ditch and silt fence for drainage treatment. This area has broad, flat topography (0-1/2 percent) and the low slope of the ditch essentially results in that structure functioning as a catchment area. The location of the silt fence is shown on Map F9-177, cross-section K-K'. The volume of the ditch has been calculated to be 1.03 acre-feet (AF) with runoff from the area estimated to be 1.17 AF.

Compliance

The applicant complies with this section.

Stipulations

None.

UMC 817.43 Hydrologic Balance: Diversions and Conveyance of Overland Flow, Shallow Groundwater Flow, and Ephemeral Streams

Existing Environment and Applicant's Proposal

The applicant has provided plans to control overland flow of runoff from disturbed and undisturbed areas within and adjacent to the permit area. A combination of diversions, channels, culverts and energy dissipators will be utilized to separate disturbed area runoff from undisturbed area runoff, control erosion and direct runoff away from coal processing activities. All designs and calculations are presented in Appendix B, ACR Response, July 7, 1983.

During operations three diversions (2 temporary and 1 permanent) are used. The southwest diversion ditch collects and routes approximately 281 acres of undisturbed runoff away from the facilities area to a natural low area where larger storm events cause a pond to form. Sizing calculations for the diversion ditch have been submitted and show that the ditch is sized to accommodate and transfer the 12.5 acre-feet volume of runoff expected during a 10-year, 24-hour precipitation event. The south drainage is not developed as a ditch but is established because the embankment of the railroad tracks diverts the runoff along the base of the embankment toward the Price River. Runoff from both disturbed and undisturbed areas is transported along this diversion. A silt fence is located in the ditch below the small disturbed area near the cleaning plant which filters out any sediments. As mentioned under TA Section UMC 817.42, the small disturbed area is approximately 13 acres and slopes zero to 1/2 degrees. The disturbed area that drains into the diversion consists of approximately 1 square mile, however, the configuration of the drainage is capable of handling the expected runoff from a 10-year, 24-hour precipitation event.

The drainage ditch is not subject to significant water velocities which would wash out the silt fence. Like the surrounding area, the ditch has only a slight grade which results in a maximum velocity of 2.8 feet per second (during the 10-year, 24-hour precipitation event). It should be noted that approximately one half of the total storm runoff (assuming all the runoff reached the drainage ditch) can be contained in the ditch from section K-K' upstream while maintaining 0.3 feet of freeboard. The Geofab silt fence has a capacity to pass some 470 gallons per square foot of fence. Specifications for this silt fence are included on page B-27 (Appendix B, ACR response).

These diversions will be reclaimed after operations cease at the plant site (page 784-14, ORP).

A permanent diversion presently exists in the northeast portion of the permit area which diverts water passing from fields (reaches 1 & 2 map A9-1429 Technical Revision No. 1) north of the refuse ponds into the Price River. The diversion is sized to pass the peak flow generated during a 100-year, 24-hour (53 cubic feet per second) precipitation event. Calculations and plans have been submitted by the applicant to illustrate the reliability of the diversion. This diversion will be left upon cessation of operations (page 784-41, ACR Response). The operator has placed rip rap along various lengths of the diversion and used grout to stabilize the finer sized rip rap material. As outlined in U. S. Steels response to NOV#84-2-12-1, the operator will leave the grouted rip rap intact during and after reclamation. The operator has shown that channel velocities generated during a 100-year, 24-hour precipitation event are below 5 feet per second and are essentially non erosive whether the channel is rip rapped or not.

Plans have been submitted for another permanent diversion along the east side of the refuse ponds. The diversion ditch will be constructed prior to reclamation of the ponds. This ditch will discharge into the Clear Water Ponds during reclamation. The impoundment will not have to be altered. When revegetation is successful the Clear Water Pond will be reclaimed and the diversion ditch extended to discharge into the Price River.

Calculations and plans have been submitted to ensure that the ditch will adequately contain and control the peak runoff of a 100-year, 24-hour precipitation event (Appendix B, ACR Response).

Undisturbed runoff drains from 310 acres in the northwest end of the permit area and passes through culverts which cross under the railroad tracks and then out onto a vegetated filter which is graded to preclude runoff. All culverts other than those crossing under Denver and Rio Grand Western tracks have sizing calculations provided by the applicant to show their carrying capacity and capabilities of providing transport for a 10-year, 24-hour precipitation event. All culverts underlying the Denver and Rio Grand Western tracks are under control of that company and cannot be controlled by the applicant. The culverts under D&RGW's track are of such size to pass the 10-year, 24-hour precipitation event. The applicant has stated that as of 1958 there has been no breaching of any culverts. All culverts except D&RGW's (Map E9-3342) will be reclaimed along with the railroad tracks. The long term plans for D&RGW's railroad tracks are unknown (page 784-14, ORP).

The applicant has provided a freeboard of at least 0.3 feet for all diversions. Velocities of overland flow and within channels are very low (2.6 fps) due to the almost flat topography of the area, hence there is almost no erosion.

Compliance

The applicant has submitted appropriate plans to control overland flow, to protect facilities and property and prevent erosion. The submitted plans are accompanied by designs which fulfill the criteria established in the regulations.

In reviewing U. S. Steels proposal to leave the grouted rip rap intact in the permanent diversion on the north east side of the refuse ponds the Division finds that there should be no adverse impacts from these measures and approves these procedures in accordance with UMC 817.43(b). Emplacement of the grouted rip rap will undoubtedly provide stability and protection to the ditch banks. Deterioration of the grouted rip-rap will gradually occur, but this should not have adverse effects either to the diversion channel or waters down stream, since velocities are low and non-erosive.

Stipulations

None

UMC 817.44 Stream Channel Diversions

Existing Environment and Applicant's Proposal

As previously mentioned under TA Section UMC 817.43, the applicant plans to reclaim the temporary diversions intercepting the ephemeral stream flow along the west and southwest sides of the operations area. Two permanent diversions will remain on the east side of the property to divert runoff from irrigated lands and ephemeral stream channels away from the reclaimed refuse ponds (page 784-10, ORP).

A stream channel diversion (Milner Diversion Dam on Map F9-177, 1 of 2, December 28, 1983) exists in the Price River which diverts streamflow into a ditch that temporarily crosses the permit area prior to crossing under D&RGW's railroad tracks and flowing into fields that used to be farmed and are now used for grazing. This diversion is not associated with the proposed operation other than crossing the property and the operator claims no control over the structure.

A temporary stream diversion (see Map E9-3430) exists at the southern end of the property which diverts water from the Price River into a sluiceway which then directs it to the pumphouse where it is pumped to the clear water pond. The applicant proposes to dismantle the diversion and accompanying structures upon cessation of operations and restore the stream channel to its natural shape.

Compliance

The applicant complies with all parts of this section.

Stipulation

None.

UMC 817.45 Hydrologic Balance: Sediment Control Measures

Existing Environment and Applicant's Proposal

The disturbed area drainage will be controlled and treated at the Wellington site using a system of diversions, berms, sediment ponds (which also serve a dual function as the plant operation water clarification system), native vegetation filters and silt fences (Appendix B, ACR Response; page 6, 14, 15, 16 and 17, DOC

Response). No untreated discharges will occur off the permit area as a result of the 25-year, 24-hour event. Undisturbed drainage to the west and north of the permit area is prevented from mixing with disturbed drainage by diversion ditches constructed along the coal refuse/west boundary and the north diversion dike, respectively (Map F9-177, Volume 2). No underground activities occur at the site and as such, no mine or underground discharges will occur at the site.

Sediment production at earth embankments, road cuts and earth or soil covered impoundments will be minimized by implementing contemporaneous reclamation treatments. The areas will be broadcast seeded and a straw mulch applied and anchored (page I-6, DOC Response). Weekly inspections at the sites will be conducted to note and correct any evidence of erosion rills or gullies (page 18, DOC Response). To date, the operator reports that no evidence of erosion gullies have been observed.

Compliance

The applicant complies with this section.

Stipulations

None.

UMC 817.46 Hydrologic Balance: Sedimentation Ponds

Existing Environment and Applicant's Proposal

Sediment catchment basins at the Wellington Site serve a dual function as holding basins for the plant water clarification system. Three basins treat runoff from disturbed lands on the west side of the Price River and the large volume Refuse and the Clear Water ponds serve that function on the east side of the river. The Auxillary Pond and the Road Pond are connected via a culvert and treat drainage for the 6.37 acres of disturbed land surrounding the plant and office facilities (see figures C9-1285 and E9-3427). The Heat Dryer Pond treats drainage from a small area (approximately 1 acre) near the plant dryer. (See Map E9-177 for delineated acres contributing to ponds). The reader is referred to appendix B, of the Response to ACR document for supporting calculations for these ponds.

Using the SCS curve number methodology the estimated 10-year, 24-hour runoff volume from the 6.37 acre drainage to the Road and Auxillary ponds were calculated to be 0.53 acre-feet. The volume estimated for the 25-year, 24-hour event was 0.7 acre-feet (page B-7, Response to ACR). The estimated 10-year, 24-hour events for the heat dryer pond are 0.09 and 0.11 acre-feet, respectively. The operator has shown the capacities of the road/auxillary pond

system to be sufficient to hold runoff for the 25-year, 24-hour event, the plant discharge in the event of a plant failure and the operating volume of water in the pond (page 6 of the DOC response summarizes the capacities). The heat dryer pond has a capacity of 63,000 gallons which is 13,000 gals in excess of the volume required for runoff and sump overflow volume. Pumps operating at the Auxillary and Heat Dryer ponds will maintain water levels in the ponds below the maximum calculated levels during plant operation, and in the event of plant shut down and complete washdown the ponds are shown to be adequate for both dump operating and runoff (25-year, 24-hour) volumes (page 6, DOC Response; Appendix B, Response to ACR). A stage-volume curve for the Road pond is included in the appendix to the TA for reader clarification.

The sediment production for the disturbed areas was estimated using the Universal Soil Loss Equation (USLE). Due to the very low slope at the site (0-1%) the predicted sediment yields are typically low (less than 200 ft³) (pages B-7, B-8, Response to ACR).

Pumps at the ponds will serve as dewatering structures to maintain volume in the ponds for the runoff event. The applicant has been conservative in the estimation of storage volume for the ponds as an additional volume of dead storage exists in each pond. The Heat Dryer, Road and Auxillary Ponds are all incised and no embankments will be constructed.

Disturbed land drainage on the east side of the Price River is directed towards the Refuse and Clear Water ponds which also serve as the plant water clarification system. The ponds are large in area in relation to the disturbed lands and as such the estimated runoff from these areas is of minimal concern in the design of the ponds. The operator has shown the ponds to be adequate for the clarification functions and runoff control and treatment (Technical Revision #1). Field observations and photographs submitted by the applicant (page 784-14, ACR response) have shown the clear water embankment to be vegetated and stable. MSHA approval for all three ponds has been obtained by the applicant. Discharge structures for the Refuse ponds have been designed for the 100-year, 24-hour peak flow event, which is conservatively oversized for the requirements of UMC 817.46(i), (25-year, 24-hour event). The reader is referred to the Technical Revision #1 document for specific design details for the outflow structures.

Compliance

The applicant's proposal is sufficient to comply with the requirement of this section.

Stipulation

None.

UMC 817.47 Hydrologic Balance: Discharge Structures

Existing Environment and Applicant's Proposal

Diversions and erosion protection at the plant site are discussed under Section UMC 817.43 of this document. Discharge structures for the sedimentation ponds are proposed (see discussion TA Section UMC 817.56) to be installed at the time of reclamation (page B-46, Response to ACR). The overflow structure (12-inch PVC pipe) for the Road pond has been designed to pass a predicted peak flow of 6.9 cfs. Using the University of Kentucky's Sedimot II computer model, the regulatory authority calculated this peak (25-year, 24-hour) to be 3.96 cfs. The discharge structure is therefore over designed to pass the required peak event. The velocity at the outlet of this structure has been calculated to be nine fps. This high exit velocity will be controlled by discharging this pipe to the 48-inch corrugated pipe which flows beneath the existing railroad (to remain in place during reclamation) (page B-49, Response to ACR).

The peak flow for the heat dryer area has been calculated to be less than 1.0 cfs and the proposed 12 inch discharge structure will adequately pass this flow with no headwater depth. The calculated exit velocity of 6.73 fps will discharge into a 48-inch corrugated metal pipe which will dissipate the energy and reduce the flow velocity to less than five fps (page B-49, Response to ACR).

Compliance

The applicant's proposal complies with this section.

Stipulations

None.

UMC 817.48 Acid- and Toxic-Forming Materials

Existing Environment and Applicant's Proposal

The applicant has submitted chemical analyses of the slurry ponds and coal refuse pile (Appendix E, ACR Response) to illustrate the nihility of acid-forming and toxic materials for these areas.

No other acid or toxic materials are known to exist on site.

Compliance

The applicant has identified the areas of potential acid-forming and toxic-forming materials. They are the upper and lower refuse ponds and the coarse refuse pile.

Representative chemical analyses of these areas have been submitted by the operator (Appendix E, ACR Response). The analyses show no acidic levels or toxic constituents in sufficient quantity to cause degradation to revegetation or animal life.

The pH for the above locations ranges between 7.6 to 8.4, a common range, when waters in contact with the Mancos Shale members are buffered by the bicarbonate/carbonate cations released in aquatic situations.

Although there appears to be some high concentrations of some constituents, those constituents do not pose adverse contamination problems. All potentially toxic constituents are present in very low concentrations to the extent that no adverse or toxic effects will be realized.

U. S. Steel has supplied the required information to classify the acid- and toxic-forming materials presently existing at the site. Well and stream monitoring (the Price River) will also be conducted to detect any changes in ground water and surface water quality.

Stipulation 817.48-(1)-DD

1. The applicant will be required to submit to the regulatory authority a chemical analysis of each individual coal seam that will be processed at the plant. The analysis(es) shall depict all acid- or toxic-forming constituents and be submitted on an annual basis, or at any other time required by the regulatory authority, if there is reason to believe that the quality of coal has degraded sufficiently to cause acidic or toxic effect.

Run of the mine coal from newly mined seams (also new coal mines) shall be sampled and the analyses submitted to the regulatory authority within 30 days of processing of the coal so that any acidic or toxic constituents can be identified.

UMC 817.49 Hydrologic Balance: Permanent and Temporary Impoundments

Existing Environment and Applicant's Proposal

Three temporary impoundments in addition to those discussed under TA Section UMC 817.46 exist at the plant site for use as a plant water clarification system. These are the Upper Refuse, the Lower refuse, and Clear Water ponds depicted on map F9-177. The Upper and Lower Refuse ponds will be removed upon reclamation and

the Clear Water pond will be left in place as a sediment treatment pond until reclamation is complete. At that time that pond will be removed and the area reclaimed.

Geotechnical stability analyses have been performed for these impoundments and they have been shown to be stable with safety factors ranging from 1.2 to 2.2 (Appendix C, ORP). The side slopes of all embankments are 2v:1h (Fig 12-14, Rollins, Gunnel, Brown report, ORP).

The embankments have been certified by Rollins, Gunnel and Brown (Appendix C, ORP) and the applicant has committed to annual certification inspections for each embankment. A sample form for this certification is included in the ORP (page 18, DOC response). The impoundments will be inspected weekly for hazardous conditions, water levels, erosion, seepage slumps, cracks, function of spillways, and current freeboard (P. 18A, DOC response). The embankments meet or exceed the criteria of 30 CFR 77.216(a) and are approved and regulated by MSHA. Plans for enlarging the structures have been submitted to the regulatory authority for approval in a timely manner by the applicant. This modification (see Technical Revision #1) has been approved by the regulatory authority and will be implemented at the site when economic and plant capacity needs so require.

Compliance

The applicant complies with this section.

Stipulations

None

UMC 817.50 Underground Mine Entry and Access Discharges

This section is not applicable since there will be no underground entries.

UMC 817.52 Surface Water and Groundwater Monitoring

Existing Environment and Applicant's Proposal

The applicant has submitted surface water monitoring data to establish the baseline characteristics of the area. Information describing the groundwater aquifers and the predicted effects the operation could have on the aquifers and surrounding area has been supplied. In evaluating this information the Division estimated potential groundwater and surface water impacts occurring from seepage of leached refuse into underlying aquifers and the nearby

Price River and proposed a more intense study to evaluate total effects. In response to the concerns the applicant drafted and is now instituting a new monitoring plan to evaluate the extent and total effects at the plant and to ensure through the collection of ground water samples and analysis of the samples for potential contaminants that the impacts on the surrounding aquifer will not be excessive.

The Auxillary pond, Road ponds and new Dryer ponds which receive and provide support water to the plant and receive surface runoff that originates on the plant site (disturbed area) are designed for total containment of the 10-year, 24-hour precipitation event as well as all plant discharges. Hence no discharge of surface water is anticipated from the plant site and no NPDES permits are needed for these ponds (Appendix B, ACR Response).

The Upper Refuse pond, Lower Refuse pond and the Clear Water pond have also been oversized to contain the runoff and sediment load greater than a 10-year, 24-hour event (See TA Sections UMC 817.42 and 817.46) so that no NPDES permits are needed for these ponds.

No treated or disturbed surface flow will leave the property. Three sources could potentially contribute contaminants to the shallow aquifers and possibly to the Price River. These areas include the coarse refuse pile, the road and auxilliary ponds, and the refuse ponds. Precipitation percolates down through these structures eventually reaching the shallow alluvial groundwater system. Using the average annual rainfall (9.68 inches) for the Price area, the maximum proposed extent of the pile (22 acres) and assuming the total amount of precipitation percolates through the pile, an annual volume of 17.5 acre feet of leachate could be contributed.

In assessing the effect from water seeping from the ponds on the property the applicant established a water budget for the 1981 year. The budget could not account for 447.3 acre-feet of water which is assumed to be entering the shallow groundwater aquifer from the ponds where the water would dissipate in an unknown distance down gradient where it would eventually come in contact with the Price River.

In comparing conservative figures for estimating the expected water quality reaching the river to the water quality of the Price River itself an expected increase in dissolved solids of about 10 milligrams per liter is shown, a negligible effect.

As stated under TA Section UMC 817.48, chemical analyses of the refuse sites presently shows no toxic constituents present in substantial quantities to cause contamination to surface or ground waters.

The proposed monitoring plan will incorporate new surface sites and shallow groundwater sites at strategic locations to detect the water quality of the shallow groundwater aquifer and the Price River and to ensure that excessive contamination does not occur. The new proposed monitoring sites can be seen on Map 1 of the DOC Response.

Compliance

The information the applicant submitted along with the schedule for future monitoring is sufficient to determine this section complete.

Stipulations UMC 817.52-(1)-DD

1. The applicant will be required to begin initiation of the proposed monitoring plan immediately upon approval of the mine plan, and have the plan fully implemented within 120 days of permit approval.

UMC 817.53 Transfer of Wells

Existing Environment and Applicant's Proposal

Other than the shallow groundwater wells that will be used to monitor water quality, the only well on the property is located near the pump house which is used to reduce the water level in the alluvium adjacent to the pumphouse so that it does not flood. The applicant does not plan to transfer any of these wells, but does plan to reclaim them according to specifications established by the regulatory authorities (under UMC 784.13, page 7, DOC Response and page 784.23, ACR Response).

Compliance

The applicant complies with this section.

Stipulations

None.

UMC 817.54 Water Rights

Existing Environment and Applicant's Proposal

The applicant owns 10.08 cubic feet per second of water diversion rights in the Price River and leases 10 cubic feet per second from the sewer plant outfall. The make-up water required for plant operation is approximately four cubic feet per second. The balance of the water rights are available in the event the operators actions result in elimination or interruption of water rights of legitimate water users.

The applicant has submitted a statement committing to replacing all water rights disrupted.

Compliance

The applicant complies with this section.

Stipulation

None

UMC 817.55 Discharge of Water into an Underground Mine

This section is not applicable since no mining will take place on-site.

UMC 817.56 Hydrologic Balance: Postmining Rehabilitation of Sediment Ponds, Diversions, Impoundments, and Treatment facilities

Existing Environment and Applicant's Proposal

Upon cessation of operations at the plant site the refuse impoundments will be reclaimed with the exception of the Clear Water pond which will be left in place to serve as a sedimentation pond for sediment control during reclamation (page 784-281, page B-45, B-46, Response to ACR). The Auxillary pond will be reclaimed and regraded with the reclamation of the plant facilities area. The Heat Dryer pond and the Road pond will be left at the site to serve as sediment control for that area. The diversion ditch along the west side of the permit area will remain to preclude undisturbed drainage from coursing across the regraded area therefore reducing sediment production from the disturbed area. A permanent diversion designed for the 100-year, 24-hour precipitation event will be installed at the east boundary of the reclaimed refuse ponds area to divert undisturbed drainage from these newly graded and seeded areas (page B-46, Response to ACR). This diversion will discharge into the Clear Water pond during the reclamation period to reduce contributions of sediment during diversion construction and riprap stabilization. When the clear water pond is removed the diversion will be constructed to extend to discharge into the Price River. The Clear Water pond has a capacity of three times the predicted runoff and sediment shown for the 100-year, 24-hour event from the reclaimed area and the discharge from the permanent diversion described above (page B-58, Response to ACR).

Discharge structures adequate to pass the 25-year, 24-hour event will be installed at the Heat Dryer and Road pond due to the removal of the pumps (at reclamation) that act as dewatering devices during the operational phases of the plant (page B-46, Response to ACR). A

discharge/decanting structure will be installed at the Clear Water pond to act as a dewatering device for impounded waters after a minimum of 24 hours detention time.

The applicant has submitted a postoperation water monitoring plan to insure the criteria of UMC 817.46(a) are met before pond removal. Quarterly samples will be taken of the drainage entering all ponds (page 16, DOC Response). The ponds and west diversion will be removed and reclaimed when water quality limitations have been met and the disturbed area is adequately revegetated to the performance standards of UMC 817.111.117 (page 16, DOC Response). Silt fences will be properly installed to control sediment during reclamation of the Clear Water pond and embankment area (page 784-28i, Response to ACR).

Compliance

The applicant adequately complies with this section.

Stipulation

None

UMC 817.57 Stream Buffer Zone

Existing Environment and Applicant's Proposal

The applicant has installed structures within 100 feet of the stream channel. As can be seen in diagrams on Map E9-3430 two suspension bridges carrying pipelines, a diversion dam and sluiceway to divert water to the pumphouse and a bridge for an access road have been constructed prior to enactment of the Surface Mining Control and Reclamation Act.

The applicant has placed Stream Buffer Zone signs 100 feet out from the Price River. Upon cessation of the operation all structures except the bridge to the access road will be disassembled and the disturbed land graded and revegetated according to the time table presented in the PAP (pages 784.19 to 784.23, ACR Response). A silt fence or equal sediment control will be used until vegetation is established.

Compliance

The applicant is in compliance with this section.

Stipulations

None.

UMC 817.61-.68 Use of Explosives

There is no use of explosives at a coal cleaning plant nor any anticipated use of any.

UMC 817.71-.74 Disposal of Underground Development Waste and Excess Spoil and Nonacid and Nontoxic-forming Coal Processing: General Requirements

Existing Environment and Applicant's Proposal

Analysis of the slurry pond coarse and fine refuse (page E-3, Refuse Sample Analysis) shows no presently existing toxic or potentially toxic conditions. All refuse ponds have been analyzed and certified by registered professional engineers (see Technical Revision #1) and also reviewed and approved by the State Engineer and MSHA (page 782-14, ACR Response). The slurry ponds will be covered with a nontoxic layer up to 12 inches deep to prevent upward migration of salts from the coal refuse and covered with six inches of topsoil and seeded upon reclamation (page 784-20, 21, 22, 23 of U. S. Steel's ACR Response).

Compliance

The applicant will be required to meet the stipulation under UMC 817.48 to provide future protection against acid and toxic material contamination. Any contamination will also be indicated in the surface and ground water monitoring program. Detection of contamination from any refuse sources will result in the operator drafting new design plans for conducting contamination control and reclamation procedures.

Stipulation 817.71-.74-(1)-DD

1. The applicant shall commit to submitting new designs for regulatory authority review and approval to satisfy regulations under UMC 817.71-.74 in the event toxic or acidic contamination occurs during future operations. These designs must be submitted within 90 days of discovery of contamination.

UMC 817.81 Coal Processing Waste Banks: General Requirements

Existing Environment and Applicant's Proposal

Coarse refuse has been placed in an area southwest of the plant (Map E9-3342) since the Wellington Plant went into production. The refuse pile has since been inspected by the State regulatory authority and has remained stable since its beginning in the late

1950's. The topography is flat with no water carrying structures underneath. The refuse pile has been analyzed (page E-3, DOC Response) and determined to be nontoxic. The refuse pile will be reclaimed and regraded to conform to State slope guidelines for stability and erosion control, covered with six inches of topsoil, reseeded and revegetated with an approved seed mix (reference pages 784.23, 24 of the DOC Response).

Compliance

Applicant is in compliance with the section.

Stipulations

None.

UMC 817.86-.88 Coal Processing Waste Banks

Not applicable.

UMC 817.89 Disposal of Noncoal Wastes

Existing Environment and Applicant's Proposal

Noncoal waste is accumulated in the designated area shown as EE on Map E9-3341 and disposed of in the Carbon County Landfill.

Used oil and oil drums are stored separately in area FF on Map E9-3341. Surface runoff from this site is minimal and an oil spill safety berm surrounds this storage facility. Empty drums are eventually shipped off-site for scrap metal or reused for operations.

Excess wood is stored in area DD (Map 3341). A permit to burn 3,000 cubic yards of this wood was received from the State Department of Health, Air Quality Bureau on March 19, 1984. In the future, accumulated wood will be taken to a landfill for disposal.

Compliance

The applicant is in compliance with this section.

Stipulation

None.

UMC 817.91 Coal Processing Waste: Dams and Embankments

Existing Environment and Applicant's Proposal

The upper refuse dike, lower refuse dike and clear water dike were constructed of coarse coal refuse prior to SMCRA.

A stability analysis was conducted on all three dikes in March 1978 by the professional engineering firm of Rollins, Brown & Gunnel of Provo, Utah (ACR Response). The dams were certified to be within State guidelines for factors of safety.

In March 1983, another stability analysis was conducted by Rollins, Brown & Gunnel to verify stability of the upper, lower and clearwater dikes in order to raise the height of these dikes (Technical Revision #1). The raising of the dikes was approved by Rollins, Brown & Gunnel and the State Engineer's Office.

The coarse refuse has been analyzed (page E-3) and shown to be nontoxic.

Compliance

The refuse dikes are in technical compliance with the 800 regulations.

Stipulation

None.

UMC 817.92-.93 Coal Processing Waste

Not applicable.

UMC 817.95 Air Resources Protection

Existing Environment and Applicant's Proposal

The Wellington Coal Cleaning Plant is not located in a non-attainment area. Therefore, the applicant has not installed an air monitoring program at the plant.

Fugitive dust emissions are reduced at the cleaning plant by the following measures:

1. The road from the main gate to the plant parking lot and the parking lot is a blacktopped road.
2. The speed of vehicles in the plant area is restricted.

3. The travel of unauthorized vehicles on other than established roads is restricted.
4. The plant receives coal in railroad cars and ships in railroad cars. The operator does not ground store raw or clean coal at the coal cleaning plant.
5. The clean coal loading chute is telescoping to reduce the fall distance when loading into the railroad cars.
6. The applicant pumps the major portion of the plant refuse to the disposal area using water as a transport medium.

If it should become necessary to control fugitive dust as a result of cleaning plant operations, the applicant has committed to sprinkle or chemically stabilize source areas, or otherwise control fugitive dust through the best available control technology (Operation and Reclamation Plan, page 784-35).

Since the plant has been in operation since 1958, no Air Quality approval order for the facilities is necessary. However, an Approval Order was received for a 1981 modification to remove coal fines from settling ponds (letter attached to TA). The applicant applied to the Utah Air Quality Bureau on December 23, 1983 for an "Open Burning Permit" to burn 3,000 cubic yards of wood material accumulated at the plant site. Approval was granted March 19, 1984 for a one-time burn during a favorable clearing index of 500 or more.

Compliance

The applicant is in compliance with this section.

Stipulations

None.

UMC 817.97 Protection of Fish, Wildlife and Related Environmental Values

Existing Environment and Applicant's Proposal

The permit area of the Wellington Preparation Plant is dominated by the shadscale and greasewood communities of the Upper Sonoran Life Zone (See Appendix H for a quantitative description of these communities). This life zone may provide potential habitat for about 246 vertebrate species of wildlife, including five fish species, six amphibian species, 15 reptile species, 176 bird species and 44 mammal species. However, wildlife populations are generally considered low on the permit area. The operator has consulted the

Utah Division of Wildlife Resources (DWR) regarding low-level wildlife studies within and adjacent to the permit area. The results of this consultation are found in the ACR Response, Appendix F.

The Price River, which bisects the permit area, is ranked by DWR as "limited value" to Utah's Fishery Management program, supporting only one "high interest" specie of fish, namely the channel catfish (Appendix F, pages 4 and 5). The riparian zone associated with the Price River (ca 39 acres within the permit area) is ranked as "critical value" to local wildlife populations.

Surveys for Threatened or Endangered Plant or animal species were conducted during the summer of 1983 with no Threatened or Endangered species being observed. Although the permit area is within the range of several raptor species such as the Bald and Golden Eagles, suitable habitat generally is non-existent within the permit area (Appendix H, page 11 and Appendix F).

The area affected by the Preparation Plant includes approximately 392 acres, most of which were disturbed during the late 1950's. The only future disturbance planned at this time is to increase the coarse refuse pile by about 8 acres and a topsoil borrow area (for final reclamation) of about 69 acres (PAP, Map E9-3339).

The tailings ponds were located in an ephemeral drainage which has been permanently diverted. Thus any riparian habitat which may have existed (pre 1958) is permanently lost. Reclamation plans, however, will establish a higher quality forage and cover for wildlife than the pre-existing greasewood community provided (see Reclamation Plan, DOC Response, Appendix I). Also, these ponds are currently providing nesting sites and habitat for local waterfowl populations.

The operator's wildlife protection and mitigation plans are discussed on pages 22 and 23 of the Determination of Completeness response (January 3, 1984). This plan includes provisions for an employee education plan, conducting operations in a way which minimizes future impacts to wildlife, reclamation with species that will provide quality forage and cover to wildlife and reporting to the regulatory agency, the presence or observance of any Threatened or Endangered plant or animal specie.

Compliance

Although not constructed as per current raptor protection technology per SE, existing power transmission lines were surveyed on March 24, 1982 by the U. S. Fish and Wildlife Service. Results of this survey (attached to the TA) indicated that existing poles

were not posing a hazard (no use) to raptors due, in part, to the close proximity to the preparation plant and the poor habitat conditions near the site.

Future disturbances will be conducted to minimize the impact to wildlife habitat (DOC, page 23).

Employees will be instructed in ways to minimize impacts to wildlife during daily operations. The revegetation plan is designed to, and will enhance the disturbed areas for wildlife habitat by providing a better quality forage (see Reclamation Plan, DOC Appendix I and DOC page 22).

Persistent pesticides will not be used within the permit area (DOC, page 23).

The DWR has recommended that the company retain the clearwater pond for a warm water fishery, thus serving as mitigation for riparian areas lost due to the slurry ponds and as an enhancement feature in the post-mining land-use (see letter dated January 24, 1984 in Appendix A). This action is not considered as part of this analysis, however the company is currently investigating this proposal. Should U. S. Steel accept DWR's proposal, the permit would need to be modified at that time.

In summary, the operator's plan will comply with the requirements of this regulation.

Stipulations

None.

UMC 817.99 Slides and Other Damage

Existing Environment and Applicant's Proposal

The applicant has not addressed the requirements of this regulation in the PAP.

Compliance

The applicant does not comply with this section because he has not committed to notify the Division promptly of any slide which has a potential adverse effect on public property, health, safety or the environment.

Stipulation 817.99-(1)-SL

1. Within 30 days of receipt of Final Permit Approval from DOGM, the applicant must commit to notifying DOGM within 10 days of the occurrence of a slide which has potential for adverse effect on public property, health, safety or the

environment. The applicant must also commit to comply with remedial measures required by the regulatory authority to reduce or eliminate the potential adverse effect of such a slide.

UMC 817.100 Contemporaneous Reclamation

Existing Environment and Applicant's Proposal

Currently, about 392 acres have been disturbed by the preparation plant operations. All areas of disturbance are required to support the plant operation. Outslopes on earth embankments, road cuts, earth or soil covered impoundments and other similar areas which cannot be permanently reclaimed at this time will be seeded with those species and rates as indicated on Table 16. However, on areas where shrubs are not desirable (i.e., impoundments) only the grasses and forbs will be used. All areas seeded will be mulched with 2,000 pounds of straw per acre (DOC Response, Appendix I).

Compliance

When the operator determines that an area is no longer needed for operations, it will be reclaimed as per the final reclamation and revegetation plans. Earthen covered structures as indicated above will be revegetated using the grasses, forbs, and where appropriate, shrubs on Table 16 at the indicated rate of application (DOC Response, Appendix I, pages 5 and 6).

Additionally, some of the refuse dikes are constructed of coarse slurry material (minus 1.25 inch rock) which precludes wind or water erosion. Thus they will not be vegetated during the interim of plant operations. The applicant's plan complies with this section (DOC Response Appendix I, page 6).

Stipulations

None.

UMC 817.101-.106 Backfilling and Grading

Existing Environment and Applicant's Proposal

The topography in the area of the Wellington Preparation Plant is relatively flat with slopes ranging from one to three percent.

The operator will grade all areas to be reclaimed along the contour as presented on Map E9-3342 of the ORP (UMC 784.13). Compacted materials and areas where slopes exceed 5h:1v will be ripped to two feet to preclude slippage surfaces and to enhance root penetration. Mechanical treatments such as pitting and gouging will be performed to encourage water infiltration (I-2, DOC Response).

According to present plans at least one foot of coarse refuse (more as specified in Appendices I and II of the DOC response) will be provided to act as a capillary barrier covering the highly saline lower refuse pond on the hypothesis that this thickness will be adequate to mitigate against upward salt migration (see pages 2 and 5, Draft TA Response March 29, 1984). This will be the subject of a test plot treatment. An annual monitoring program will be conducted to ascertain salt movement and concentration (see page 24, Appendix H, October 1983). Parameters to be monitored include pH, SAR and EC (see page 3, Draft TA Response March 29, 1984). If this thickness of coarse slurry proves inadequate based on the results of the monitoring program contrasting depths of slurry will be tested in the future. Should test plots indicate a need to revise the depth of coarse refuse employed plans and bonding will be adjusted accordingly (See following stipulation).

The upper refuse pond will be the source of the above material and this material in itself is subject to meeting soils suitability criteria in guidelines issued by the regulatory authority. This material will be available in situ for direct topsoil redistribution. On the other hand, in areas west of the Price River not requiring a capillary barrier, ripping of compacted areas will be performed. Refuse material available to cover the approximately 65 acre Upper Refuse pond is projected to be adequate to provide cover to a depth of 16 feet (Table IA and page I-1, DOC Response).

Compliance

The applicant will be in compliance with this section upon acceptance of commitments and time frames detailed below.

Stipulation 817.103-(1)-TLP

1. The success of test plots shall be evaluated at the time of permit renewal. At that time, information from test plots contained in annual monitoring reports, laboratory data, field evaluations and any other measures necessary shall be weighed to determine the adequacy of the twelve (12) inch coarse slurry capillary barrier. At that time, the applicant shall submit a report to the regulatory authority justifying the twelve (12) inch coarse slurry depth or proposing an alternative depth for approval. Should it be revealed that the depth requires modification, the bonding for this portion of the reclamation plan shall be adjusted accordingly.

UMC 817.111-.117 Revegetation

Existing Environment and Applicant's Proposal

The Wellington Preparation Plant is located within the shadscale and greasewood communities of the Upper Sonoran (Salt desert) life zone of Eastern Utah. Vegetative sampling of these communities was conducted during the summer of 1983 to quantify the existing vegetation adjacent to the disturbed area (see PAP, Appendix H) and is summarized below.

The shadscale community is dominated by Atriplex confertifolia, Hilaria jamesii, Plantago patagonica, Hordeum jubatum and small patches of Oryzopsis hymenoides. Total living cover for this community was determined to be 35% (S.D. = 6.92) (Based on ocular estimates of 15 - 1m² quadrats). Density of woody plants was determined by counting all rooted shrubs within eleven-1000 ft² belt transects with a mean of 80 shrubs per transect (S.D. = 19.57) or 3484 shrubs per acre. Above ground productivity was estimated to be 238.7 pounds (dry weight) per acre by clipping 15-1m² quadrats. Sample adequacy for all parameters was met (or exceeded) at the 80% confidence level with a 10% change in the mean. Range condition was evaluated and determined to be in fair condition.

The applicant has proposed to use the Range Site method for determining revegetation success for this community type. All requirements for using this method were met. Thus, reclamation success at the end of the liability period will be determined by comparing data collected from the reclaimed sites with the reported values for the various parameters of this study.

The greasewood community is dominated by Sarcobatus vermiculatus and Suaeda torreyana. Total living cover was determined to be 76.7% by ocular estimation of 15-1m² quadrats. Woody plant density was estimated to be 3964 shrubs per acre using ten-500 ft² belt transects. Above ground productivity was estimated to be 729 pounds per acre (dry weight) by clipping 45 1m² quadrats. Since this area was determined to be in poor range condition, the operator will establish it as a reference area and will manage this area (by fencing to exclude grazing) to improve range condition. Range condition will be monitored in 3 to 5 years to determine the effectiveness of the management plan. The statistical comparisons for revegetation success for the greasewood community will be made using data collected for the reference area and the reclaimed area at the end of the liability period (DOC Response, Appendix I, page 6).

The proposed revegetation plan is found in Appendix I of the December 30, 1983 Determination of Completeness response. At the time of final reclamation all disturbed areas will be revegetated using those species listed on tables 16 and 17. Those areas east of

the Price River will be broadcast seeded using the mix on table 17. Areas west of the Price River will utilize the seed mix on Table 16 and will be drill seeded with the exception of the coarse refuse pile, which will be broadcast seeded.

All revegetated areas will be "pitted" and mulched to help control erosion and improve moisture retention.

The proposed topsoil borrow area will encompass approximately 69 acres of pastureland. U. S. Steel has provided a plan to collect vegetation data to establish reclamation success standards during the summer of 1984 (prior to disturbance) and will provide a written report to the regulatory agency prior to October 31, 1984 (DOC Response, Appendix I, page 4).

Compliance

1. UMC 817.111 Revegetation: General Requirements

The proposed revegetation plan (DOC Response, Appendix I, December 30, 1983) indicated that all disturbed areas will be reclaimed. The seed mixes proposed will provide a diverse and effective plant community and will enhance the land uses of limited grazing and wildlife habitat by providing higher quality forage and cover. Successful reclamation will be determined at the end of the liability period based on statistical comparison of equality with the appropriate reference area(s) or range site data.

The applicant has also provided plans (DOC Response, Appendix I and July 31, 1984 submittal) to implement revegetation test plots to refine the final reclamation procedures.

2. UMC 817.112 Revegetation: Use of Introduced Species

The applicant does not plan to use introduced species (Appendix H, Tables 16 and 17), therefore, compliance with this section is met.

3. UMC 817.113 Revegetation: Timing

Topsoil distribution and seedbed preparation will be completed as close to the time of favorable seeding and planting as practical. Seeding will occur in late fall to avoid precocious fall germination, overcome seed dormancy, take advantage of spring snowmelt and minimize predation by seed collecting animals (Appendix I, pages 1-4). Since late fall is generally the only time for seeding (without supplemental irrigation) in arid areas of Utah, the applicant's proposal is in compliance with this section.

4. UMC 817.114 Revegetation: Mulching and other Soil Stabilizing Practices

The applicant will use 2,000 pounds of straw mulch per acre on all revegetated areas. The mulch will be crimped to anchor to the soils. All revegetated areas will also be pitted or gouged to aid in erosion control and moisture retention (Appendix I, page 1-4). This plan complies with the requirements of this section.

5. UMC 817.116 Revegetation: Standards for Success

Success of revegetation will be measured using the same techniques as were utilized to collect the baseline data from the range site and reference areas. Statistical comparisons of equality will be made between reclaimed areas and the appropriate range site or reference area at the end of the ten-year liability period. Comparisons of cover, productivity and woody plant density will be made at the 80% confidence level. Revegetation monitoring will occur throughout the liability period (as described on page I-5, December 30, 1983 submittal) to determine if adequate revegetation is being accomplished. This plan complies with the requirements of this section.

Stipulations

None.

UMC 817.131-.132 Cessation of Operations

Existing Environment and Applicant's Proposal

The applicant has committed to notify the DOGM and take appropriate action as required under these regulations, should operations at the plant be suspended (ACR Response, page 11).

Compliance

The applicant complies with these sections.

Stipulations

None.

UMC 817.133 Postmining Land-Use

Existing Environment and Applicant's Proposal

Map E9-3343 shows the current land uses of the permit and adjacent areas as industrial, grazing, and undeveloped land. Prior

to plant construction (1958), those lands now occupied by the coal cleaning plant, the railroad system and the refuse disposal area were undeveloped lands. Other areas of the permit were used for limited grazing.

Productivity for the site is low due to soil types and poor availability of water. The riparian zone along the Price River (about 39 acres within the permit area) is the only high priority or critical wildlife habitat within the permit area. The operator intends to return all distured areas to an "undeveloped land" land use.

Compliance

The proposed post mine land use is compatible with local zoning and, with the land uses of the adjacent lands.

The revegetation plan (seed mix) was developed to provide cover and food for wildlife, and as such, will enhance the area for local wildlife populations. The revegetation plan will also provide a better quality of forage for any grazing that might occur. In fine, the reclamation plan will restore or enhance the pre-mine land uses, thus compliance with this section is achieved.

Stipulations

None.

UMC 817.150-.176 Roads

Existing Environment and Applicant's Proposal

There are several roads used in conjunction with the plant facilities. The plant access and heat dryer access roads are Class I and are paved for day to day travel. The plant access extends from the facilities gate to the plant with no appreciable grade (cross-sections on Map C9-1286) and drains into the vegetative filter northeast of the plant. The heat dryer access road accessing the topsoil access road is part of the plant facility and parking pavement complex.

The nonpaved roads (i.e., clear water pipeline access, refuse pile access, material storage yard access, powerline access, upper refuse pond access, topsoil stockpile access and Sauerman tail tower access) are Class II roads used for intermittent travel. These roads were all built with existing construction techniques at the time of construction in the late 1950's, early 60's and are all in good condition evident from subsequent field inspections by the regulatory authority. These roads either drain into the vegetative filter or in the refuse ponds.

No relocation of any of the roads is planned. Maximum grade of any unpaved road is 9.8 percent on the upper refuse pond access road. This road drains directly into the upper and lower refuse ponds.

The county road, which remains unnamed or numbered, bisects the permit area between the refuse ponds and the Price River and is maintained by Carbon County.

Fugitive dust is controlled on roads by limiting speed and restricting traffic. If dust becomes a problem, the applicant will either sprinkle or chemically stabilize (page 748-48 of ACR Response). All roads will be reclaimed with the approved plan except the county road. Road reference drawings: F9-177, Sheets 1 and 2, C9-1286, A9-1432 and E9-3426 in Technical Revision #1.

Compliance

The applicant complies with this section.

Stipulations

None.

UMC 817.180 Other Transportation Facilities

Existing Environment and Applicant's Proposal

The plant railroad tracks are designed and engineered structures consistent with the permanent Rio Grande railroad tracks which run through the permit area. The plant railroad tracks will be dismantled and the area reclaimed upon final abandonment.

Culverts and bridges were engineered to design specifications at the time of construction in 1957-58 and were designed to safely pass a large storm event by regulatory guidelines at the time of construction. Field inspections show these structures are in good to excellent condition and are consistent with current regulations.

The plant bridge will be left after reclamation to provide access to monitor reclamation on the west side of the Price River.

The slurry pipeline from the plant to the refuse ponds is above ground and spans the Price River. It is an engineered line on steel supports. The pipeline is critically maintained due to its economic importance and is design welded over the Price River to prevent rupture and subsequent drainage into the river. The pipeline will be removed upon reclamation. There are five conveyors within the plant area: the raw coal conveyor; dry coal conveyor; coarse refuse

conveyor; clean coal conveyor; and, the wet coal conveyor. All conveyors are enclosed to prevent dust and assure economical operation. They will all be dismantled upon reclamation.

The prevention of damage to fish, wildlife and related environmental values is discussed in Section UMC 817.97 of the TA. The further diminution or degradation of water quality, prevention of additional suspended solids, erosion and siltation is discussed in Section UMC 817.41-.49 of the TA.

Compliance

The applicant complies with this section.

Stipulations

None.

UMC 817.181 Support Facilities and Utility Installations

Existing Environment and Applicant's Proposal

The central facilities are shown on Maps F9-177, E9-3341, Exhibits 1, 2, 3 and 4 and Map C9-1285. The buildings and facilities are all engineered structures which rest on concrete floorings. Blueprints are available upon request. Field inspection by the regulatory authority verifies that the buildings are in good condition and are consistent with State regulations since their construction in 1957-58. Upon reclamation, the buildings will be dismantled and disposed of and the area reclaimed in line with the approved postmine land-use.

Power is supplied and maintained by Utah Power & Light Company. Power enters the permit area from the north along the railroad right-of-way (shown on Map F9-177, E9-3341).

The discussion of prevention of damage to fish, wildlife and other environmental values is discussed in Section UMC 817.97 of the TA. The discussion of prevention of additional contributions of suspended solids to streamflow or runoff outside the permit area is found in Section UMC 817.41-.49 of the TA.

Compliance

Applicant complies with this section.

Stipulations

None.

76070