

TECHNICAL MEMORANDUM

Utah Coal Regulatory Program

August 2, 2002

TO: Internal File

THRU: Pamela Grubaugh-Littig, Permit Supervisor

THRU: James D. Smith, Environmental Scientist III/Hydrogeology, Team Lead

FROM: Priscilla Burton, Environmental Scientist III/Soils

RE: Reclamation Plan – Sediment Pond (Phase 3), Energy West Mining Company, Des-Bee-Dove Mine, C/015/0017, Task ID #2176

SUMMARY:

Phase 1 reclamation was completed in May 2002. Phase 1 involved reconstruction of three drainages in the location of the Little Dove/ Beehive pads and reshaping the water tank pad and the substation pad and access roads. Phase 2 reclamation covered 22 acres of (mostly) pre-SMCRA disturbance, including 8.4 acres of reconstructed fill slopes on the bathhouse pad and in the lower main drainage and at the Deseret portal and access road to the Beehive portal (Section 310). During Phase 2, a drainage was carved out of the Deseret Mine pad and Tipple yard and the storage yard area (where coal mine waste was recently removed, see AM01B). The Bathhouse pad was the repository of coal mine waste and a source of cover material, including substitute topsoil (AM01D-2).

Phase 3 reclamation plans, received March 4, 2005, describes reclamation of the sediment pond (4.6 acres) and access road (2.27 acres, 4,000 ft in length), see Sections 230 and 241. The plan describes an increase in disturbed area down-slope from the pond embankment and use of the pond sediments as substitute topsoil. This memo reviews the application for compliance with R645-301-200 (soils).

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TECHNICAL ANALYSIS:

GENERAL CONTENTS

PERMIT APPLICATION FORMAT AND CONTENTS

Regulatory Reference: 30 CFR 777.11; R645-301-120.

Analysis:

The description of Phase 1 Reclamation of Little Dove and the Beehive Mines is located in Appendix XIV of the MRP. Soils information for both Phase 1 and 2 is located in Appendix XIV. Phase 2 reclamation plans are in Appendix XV. The Phase 3 Reclamation Plan is described in Appendix XVI (a separate MRP Volume for reclamation of the sediment pond site).

Please finish the statement concerning the increase in acreage made on page 7 of Section 241 Appendix XVI.

Findings:

Information provided is not adequate to meet the requirements of the Permit Application Format and Contents section of the regulations. Prior to approval, the Permittee must provide the following information in accordance with:

R645-301-121.200, • Please finish the statement concerning the increase in acreage made on page 7 of Section 241 Appendix XVI. • The plan indicates in Table 5-1 that two small drainage channels will be rip rapped and the main drainage channel will be re-established on Mancos shale bedrock. However, Plates 200-2, 500-5, 700-1 all show three minor drainages merging into the main drainage. Please correct this inconsistency.

ENVIRONMENTAL RESOURCE INFORMATION

Regulatory Reference: Pub. L 95-87 Sections 507(b), 508(a), and 516(b); 30 CFR 783., et. al.

SOILS RESOURCE INFORMATION

Regulatory Reference: 30 CFR 783.21; 30 CFR 817.22; 30 CFR 817.200(c); 30 CFR 823; R645-301-220; R645-301-411.

Analysis:

Elevation of the sediment pond is 6,750 feet on the southern end of East Mountain along Emery County road 412. The soil is predominantly derived from Mancos shale with intermixed gravels and sand (Section 222). The plant community is desert shrub. The dominant plant is saltbush (*Atriplex*).

At the Order III level, soils are described in the MRP as either

- Lithic Ustorthents, characterized by lithic contact at 14 inches. Surface soils derived from sandstone, containing 75% coarse fragments, are very gravelly loam (0 – 4 inches) over flaggy sand loam (4 – 14 inches).
- or
- Xerollic Calcorthids, characterized by an 18 inch topsoil (A₁ and A₂) horizon over a caliche layer (hard packed calcium) in the C horizon.

Soil Map 2-16 (in Volume 3) indicates that topsoil and subsoil salvaged from excavation of the pond were of the Lithic Ustorthents map unit. The MRP indicates that the sediment pond site soils are 15 inches thick and high in gypsum (Section 222). Proposed sampling of the native soils should confirm this assessment. Sample point DBD 505 must represent the average conditions of the added disturbed area. The Division requests that this sample point is located 40 ft down slope from its present location a bit further from the knob.

The plan indicates that the native soils below the pond embankment will be disturbed. The plan must indicate that topsoil from the increased disturbed area will be salvaged and saved. If an average of one foot of topsoil is salvaged from this small area, it could provide four inches of cover for the 4.6-acre site.

Findings:

The information provided does not meet the requirement of Environmental Resources Soils section of the Regulations. Prior to approval, the Permittee must provide the following information in accordance with:

R645-301-223, The MRP indicates that the sediment pond site soils are 15 inches thick and high in gypsum (Section 222). Proposed sampling of the native soils should confirm this assessment. Sample point DBD 505 must represent the average conditions of the added disturbed area. The Division requests that this sample point is located 40 ft down slope from its present location a bit further from the knob.

R645-301-232.100, The plan indicates that the native soils below the pond embankment

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will be disturbed. The plan must indicate that topsoil from the increased disturbed area will be salvaged and saved. If an average of one foot of topsoil is salvaged from this small area, it could provide four inches of cover for the 4.6 acre site.

OPERATION PLAN

TOPSOIL AND SUBSOIL

Regulatory Reference: 30 CFR Sec. 817.22; R645-301-230.

Analysis:

Removal and Storage

Approximately 12,714 yd³ of topsoil and subsoil are stockpiled from pond excavation (Section 230). Samples DBD 105 and DBD 205 will be taken of the subsoil for analysis according to tables 4 and 8 of the Division's DRAFT *Guidelines for Management of Topsoil and Overburden*, June 2003 (Section 241 and Plate 200-1). The plan indicates that this material will be used to fill the pond. However, the results of the soils analysis must be provided prior to Division approval of burial of this stockpiled material.

Findings:

Information provided in the submittal meets the requirements of the Regulations.

RECLAMATION PLAN

BACKFILLING AND GRADING

Regulatory Reference: 30 CFR Sec. 785.15, 817.102, 817.107; R645-301-234, -301-537, -301-552, -301-553, -302-230, -302-231, -302-232, -302-233.

Analysis:

General

The plan indicates in Table 5-1 that two small drainage channels will be rip rapped and the main drainage channel will be re-established on Mancos shale bedrock. However, Plates 200-2, 500-5, 700-1 all show three minor drainages merging into the main drainage. (See deficiency written under R645-301-121.200.)

Land sloping to the drainage will be graded to 2h:1v. The plan proposes to use 12,700 yd³ of stored subsoil material along with 13,166 from the pond embankments (Section 241) and additional material to be gathered from outside the disturbed area to fill the pond. The characteristics of pond embankments materials are described in Section 241. The graded pond would then be covered with sediments cleaned from the pond (as substitute topsoil). In the Division's experience, sediments cleared from a pond are not suitable due to their texture (very fine silty clay), which sets up (like cement) when dry.

Cut slopes will remain on the northern and eastern sides of the pond according to the maps provided. Cut slopes at cross sections 8+00, 9+00, 10+00 and 17+35 along the sediment pond access road (Map 500-3) will remain. These cut slopes will be roughened and seeded, no substitute topsoil will be applied to the cut slopes.

Findings:

Information provided in the proposed amendment is not adequate to meet the Reclamation Backfilling and Grading requirements of the Regulations. Prior to approval the Permittee must provide the following, in accordance with:

R645-301- 224, The plan must include the results of subsoil sampling (described in Section 224) prior to the Division's consideration of sampling pond sediments for use as substitute topsoil.

TOPSOIL AND SUBSOIL

Regulatory Reference: 30 CFR Sec. 817.22; R645-301-240.

Analysis:

Redistribution

Topsoil and subsoil were salvaged and stored in a stockpile at the pond site. In addition, the plan will disturb approximately 0.18 new acres that will provide additional topsoil cover.

However, the plan proposes to use approximately 3,146 yd³ of accumulated pond sediments (Section 553) as substitute topsoil. Pond sediments would provide seven inches of cover over 4.6 ac regraded pond site. The sediments will be sampled according to tables 4 and 8 of the Division's DRAFT *Guidelines for Management of Topsoil and Overburden*, June 2003. Locations of pond sampling sites are identified on Map 200-1 of App XVI. Each location will be sampled at twelve-inch intervals as described in Section 224. In the Division's experience, sediments cleared from a pond are not suitable due to their texture (very fine silty clay), which

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sets up (like cement) when dry. However R645-301-233.100 allows for a demonstration that the pond sediments are the best available material. The application must include the results of analyses.

Soils found to be unsuitable according to the guidelines will be buried with four feet of material (Section 224).

Findings:

Information provided in the proposed amendment is not considered adequate to meet the requirements of Operations Plan Topsoil and Subsoil section of the regulations. Prior to approval the Permittee must provide the following, in accordance with:

R645-301-233.100, In the Division's experience, sediments cleared from a pond are not suitable due to their texture (very fine silty clay), which sets up (like cement) when dry. However R645-301-233.100 allows for a demonstration that the pond sediments are the best available material. The application must include the results of the pond sediment analyses.

STABILIZATION OF SURFACE AREAS

Regulatory Reference: 30 CFR Sec. 817.95; R645-301-244.

Analysis:

Erosion will be controlled through rock placement (Section 241), by extreme gouging (defined as 18 inch deep pocks that are 3 ft in diameter, Section 242.130), with seeding (Table 3-1), and by surface mulch (Section 341). However engineering plans indicate that boulders will be placed on the slopes "if available" (Section 552 and 553). According to the baseline soils information provided, the adjacent ground has 50 – 75% rock and boulder cover. The plan must provide a percent cover standard to be achieved at reclamation.

Rills and gullies will be repaired if they affect the post-mining land use or cause a violation of water quality standards (Section 244.300). (Land use is described in Section 411 as grazing, wildlife, coal or methane development, and recreation.)

Findings:

Information provided in the proposed amendment is not adequate to meet the Reclamation Stabilization of Surface Areas. Prior to approval the Permittee must provide the following, in accordance with:

R645-301-244.100, Engineering plans indicate that boulders will be placed on the slopes “if available” (Section 552 and 553). According to the baseline soils information provided, the adjacent ground has 50 – 75% rock and boulder cover. The plan must provide a percent cover standard to be achieved at reclamation.

RECOMMENDATIONS:

Approval is not recommended until the analytical information for the proposed substitute topsoil has been received.