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State of Utah
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DIVISION OF OIL, GAS AND MINING

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TO: Internal File

FROM: Priscilla W. Burton, Sr. Reclamation Specialist/ Soils PB

RE: Abatement for Notice of Violation NOV 01-7-1-1, PacifiCorp, Des Bee Dove Mine, C/015/017-AM01C-1

SUMMARY:

A Notice of Violation was written on July 9, 2001 for failure to conduct coal mining and reclamation activities in accordance with the approved plan (page 4-13); failure to comply with the terms and conditions of the permit, all applicable performance standards and requirements of the State program; and failure to remove, segregate and stockpile the best available plant supporting soil medium from within the permit area.

Abatement of NOV 01-7-1-1 required the development of "a soil management plan that includes a complete soil volume and quality analysis to be implemented upon approval." A proposal for gathering soil information was received on September 10, 2001. The Division reviewed the proposal in a document dated October 3, 2001. A response to that Technical Analysis was received from Energy West Mining Co. on November 7, 2001. In the interim, a Phase 1 Reclamation Plan for the Des Bee Dove mine was received (AM01A-1, September 24, 2001) and reviewed by the Division (November 13, 2001). Approval of the Phase 1 Reclamation Plan requires information that is also necessary for the abatement of NOV 01-7-1-1.

The Soil Management Plan will be included in Phase 1 and Phase 2 reclamation operations. Qualified Energy West employees will direct the field work. The Permittee will employ a qualified soil scientist to take the soil samples and create composites from samples taken, and to evaluate the results of the soil chemical and physical properties.[1]

[1]Telephone conversation on November 16, 2001 between Pam Grubaugh-Littig, Permit Supervisor, and Chuck Semborski of Energy West.

TECHNICAL ANAYLSIS:

GENERAL CONTENTS

PERMIT APPLICATION FORMAT AND CONTENTS

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

Analysis:

This document refers to Appendix A of Phase 1 (AM01A-1) and Phase 2 (AM01D) Reclamation Plans (under review by the Division) for soil sampling information. This document will become part of both Phase 1 and Phase 2 reclamation plans.

Findings:

Information provided in the proposed amendment is adequate to meet the minimum Operations Plan requirements for Permit Application Format and Contents of the Regulations.

REPORTING OF TECHNICAL DATA

Regulatory Reference: 30 CFR 777.13; R645-301-130.

Analysis:

The following items have become part of the process:

- Include original Laboratory sheets with the results from the sampling.
- Record all field information on the NRCS 232 form

Qualified Energy West employees will direct the field work. The Permittee will employ a qualified soil scientist to conduct the work and evaluate the analytical results.[2]

Findings:

The information provided is adequate to fulfill the technical data reporting requirements of the Regulations.

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[2]Telephone conversation on November 16, 2001 between Pam Grubaugh-Littig, Permit Supervisor, and Chuck Semborski of Energy West.

MAPS AND PLANS

Regulatory Reference: 30 CFR 777.14; R645-301-140.

Analysis:

Drawing CM-10336-DS, otherwise known as Plate 2-15, shows Phase 1 and Phase II Reclamation areas, soil sample locations, and sampling dates. Laboratory analyses for this map are found in Appendix A of the Phase 1(AM01A-1) and Phase 2 (AM01D) Reclamation Plan submittals.

Findings:

The information provided is adequate to fulfill the maps and plans reporting requirements of the Regulations.

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:

The average annual precipitation is 6 – 8 inches (page 2-153, Volume 1).

Elevation is 7,800 feet on a south to southeast exposure and slopes of 1 ½ H:1V to 2H:1V. The plant community is Utah juniper and pinyon pine. Plants within this community include Salina wildrye, western wheatgrass, and Indian ricegrass.

Soils have been described in the MRP as either

- Typic Ustochrepts (50%) which are characterized by a 35 cm thick (13 inches) sandy loam surface layer with 25% coarse fragments. Underlying this layer is a stony loam layer 100 cm thick (39 inches) with up to 50% coarse fragments.

or

- Lithic Ustorthents (25%) which are characterized by rock within 50 cm or 19 inches.

Also present are small areas of Mollisols on the north and east facing slopes. In general, Mollisols are deep, well drained, with a well developed A horizon. See the General Soil Map of the Permit Area, Drawing #CE-10502-DS.

Sampling of adjacent undisturbed slopes was conducted in 1980 and is presented in Table 1, page 4-10 of the MRP. The information shows that undisturbed soils adjacent to the site have on the average a pH of 7.5; EC of 0.4 to 1.0; SAR of 0.8; avail Nitrogen of 0.1%; Organic Matter of 3%; and extractable phosphorus of 1 ppm. In general, the soils are 11 – 18 inches thick over rock, with small areas of deeper soils.

The Permittee has done previous surveys of the site. The soil sampling locations for these surveys are noted on Plate 2-15, submitted with this proposal. Proposed sampling locations are also indicated on the map. A substitute topsoil pile is designated on the map, but has not been discussed in the narrative.

The Division has summarized the information known about the properties of the substitute topsoil, spoil and coal waste found within the disturbed area in the review of AM01A, AM01A-1 and AM01B.

Findings:

Information provided in the proposed amendment is adequate to meet the minimum Operations Plan requirements for Environmental Resource Soils Resource Information of the Regulations.

OPERATION PLAN

TOPSOIL AND SUBSOIL

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

Analysis:

The submittal indicates that trenches will be excavated to bedrock or a depth equivalent to the post-mine reclamation elevation with three purposes in mind:

- Identification of bedrock locations,
- Assist channel design,
- Determination of suitable soil resource locations.

As outlined on Plate 2-15, Des-Bee-Dove Coal Mines Soils Map, Energy West proposes to sample sites SS11 and SS12 and to excavate ten soil trenches in the following locations:

- Bathhouse pad (two),
- Spoil material stored on bathhouse pad (one),
- Deseret Mine belt/return portals (one),
- Deseret pad outslope (one)
- Near the switchback of the Little Dove/Beehive Access Road (one),
- Little Dove/Beehive Mine pad (two),
- Substation cutslope (one)
- Soil beneath the main access road (one).

The plan indicates that trench sidewalls will be described and field parameters noted. Field notes will be submitted to the Division with the laboratory analyses. Twenty samples will be taken of soil (two per trench) and ten of coal debris/waste (one per trench). Like samples will be composited. Distinct or unique material will be sampled separately.

Laboratory methods of analysis are printed in the submittal and reflect the comments made in the Technical Analysis of October 3, 2001.

The soil erodibility K-factor values of the soil will be determined based upon the following soil characteristics:

- percent silt and very fine sand
- percent sand
- percent organic matter
- soil structure and
- soil permeability.

The soil erodibility equation will be used to provide an estimate of K:

$$K \text{ factor} = [(0.00021)(M^{1.14})(12 - a) + (3.25)(b - 2) + (2.5)(c - 3)] / 100$$

Where M = (% silt + % very fine sand)(100 - % clay)
a = % organic matter
b = structure code is as follows: 1 = very fine granular; 2 = fine granular; 3 = medium or coarse granular; and 4 = blocky, platy, or massive
c = permeability code

Removal and Storage

The plan states that "based upon the results of the soil trenching, PacifiCorp will develop a soil management and distribution plan for both Phase 1 and 2 reclamation projects. Identified areas of substitute soil will be excavated, segregated and stored separately during the reclamation process."

Findings:

Information provided in the proposed amendment is adequate to meet the minimum Operations Plan requirements for Topsoil Substitute and Supplements of the Regulations

RECLAMATION PLAN

GENERAL REQUIREMENTS

Regulatory Reference: PL 95-87 Sec. 515 and 516; 30 CFR Sec. 784.13, 784.14, 784.15, 784.16, 784.17, 784.18, 784.19, 784.20, 784.21, 784.22, 784.23, 784.24, 784.25, 784.26; R645-301-231, -301-233, -301-322, -301-323, -301-331, -301-333, -301-341, -301-342, -301-411, -301-412, -301-422, -301-512, -301-513, -301-521, -301-522, -301-525, -301-526, -301-527, -301-528, -301-529, -301-531, -301-533, -301-534, -301-536, -301-537, -301-542, -301-623, -301-624, -301-625, -301-626, -301-631, -301-632, -301-731, -301-723, -301-724, -301-725, -301-726, -301-728, -301-729, -301-731, -301-732, -301-733, -301-746, -301-764, -301-830.

Analysis:

The slope stability analysis conducted by RB&G Engineering indicated that slopes steeper than 50% (2h:1v) should receive only isolated pockets of topsoil between rock armoring, for stability purposes. The Permittee has calculated that slopes ≤ 50% will require 2,100 cubic yards of substitute topsoil for six inches of cover over 2.6 acres of Phase 1 and 8,900 cubic yards of substitute topsoil for six inches of cover over 11.0 acres of Phase 2 reclamation areas.

Findings:

Information provided in the proposed amendment is adequate to meet the minimum Reclamation Plan requirements for Topsoil and Subsoil of the Regulations.

RECCOMENDATIONS:

The plan is recommended for approval and incorporation into the Phase 1 (AM01A) and Phase 2 (AM01D) Reclamation Plans.