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State of Utah  
DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS AND MINING

ACT/007/004  
#2

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June 16, 1995

TO: FILE

TO: Daron Haddock, Permit Supervisor

FROM: Henry Sauer, Senior Reclamation Soils Specialist 

RE: Proposed Willow Creek Refuse Removal Project  
(Major Revision 95-B), AMAX Coal Co., Castle  
Gate Mine, ACT/007/004, Folder #2, Carbon  
County, Utah

#### SYNOPSIS

The permittee submitted a proposal (received March 16, 1995) for the removal of underground development waste from the AML-Willow Creek Reclamation Project. The Cyprus Plateau Mining Corporation has submitted a separate mining and reclamation application for the Willow Creek Mine. To facilitate the development of the Willow Creek Mine, underground development waste disposed of on site by the AML Program will be reexcavated and placed in the Schoolhouse Refuse Disposal Facility.

The forthcoming analysis focuses on the removal and disposal of underground development waste. **The review does not consider the reclamation plan for the Schoolhouse Refuse Disposal Facility and the Willow Creek Mine.** These reclamation plans will be separately reviewed and commented on during the review of the Willow Creek Mine Mining and Reclamation Application.

#### SOILS RESOURCE INFORMATION

Regulatory Reference: 30 CFR Sec. 783.21, 817.200(c)

##### Minimum Regulatory Requirements:

*Provide adequate soil survey information on those portions of the permit area to be affected by surface operations or facilities consisting of a map delineating different soils, soil identification, soil description, and present and potential productivity of existing soils.*

*Where selected overburden materials are proposed as a supplement or substitute for topsoil, provide results of the analysis, trials and tests required. Results of physical and chemical analyses of overburden and topsoil must be provided to demonstrate that the resulting soil medium is equal to or more suitable for sustaining revegetation than the available topsoil, provided that trials and tests are certified by an approved laboratory. These data may be obtained from any one or a combination of the following sources: U.S. Department*

of Agriculture Soil Conservation Service published data based on established soil series; U.S. Department of Agriculture Soil Conservation Service Technical Guides; State agricultural agency, university, Tennessee Valley Authority, Bureau of Land Management or U.S. Department of Agriculture Forest Service published data based on soil series properties and behavior; or, results of physical and chemical analyses, field site trials, or greenhouse tests of the topsoil and overburden materials (soil series) from the permit area. If the permittee demonstrates through soil survey or other data that the topsoil and unconsolidated material are insufficient and substitute materials will be used, only the substitute materials must be analyzed.

#### **Analysis:**

The proposed refuse removal project encompasses lands which were previously disturbed and reclaimed by the Abandon Mine Land Program (AML). The soil survey map for the area is provided in Exhibit 12-2-1. The disturbed area lies predominantly within what was formally the Shupert-Winnetti Complex and the Travesilla-Rock Outcrop-Gerst Complex. Present and potential productivity statements for these soil map units are presented in Table 8-2 of the Willow Creek Permit Application Package. Topsoil storage and handling plans are discussed in Section 12.2.3.4. Topsoil stockpile locations are depicted on Exhibit 12-5-1.

#### **Findings:**

Information presented in the plan meets the minimum requirements of this section.

### **TOPSOIL AND SUBSOIL**

Regulatory Reference: 30 CFR Sec. 817.22

#### **Minimum Regulatory Requirements:**

**Topsoil removal and storage.**

All topsoil shall be removed as a separate layer from the area to be disturbed, and segregated. Where the topsoil is of insufficient quantity or of poor quality for sustaining vegetation, the selected overburden materials approved by the Division for use as a substitute or supplement to topsoil shall be removed as a separate layer from the area to be disturbed, and segregated. If topsoil is less than 6 inches thick, the operator may remove the topsoil and the unconsolidated materials immediately below the topsoil and treat the mixture as topsoil.

The Division may choose not to require the removal of topsoil for minor disturbances which occur at the site of small structures, such as power poles, signs, or fence lines; or, will not destroy the existing vegetation and will not cause erosion.

All materials shall be removed after the vegetative cover that would interfere with its salvage is cleared from the area to be disturbed, but before any drilling, blasting, mining, or other surface disturbance takes place.

Selected overburden materials may be substituted for, or used as a supplement to, topsoil if the operator demonstrates to the Division that the resulting soil medium is equal to, or more suitable for sustaining vegetation than, the existing topsoil, and the resulting soil medium is the best available in the permit area to support revegetation.

Materials removed shall be segregated and stockpiled when it is impractical to redistribute such materials promptly on regraded areas. Stockpiled materials shall: be selectively placed on a stable site within the permit area; be protected from contaminants and unnecessary compaction that would interfere with revegetation; be protected from wind and water erosion through prompt establishment and maintenance of an effective, quick growing vegetative cover or through other measures approved by the Division; and, not be moved until required for redistribution unless approved by the Division.

Where long-term surface disturbances will result from facilities such as support facilities and preparation plants and where stockpiling of materials would be detrimental to the quality or quantity of those materials, the Division may approve the temporary distribution of the soil materials so removed to an approved site within the permit area to enhance the current use of that site until needed for later reclamation, provided that: such action will not permanently diminish the capability of the topsoil of the host site; and, the material will be retained in a condition more suitable for redistribution than if stockpiled.

The Division may require that the B horizon, C horizon, or other underlying strata, or portions thereof, be removed and segregated, stockpiled, and redistributed as subsoil in accordance with the above requirements if it finds that such subsoil layers are necessary to comply with the revegetation.

#### **Analysis:**

The permittee asserts that 6-10 inches of topsoil overlies the underground development waste targeted for removal (page 12-2-1). The permittee discusses the removal of topsoil in two separate lifts. Removal of the A horizon in the first lift and removal of the B and C horizons in the second lift. The "topsoil" overlying the underground development waste is composed of regolith which was excavated from an area immediately adjacent to the current waste disposal area. The "topsoil" was placed on top of the coal waste in 1988. Based on this information there has not been ample time for visually distinguishable soil horizonation to occur.

Through personal communication with AML staff, it has been determined that approximately 15,000 cubic yards of soil material overlies the underground development waste. This equates to approximately 2-3 feet over the underground development waste. Immediately below the waste disposal area, adjacent to the creek the AML ripped the in place regolith and seeded. This procedure was also followed in the vicinity of the proposed topsoil stockpile. Based on a cursory review of the Willow Creek Mining and Reclamation Plan, it appears that the availability of suitable substitute topsoil for final reclamation is limited.

#### **Findings:**

Information presented in the plan does not meet the minimum requirements of this section.

The Division finds that the topsoil material covering the underground development waste and revegetated regolith is necessary to comply with the revegetation requirements of the R645-301 and R645-302 Rules. Soil material (regolith) which was

ripped and seeded by AML, which will be redistributed during the removal and transportation of waste and topsoil, must be separately removed and stockpiled. Depth of soil (regolith) salvage should be sufficiently deep to remove the majority of the root mass and avoid removing mine waste with soil material.

Therefore, prior to underground development waste removal, all the soil material covering the underground development waste and the root mass portions of the redisturbed in place regolith (haul roads and incidental staging areas) must be separately removed, stockpiled and redistributed at the time of final reclamation to comply with the revegetation requirements of R645-301-353 through R645-301-357.

## **GEOLOGIC RESOURCE INFORMATION**

Regulatory Reference: 30 CFR Sec. 784.22

### **Minimum Regulatory Requirements:**

*Each application shall include geologic information in sufficient detail to assist in: determining the probable hydrologic consequences of the operation upon the quality and quantity of surface and ground water in the permit and adjacent areas, including the extent to which surface- and ground-water monitoring is necessary; determining all potentially acid- or toxic-forming strata down to and including the stratum immediately below the coal seam to be mined; determining whether reclamation can be accomplished and whether the proposed operation has been designed to prevent material damage to the hydrologic balance outside the permit area; and, preparing the subsidence control plan.*

### **Analysis:**

Appendix 12-6-2 contains the results of the chemical analyses performed on underground development waste drill hole samples. However, identification of these data as it relates to source and location is not clear. Identification of the sample site location, sample depth increment and solid matrix classification of the samples collected is necessary for interpretation of the information provided.

### **Findings:**

Information presented in the plan does not meet the minimum requirements of this section.

The permittee must clearly identify the sample site location, sample depth increment and solid matrix classification of the underground development waste samples collected.