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DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS AND MINING

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February 5, 2002

TO: Internal File  
THRU: Mike J. Suflita, Senior Reclamation Specialist, Hydrologist/Team Lead *MJK*  
FROM: *WB* Priscilla W. Burton, Senior Reclamation Specialist/Soils  
RE: Culvert C-36U, Co Op Mining, Bear Canyon Mine, C/015/025-AM01D

**SUMMARY:**

An application to add a culvert to Bear Creek was received by the Division on December 31, 2001. Installation of the culvert will add: 0.01 acres to the disturbed area boundary within the perennial stream channel and 0.01 acres of ground in area TS6 (shown on Plate 8-5C between cross sections 1 + 00 and 2 + 00, where twelve yards of undisturbed topsoil will be salvaged and 1,312 cu yds of subsoil will be excavated for backfill around the culvert. After Division review and comment, this amendment was withdrawn.

**TECHNICAL ANALYSIS:**

**GENERAL CONTENTS**

**PERMIT APPLICATION FORMAT AND CONTENTS**

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

**Analysis:**

The Table 3L-1 has not been updated across all columns for TS6, where the Excess Volume should be changed to 1,241 cu yds.

The Topsoil Summary Table 8.9.7 has also been revised to show additional soil storage at the Wild Horse Ridge topsoil pile. However, the subtotal column should reflect the addition.

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The reason for revising Plates 2-4E & G is unclear.

The disturbed area boundary has not been accurately redrawn for TS6 on Plate 3-2C.

Being conservative and using Plate 8-5C as a guide, the Division calculates that an area  $100 \times 15 = 1500$  sq ft or 0.03 acres. Are the figures provided accurate for topsoil salvage area in TS6?

**Findings:**

Information provided in the application has not been adequately updated. Prior to approval, the Permittee must provide the following in accordance with:

**R645-301-120, a.** Update Table 3L-1 across all columns for TS6, so that the Excess Volume figure agrees with the cut and fill volumes recorded for TS 6. i.e. 1,241 cu yds. **b.** Update Topsoil Summary Table 8.9.7 to revise the subtotal column **c.** Provide reasoning for revising Plates 2-4E & G **d.** Accurately redraw the disturbed area boundary for TS6 on Plate 3-2C. **e.** Check calculations on the area to be disturbed in TS6.

## **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:**

Culvert C-26U will disturb approximately 90 feet of riparian area outside of the presently disturbed area boundary. The application indicates on page 3-120 (Section 3.6.13) that the site was previously disturbed, and currently contains coal fines, coal and non-coal waste. No site specific information was provided to support this statement. A soil survey must be conducted to describe the soils to be disturbed and provide a basis for estimation of the material available for salvage.

**Findings:**

Information provided in the application is not considered adequate to meet the minimum Environmental Soils Resource Information requirement of the regulations. Prior to approval, the Permittee must provide the following in accordance with:

**R645-301-222**, The Permittee must provide site specific soils resource information to determine the potential for soil salvage from the stream channel side slopes.

## **OPERATION PLAN**

### **TOPSOIL AND SUBSOIL**

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

**Analysis:**

#### **Removal and Storage**

Table 8.3-2 and Plate 8-5C and 8-5F (also 2-4F & 3-2C, 3-2F) have been revised to show that 0.01 acres of ground will be added to the permit area in the stream channel (reclamation area TS5) and 0.01 acres of ground will be disturbed between cross sections 1 + 00 and 2 + 00 as shown on Plate 8-5C (reclamation area TS6) for the purpose of obtaining fill around the culvert. Soil in the vicinity of TS6 is labeled TR for Travesilla soil on Plate 8-1. Plate 8-5E shows sample site TS1 in the Travesilla soil. Samples were analyzed by InterMountain Laboratories in Farmington, New Mexico. Results of the sampling are in Appendix 8-A and are dated January 8, 1993. Sample TS1 was analyzed from 0 – 6 inches, 6 – 12 inches and 12 – 24 inches. Based upon analytical results, the top six inches appears to be topsoil.

Section 3.6.13 indicates that 12.1 cu yds of topsoil from the slope in TS6 will be salvaged and taken to the Wildhorse Ridge topsoil pile and 1,312 cubic yards of subsoil fill will be excavated from the site. The topsoil salvage location is shown as a slope alongside the road on the surface facilities map Plate 2-4C. The soil salvage will entail reaching up to 50 feet up on the slope and disturbing 150 feet length of slope. Twelve cubic yards of soil from 0.01 acres equates to a salvage depth of 8 – 9 inches. The depth to bedrock is unknown and may hinder subsoil salvage, requiring a larger area than what is specified to obtain the 1,312 cubic yards of fill (to backfill culvert C 26U).

The Topsoil Summary Table 8.9.7 has also been revised to show additional soil storage at the Wild Horse Ridge topsoil pile. However, the subtotal column should also reflect the

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addition. This deficiency was noted above in the Permit Application Format and Contents section of this technical review.

The operations plan indicates that no salvage of soil will be conducted (page 3-120, Section 3.6.13) in location of the culvert installation in the channel. However, there is no survey of soils to justify such a conclusion. Photographs in the Division files indicate a thriving riparian community exists on the slopes adjacent to the stream and would suggest that some soils are available for salvage.

**Findings:**

The ability of the slope identified in TS6 to provide 1,312 cu yds of backfill is at question because of the steep, rocky terrain. Information provided in the application is not considered adequate to meet the minimum Environmental Soils Resource Information requirement of the regulations. Prior to approval, the Permittee must provide the following in accordance with:

- R645-301-231 and 232, a.** Provide a field description of the soils of the slope and the depth to bedrock to support the choice of this area as a source of backfill. **b.** Provide a summary of the soils to be encountered in the channel expansion area, based upon the results of a reconnaissance soil survey of the site.

**HYDROLOGIC INFORMATION**

Regulatory Reference: 30 CFR Sec. 773.17, 774.13, 784.14, 784.16, 784.29, 817.41, 817.42, 817.43, 817.45, 817.49, 817.56, 817.57; R645-300-140, -300-141, -300-142, -300-143, -300-144, -300-145, -300-146, -300-147, -300-147, -300-148, -301-512, -301-514, -301-521, -301-531, -301-532, -301-533, -301-536, -301-542, -301-720, -301-731, -301-732, -301-733, -301-742, -301-743, -301-750, -301-761, -301-764.

**Analysis:**

The slope adjacent to the Tank Seam access road will be disturbed and excavated for subsoils to use as backfill. Drawings provided indicate that approximately ten feet of fill will be removed from portions of the slope and that the highest reach of the excavation will be 50 feet. What measures will be taken to provide interim reclamation and stability of the slope during mining?

**Findings:**

Information provided in the application is not considered adequate to control erosion as required by the Regulations. Prior to approval, the Permittee must provide the following in accordance with:

**R645-301-742.113**, Indicate what measures will be taken during operations to provide interim reclamation and stability of the slope disturbed for fill in the TS6 Area.

## **RECLAMATION PLAN**

### **TOPSOIL AND SUBSOIL**

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

#### **Analysis:**

##### **Redistribution**

Reclamation of the culvert extension area will follow the plans described for area TS5 as described in Chapter 8 and Appendix 3L. Table 3L-1 Cut and Fill Summary has been adjusted to reflect the additional volume to be removed from TS5. The additional volume is recorded as 1,312 cu yd and represents the subsoil to be brought from TS6 to backfill the culvert.

#### **Findings:**

Information provided in the application is adequate to meet the minimum Reclamation topsoil and subsoil requirement of the regulations

#### **RECOMMENDATIONS:**

Further information should be obtained prior to approval.