

March 31, 2003

TO: Internal File

THRU: Karl R. Houskeeper, Sr. Reclamation Specialist/Team Lead

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

RE: South Portals, Genwal Resources, Inc., Crandall Canyon Mine, C/015/032-02A-2

**SUMMARY:**

Genwal Resources, Inc. proposes to add three portals along the south slope at the Crandall Canyon Mine. The area is on a steep hillside. To keep surface disturbance to a minimum, topsoil would be salvaged from the immediate vicinity of the portal cuts, 0.07 acres. The submittal indicates 333 cu yds of topsoil will be salvaged and stored for reclamation of the site.

The Crandall Canyon Mine was given approval on June 25, 1997 to cover native soils with geotextile fabric, rather than salvage the topsoil prior to culverting the stream. During this previous activity, 1.10 acres of stream channel and 1.53 acres of steep slope were covered with geotextile fabric. The procedure was to cover the in-place topsoil with geotextile fabric and to separate the geotextile from the fill with a layer of different colored fill (marker soil). This procedure should be followed again with the south portal construction.

The current proposal is to cover additional acreage on the slope with geotextile fabric in areas to be covered with construction fill.

This application presents an alternative scenario of tunneling to the coal seam from the existing pad. This alternative scenario would create about 2,000 cu yds of spoil. This spoil would be stored on the mine pad during operations and returned to the mine workings at reclamation. Genwal Resources has not determined which method of development they will use at this time.

TECHNICAL MEMO

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**TECHNICAL ANALYSIS:**

**GENERAL CONTENTS**

**COMPLETENESS**

Regulatory Reference: 30 CFR 777.15; R645-301-150.

**Analysis:**

The Permittee has made adjustments to the acreage identified on page 2-10. The subtotal sum for Areas Not Topsoiled is listed as 8.59 acres on page 2-10. The 13.6-acre surface facility and the 1.4 acres of topsoil storage sum to 15.00 acres.

**Findings:**

The information provided is completely accurate.

**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:**

Appendix 2-3B contains earlier surveys of the stream soils and south slope affected by the culvert installation (see Finalta.cul). Appendix 2-6 contains the survey conducted on August 18, 1998 by Mr. James Nyenhuis, ARCPACS Certification #2753, of the soils to be affected by the south portal development. The soils are in the Map Unit E, Lucky Star loam, 40 – 80% slopes. The soil is described as a loamy-skeletal, mixed Ustic Haplocryoll with a mollic epipedon surface layer seven inches thick overlain by a two-inch Oe horizon of semi-decomposed needles and twigs. A facsimile of the Nyenhuis soil survey map is attached in Appendix 2-6. Apparently, the facsimile is only a portion of the area surveyed, as described on page 6 of Appendix 2-6. There were four map units (Units C, D, E, and F) as well as reclaimed land and rubbleland-rock outcrop delineated on the survey map.

The proposed area for disturbance does fall within the facsimile provided. The area was all mapped as Unit E.

The soils information presented in the facsimile map of the survey is correctly interpreted as Map Unit E on Figure 8B Soil Salvage. Map Unit E has a two-foot layer suitable for salvage, according to the soil survey.

## **Findings**

The information provided meets the requirements of the Environmental Soil Resource Regulations.

# **OPERATION PLAN**

## **TOPSOIL AND SUBSOIL**

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

### **Analysis:**

#### **Topsoil Removal and Storage**

The proposed Belt Portal is located in the coal storage area where topsoil has previously been salvaged and stored. The Intake and Fan Portals are located in undisturbed ground and the Permittee will salvage one foot of surface soil prior to construction of the portal canopies. In all, 110 cu yds of topsoil will be salvaged and stored in the #4 Topsoil pile at the mouth of the canyon.

The area of topsoil removal is shown on Figure 8B. This area corresponds with Map Unit E described in Appendix 2-6 by Mr. James Nyenhuis, ARCPACS certification 2753. Mr. Nyenhuis indicates that the upper two feet of the soil is "entirely suitable for salvage...". Accordingly, the Permittee has planned for a twenty-four inch removal depth, amounting to 333 cu yds of topsoil to be salvaged and stored in the #4 Topsoil pile (page 2-6b of Section 2.22.4). The plan describes a replacement depth of 16 inches for the south portal location (page 2-10, Section 2.42).

Amendment Number 2 for Special-Use Authorization issued 07/29/97 by the U.S. Department of Agriculture Forest Service allows for the storage of approximately 3,000 cu yds of soil on 0.6 acres. The #4 topsoil pile was designed to accommodate 5,000 cu yds of soil with 3h:1v side slopes (page 2-8. MRP). Topsoil pile #4 currently holds approximately 4,756 cu yds. As-Built Plates 2-5, 2-5A, and 2-5B will be updated after topsoil salvage from the south portal construction is complete (page 2-8).

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The Crandall Canyon Mine obtained approval on June 25, 1997 to bury topsoil in-place beneath construction fill separated from the fill by a layer of different colored fill (marker soil) and geotextile fabric. Figure 8D shows the areas protected with geotextile. During culvert expansion, 2.5 acres of in-place topsoil were protected (page 2-5). Prior to construction of a ramp up to the site of the south portals, 17 feet above the existing storage yard pad, the topsoil on the steep south slopes will be covered with geotextile. A cross-section showing the procedure is shown in Figure 5-11. The area to be covered with geotextile during south portal construction is approximately 0.08 acres (page 2-5). The type of geotextile fabric is described in Appendix 2-7.

The construction fill will be derived from a mix of materials from the portal excavations and imported fill from Nielson Construction commercial borrow pit located in Huntington Canyon (page 2-6a). Laboratory analysis of the fill is provided in Appendix 2-8. Approximately 3,500 cu yds of fill will be required for ramp construction.

The gravel pit and hillside to be used as a source of fill was evaluated for the presence of noxious weeds by the Utah Department of Agriculture in May of 1997. The noxious weed *Agropyron repens* (l.) Beauv, quackgrass, was noted on the site, but the Agriculture Department representative, Carl Bott, noted that under Section R68-9-4, Number 8 a of the Utah Noxious Weed Act, "contaminated soil may be used for restrictive, non-planting purposes upon permission and under the direction of the County Weed Supervisor or a representative of the Utah Department of Agriculture." The condition of the gravel pit was re-evaluated for noxious weeds by a representative of the Utah Department of Agriculture in January 2003.

The submittal indicates on page 2-6b that, "All topsoil removal, salvage and storage will be over-seen, directed, and monitored by an independent soil scientist approved by the Division. A report of the topsoil salvage operation will be prepared by the soil scientist and added to the MRP upon completion..."

**Findings:**

The information provided meets the minimum requirements of the Regulations for topsoil removal and storage.

## 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:

#### **Acid- and Toxic-Forming Materials and Underground Development Waste**

This application presents an alternative scenario of tunneling to the coal seam from the existing pad (pages 2-6c, 5-30d, Figures 5-13a & b). This alternative scenario would create about 2,000 cu yds of spoil. This spoil would be stored on the mine pad during operations and returned to the mine workings at reclamation. Genwal Resources has not determined which method of development they will use at this time.

Should tunneling be implemented, the plan includes a means of monitoring the chemical characteristics of the mine waste stored on the mine pad during operations (Page 2-6C and 5-30d). Through characterization the Permittee and Division can determine whether the hydrologic balance is being protected (R645-301-731.111 and -731.121).

### Findings:

The information provided meets the requirements of the Regulations to protect the hydrologic balance.

## RECLAMATION PLAN

### TOPSOIL AND SUBSOIL

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

**TECHNICAL MEMO**

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**Analysis:**

**Redistribution**

The total disturbed area of the mine site is 14.18 acres of which 6.37 acres will receive twelve inches of topsoil at final reclamation (Page 2-10 and Appendix 5-22, page 5). An additional 8.63 acres will not receive topsoil during final reclamation as outlined in Section 2.42 of the submittal.

The south portal pocket cuts will be reclaimed in accordance with the MRP procedures described for the portal area (Appendix 5-22). The south portal cuts will be filled and receive one foot of topsoil replacement.

Soils beneath the ramp will be uncovered. Reclamation will follow the approved plan provided in Appendix 5-22.

**Findings:**

The information provided meets the minimum requirements of the regulations.

**RECOMMENDATION:**

The Division has previously approved the in-place storage of native soils on the steep slopes of the south side of Crandall Creek. The Permittee has provided the Division with information on the nature and quantity of the fill to be placed over the in-place native soils; the nature of the geotextile fabric; an evaluation of the presence of noxious weeds on the fill; as well as the acreage of the area to be covered with geotextile and protected in-place; and a commitment to provide As-Builts of Plates 2-5, 2-5A, and 2-5B. The Permittee plans to salvage twenty-four inches of topsoil from the south portal disturbance and replace sixteen inches to the site.

The facsimile of the soil survey map appeared to represent only a portion of the map described by the soil scientist. Figure 8B correctly represents the soil unit found in the area of the south portals as Map Unit E.

The amendment is recommended for approval.