



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

Michael O. Leavitt  
 Governor  
 Kathleen Clarke  
 Executive Director  
 Lowell P. Braxton  
 Division Director

1594 West North Temple, Suite 1210  
 PO Box 145801  
 Salt Lake City, Utah 84114-5801  
 801-538-5340  
 801-359-3940 (Fax)  
 801-538-7223 (TDD)

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December 12, 2001

**TO:** Internal File

**THRU:** Susan M. White, Senior Reclamation Specialist/Team Lead *AMW*

**FROM:** *WB* Priscilla W. Burton, Senior Reclamation Specialist/Soils

**RE:** Phase I Bond Release, Mountain Coal Company, Gordon Creek No. 2/7/8 Mines, C/007/016-BR01B

**SUMMARY:**

The Phase 1 bond release application was received on October 25, 2001. The Bond Release Directive Tech-006 (dated September 5, 2000) and Utah Regulations R645-301-880.100 through 880.310 guided my review of this submittal.

The No. 2 mine was originally disturbed in late 1969. No topsoil was salvaged. The portal was permanently sealed in 1985 (MRP, Section 3.5.4 and 3.5.3.1).

The No. 7 Mine was disturbed in 1983. Topsoil was saved from this disturbance. The No.7 Mine portal was sealed in December 1990.

The No. 8 Mine was disturbed in 1989 and topsoil was saved from this area. The No.8 Mine was sealed in December 1990.

The Mining and Reclamation Plan goes into great detail about soil sampling to be conducted prior to earthwork during reclamation. The Division is uncertain whether such sampling ever occurred. There is no reference in the Mining and Reclamation Plan as to the location of the soil sampling information.

The Division knows from the Mining and Reclamation Plan that there were 6,000 yds of topsoil and 8,000 cubic yards of subsoil stockpiled at the site. The Division does not know where the material was utilized and to what depth it was placed. The Division does not know the burial location unsuitable material.

TECHNICAL MEMO

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**TECHNICAL ANALYSIS:**

**BONDING AND INSURANCE**

**REQUIREMENT TO RELEASE PERFORMANCE BOND**

Regulatory Reference: 30 CFR Sec. 800.40; R645-301-880.

**Analysis:**

The disturbed area was 34.88 acres. The portion requested for Phase I Bond Release is 32.52 acres. (This excludes the 2.36 acres associated with the sediment pond and the Sweet's pond site.) The public notice accompanying this application indicates that backfilling and grading of the site occurred over a two-year period, from 1995 to 1997, with additional work conducted in 1999.

The application is required by R645-301-880.130 to include a notarized statement that the reclamation activities have been accomplished according to the approved reclamation plan.

Tech Directive 006 requests that technical information such as item II B 3 d and e (dates and depths of topsoil replacement) and II B 4 (overburden chemical analyses results), and II B 5 (evaluation of topsoil or substitute topsoil), and II B 6 (evaluation of the subsoil including replacement depths) is included in the Phase I bond release application.

Lacking such information in the bond release application, the Division assumes the following activities occurred during soil redistribution (from review of the Mining and Reclamation Plan, MRP):

- Compacted zones were eliminated by deep chiseling prior to final reclamation (MRP, Section 8-10 and Section 3.5.4.4)
- Fill at the Gordon Creek No. 7 mine site provided 3,684 cubic yards of topsoil and 8,000 cubic yards of subsoil for topsoil substitute material (MPR, Section 3.4.4, page 3-16).
- Topsoil from the No. 8 mine provided 2,514 cubic yards of soil (MRP, Section 3.4.4, page 3-17).
- Approximately 37,000 cubic yards of fill at the Gordon Creek No. 7 mine site was considered suitable topsoil substitute, with the exception of soils in the vicinity of sample site No. 3 (MRP, Section 8.6.2 and Section 8.8).
- The total fill required for the property was 198,386 cubic yards (MRP, Section 3.5.4.1, page 3-36).

TECHNICAL MEMO

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- Ninety days prior to reclamation, additional tests were run on the fill beginning with location No. 3 and extending outward, sampling every ten feet in four directions until suitable SAR values are obtained (MRP, Section 8.6.4, page 8-33).
- Special handling of the fill included laboratory analysis of any material suspected of having greater than 50% coal fines (MRP, Section 3.4.4, page 3-15).
- Unsuitable material was covered with a minimum of four feet of suitable material (MRP, Section 8.8).
- Additional soil sampling occurred prior to earthwork and soil redistribution as described in Section 3.5.5.1 and shown on Plate 3-1 (MPR, Section 8.9 and Section 3.5.5.1, page 3-50 and 3-51).
- Soil sampling occurred on 70% or greater slopes remaining during final reclamation (MRP, Section 3.4.4, page 3-17).
- At the fan portal, 12-18 inches of soil was removed prior to grading, sampled and replaced after grading (MRP, Section 3.5.4.4, page 3-47A).
- Topsoil was salvaged and placed on the pond embankments when the 2/7/8 sediment pond was created (MRP, Section 3.5.4.4, page 3-47A)

After reviewing the Mining and Reclamation Plan, the Division assumes the following measures were taken to achieve soil stabilization and erosion control:

- The final surface was left roughened by the bucket of a backhoe with depressions that are 2 to 3 feet in diameter (MRP, Section 8.8).
- The regraded surface was scarified to a depth of 18 inches (MRP, Section 3.5.4).
- Once the vegetation is deemed adequate, the sediment ponds will be removed and reclaimed (MRP, Section 3.5.3.3, page 3-31).
- Large rock fragments were utilized at the toe of the outcrop (to a depth of 3 feet) to enhance stability. The rocks were covered with one foot of soil. (MRP, Section 3.5.4, page 3-34).
- Erosion controls such as straw dikes were placed below the backfill areas (MRP, Section 3.5.4.1).
- Surface control for water from the seep near the top of the cut slope at Mine No. 7 was provided (MRP, Section 3.5.4.1, page 3-40).
- Seepage from the rock face at the No. 7 mine is controlled as it reaches the lower bench where it is intercepted and conveyed to the main restored channel via a rip-rapped ditch. Specifications of the ditch are as described (MRP, Section 3.5.4.3, page 3-45).
- A seep in the road cut just below the No. 8 Mine pad is controlled as described in the MRP, Section 3.5.4.1, page 3-43.
- A seep at the No. 8 Mine flows into a basin of native rock for wildlife watering (MRP, Section 3.5.4.1, page 3-43).
- Areas without topsoil cover received 1500 lbs/ac of organic matter (alfalfa) incorporated with gouging or hand tools (in steep areas). Steep areas also received tackifier and mulch as described in Section 3.5.5.3 (MRP, Section 3.5.5.1, page 3-51 and 3-52)

**TECHNICAL MEMO**

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- 2000 lbs/ac wood fiber mulch with 60 lbs/ac of tackifier will be placed on slopes less than 3H:1V.
- Erosion control mat will be used on slopes 2H:1V or steeper.

On severe slopes that do not receive topsoil, 2500 lbs/acre of mulch and 120 lbs/acre of tackifier will be applied.

**Findings:**

Information provided does not meet the Bond Release Application requirements of the Regulations. Prior to approval, the applicant must supply the following in accordance with:

**R645-301-880**, A certified statement that reclamation activities (backfilling and grading, topsoiling and subsoiling) occurred as described in the Mining and Reclamation Plan.

**R645-301-142**, Provide the Division with the results of the soil testing described in Section 3.5.1.1 of the Mining and Reclamation Plan.

**R645-542-320**, Indicate on the Final Reclamation (Phase I) Plate 3-7 the location of buried acid/toxic or other unsuitable material.

**R645-301-242**, Describe the approximate placement location and thickness of the 6,000 cu yds of topsoil and 8,000 cu yds of subsoil that was stored in piles at the Gordon Creek Mine No. 7 site.

**RECOMMENDATIONS:**

The Phase 1 bond release application does not include the technical information required as per item II B 3 d and e (dates and depths of topsoil replacement) and II B 4 (overburden chemical analyses results), and II B 5 (evaluation of topsoil or substitute topsoil), and II B 6 (evaluation of the subsoil including replacement depths) of the Bond Release Directive (Tech - 006, dated September 5, 2000). Neither does the Phase I bond release application include a notarized statement, certifying that reclamation activities were accomplished according to the approved reclamation plan as required by R645-301-880.130. Such a statement should be received before approval of Phase I bond release is granted. Without such a statement, the Division is uncertain about whether the reclamation was conducted as described in the Mining and Reclamation Plan.