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September 13, 2002

**TO:** Internal File

**THRU:** Wayne Western, Senior Reclamation Specialist/Team Lead *W+H*

**FROM:**  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-1

**SUMMARY:**

The Phase 1 bond release application was received on October 25, 2001. A Technical Analysis of the application was dated February 25, 2002. A second submittal of the application was received on August 2, 2002.

The Bond Release Directive Tech-006 (dated September 5, 2000) and Utah Regulations R645-301-880.100 through 880.310 guided my review of the August 2, 2002 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 No.2, No. 7 and No. 8 mine sites were graded in 1997. The No. 2 mine site was re-configured to a smooth surface by the landowner in 1998 and regraded with a rough surface (pocking) by the Permittee in 1999 (personal communication with Dan Guy on September 10, 2002).

Topsoil and subsoil was replaced on the No. 7 and 8 mines to a depth of twelve inches as outlined on Table 8-5A. Plate 3-7 Final Reclamation As-Built shows the burial location of coal mine waste. Approximately 20 Tons of waste were buried below four feet of fill in the location of the old topsoil pile (personal communication with Dan Guy on September 10, 2002).

**TECHNICAL MEMO**

The analytical information of soil samples collected in 1992 is located in Appendix 8-2. These samples were collected three years prior to the onset of reclamation. The MRP is quite specific about proposed soil sampling to be conducted 90 days prior to and during reclamation. The Phase I bond release application does not provide information on any additional soil sampling nor does it refute that the sampling was conducted. The information may be found in Appendix 8-3 which was submitted in 1996 with As-Built information for the reclamation construction, but which is missing from the Division's PIC and PFO copies of the MRP (personal communication with Dan Guy on September 23, 2002).

**TECHNICAL ANALYSIS:**

**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 includes a notarized statement that the reclamation activities have been accomplished in accordance with the Act and according to the approved reclamation plan as required by R645-301-880.130.

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 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. This information was not been included in the application, but the location of the information was provided in the accompanying deficiencies check list. The depth of topsoil replacement (required by items II B 3 d) can be found in the the MRP, Table 8-5A. The public notice contains information on dates of grading activity (required by item II B 3 e). Information required by item II B 4, 5, and 6 is found in the MRP, Appendix 8-2.

Table 8-5A summarizes information provided in the MRP. Table 8-5A was drafted in 1993 and incorporated into the MRP in July of 1995. This table describes the mass balance proposed during the Mining and Reclamation Plan, as follows:

- The Gordon Creek No. 7 mine site could provide approximately 3,684 cubic yards of topsoil and 8,000 cubic yards of subsoil for topsoil substitute material (see also MRP, Section 3.4.4, page 3-16).
- The No. 8 mine could provide approximately 2,514 cubic yards of topsoil (see also MRP, Section 3.4.4, page 3-17).
- Approximately 37,000 cubic yards of fill along the No. 2 mine road and in the No. 7 mine pad was considered suitable topsoil substitute, with the exception of soils in the vicinity of sample site No. 3 (see also MRP, Section 8.6.2 and Section 8.8).

The Mining and Reclamation Plan further states:

- The total fill required for the property is estimated at 198,386 cubic yards (MRP, Section 3.5.4.1, page 3-36).
- Unsuitable material will be covered with a minimum of four feet of suitable material (MRP, Section 8.8).
- 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)

The application does not include the technical information required as per item II B 4 (overburden chemical analyses results) of the Bond Release Directive (Tech - 006, dated September 5, 2000). For example, there are statements in the MRP suggesting that further soil sampling was conducted at the time of reclamation (1995 – 1997) that are not supported by the Phase I Bond Release application and must be clarified. The MRP indicates:

- 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).
- Additional soil sampling occurred prior to earthwork and soil redistribution as described in Section 3.5.5.1 and shown on Plate 3-1 (MRP, 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).

The Division's copy of the MRP may be missing Appendix 8-3 titled No. 8 Mine/Topsoil Piles/No. 2 Mine Sampling Results August 1996 which may have this information (personal communication with Dan Guy on September 23, 2002).

During a site visit on September 10, 2002, the following soil stabilization and erosion control measures were noted as described by the MRP:

TECHNICAL MEMO

- 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).
- 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).

The following erosion control practices could not be verified during the September 10, 2002 site visit, but were verified by conversation with Dan Guy on September 23, 2002:

- Compacted zones were eliminated by deep chiseling prior to final reclamation (MRP, Section 8-10 and Section 3.5.4.4)
- The regraded surface was scarified to a depth of 18 inches (MRP, Section 3.5.4).
- 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)
- 2000 lbs/ac wood fiber mulch with 60 lbs/ac of tackifier will be placed on slopes less than 3H:1V (Section 3.5.5.3, page 3-56).
- There were no slopes qualifying for erosion control mat use as described in Section 3.5.5.3, page 3-56.
- Once the vegetation is deemed adequate, the sediment ponds will be removed and reclaimed (MRP, Section 3.5.3.3, page 3-31).
- On severe slopes that do not receive topsoil, 2500 lbs/acre of mulch and 120 lbs/acre of tackifier will be applied (Section 3.5.5.3, page 3-56)

**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:

**R645-301-142**, Provide the Division with the results of the soil testing described in the Mining and Reclamation Plan Section 8.6.4, page 8-33; Section 3.4.4, page 3-15; Section 3.5.5.1 and shown on Plate 3-1; Section 8.9 and Section 3.5.5.1, page 3-50 and 3-51; Section 3.4.4, page 3-17; and Section 3.5.4.4, page 3-47A or indicate in the Phase I Bond Release application which of these sampling proposals were eliminated and amend the Mining and Reclamation Plan accordingly.

**RECOMMENDATIONS:**

The Phase I bond release application includes a notarized statement, certifying that reclamation activities were accomplished according to the approved reclamation plan as required by R645-301-880.130. However, the MRP in several sections refers to sampling of the subsoils and overburden at the time of reclamation. The location of this analytical information was not provided in the application. The Division's copy of the MRP may be missing Appendix 8-3 titled No. 8 Mine/Topsoil Piles/No. 2 Mine Sampling Results August 1996 which may have this information (personal communication with Dan Guy on September 23, 2002).