

January 16, 2003

TO: Internal File

THRU: Wayne Western Senior Reclamation Specialist Team Lead

FROM: Priscilla Burton, Environmental Scientist III/Soils

RE: Phase I Bond Release, Mountain Coal Company LLC, Gordon Creek 2,7 & 8 mine, C/007/016-BR01B

SUMMARY:

This review summarizes the information supplied to date for Phase 1 bond release. The Phase 1 bond release application was initially received on October 25, 2001, with addendums submitted on August 2, October 3, and October 23, 2002. Previous Division technical reviews were dated February 25 and October 16, 2002.

The Bond Release Directive Tech-006 (dated September 5, 2000) and Utah Regulations R645-301-880.100 through 880.310 govern this review of the information submitted to date.

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 Backfilling and Grading of the No. 7 mine was the subject of a Ten Day Notice (TDN) from the Office of Surface Mining in 1994 (TDN number X94-020-352-003 TV2). Approval of the reclamation and the accompanying Technical Analysis dated July 20, 1995 defended the Reclamation plan, but placed two conditions on the reclamation plan. The first condition was quickly resolved, according to correspondence dated October 12, 1995, and the second condition was restated for clarity as follows:

TECHNICAL MEMO

Condition #2

Backfilled slopes in the #7 Mine portal area shall be backfilled to the extent possible while maintaining a factor of safety of no less than 1.3 and no greater than 1.5. The operator shall determine, based on site conditions, where additional materials may be developed and placed as fill to further reduce or eliminate cut slopes associated with the reclamation plan. Slope measurements and stability analysis based on site conditions during construction shall be provided in conjunction with certified as-built reports or plans demonstrating stability and that backfilling of cut slopes to the extent possible during reclamation activities has been accomplished.

Soil samples were analyzed in 1992 (see Appendix 8-2) and again in 1995 and 1996 (see Appendix 8-3, No. 8 Mine/Topsoil Piles/No. 2 Mine Sampling Results, August 1996). The No.2, No. 7 and No. 8 mine sites were backfilled and graded in 1997. The No. 2 required regarding and surface roughening in 1999 after an incident where the site was re-configured to a smooth surface by the landowner in 1998 (personal communication with Dan Guy on September 10, 2002).

Topsoil (or substitute topsoil) was replaced on the No.2, No. 7 and 8 mines to a depth of twelve inches. 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).

The Permittee was the recipient of the Division's 1999 Earth Day Award. The Permittee was commended for the attention to detail in the drainage of water from the site.

An As-Built drawing (Plate 3-7) for the site was received in Amendments 98B and 99A. However, there is no record of the resolution of Condition #2 with the review of those amendments. This review attempts to resolve the Condition#2.

TECHNICAL ANALYSIS:

RECLAMATION PLAN

BACKFILLING AND GRADING

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 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. This statement is found in Appendix 2-8.

The Backfilling and Grading of the No. 7 mine was the subject of a Ten Day Notice (TDN) from the Office of Surface Mining in 1994 (TDN number X94-020-352-003 TV2). Approval of the reclamation and the accompanying Technical Analysis dated July 20, 1995 defended the Reclamation plan, but placed two conditions on the reclamation plan. The first condition was quickly resolved, according to correspondence dated October 12, 1995, and the second condition was restated for clarity as follows:

Condition #2

Backfilled slopes in the #7 Mine portal area shall be backfilled to the extent possible while maintaining a factor of safety of no less than 1.3 and no greater than 1.5. The operator shall determine, based on site conditions, where additional materials may be developed and placed as fill to further reduce or eliminate cut slopes associated with the reclamation plan. Slope measurements and stability analysis based on site conditions during construction shall be provided in conjunction with certified as-built reports or plans demonstrating stability and that backfilling of cut slopes to the extent possible during reclamation activities has been accomplished.

Plate 3-7 indicates that the slope in the vicinity of the #7 mine is 4.5h:1v or about 22%. Photographs in the Division records from 1995 compared with recent photographs of the area indicate that the highwall is buried approximately 45 feet in the fill as planned, suggesting that burial to a depth of 60 feet with additional material was not achieved. The September 11, 1996 inspection report verifies that, "The fill material is built up at the #7 Mine to the MSHA bench. This elevation for backfill was agreed to by the applicant and regulatory authorities to establish an acceptable stability factor." Consequently, the original plans found in the MRP support the current configuration and stability of the highwall.

In fact, in a March 7, 1997 response to the UDOGM Highwall Survey conducted in conjunction with the DOGM/OSM Evaluation team, Mr. Dan Guy outlined the location of the supporting information for highwall reclamation, as follows:

TECHNICAL MEMO

- Volume 1, pages 3-5, 3-14, 3-15, 3-17, Section 3.5.3 Final Abandonment; Section 3.5.4 Backfilling and Grading Plans; Section 3.5.4.1 Removal or Reduction of Highwalls, Portal Face-ups and Cut Slopes;
- Appendix 3-1 Stability Investigation for Gordon Creek No. 7 Mine Highwall and Road Construction;
- Appendix 3-7 Gordon Creek No. 7 Mine, Highwall Stability Analysis and Reclamation Limits; and
- Appendix 3-8, Gordon Creek No.2 Mine Highwall Stability Analysis and Reclamation Limits.

Condition #2 required the submittal of additional information if plans varied from those described in the Mining and Reclamation Plan. Backfilling and grading plans did not vary from the plans described and therefore no additional information has been submitted to the Division.

Findings:

Verification that the work was conducted according to plan was found in the Division records and statements from the Permittee and therefore meets the minimum requirements for Phase 1 bond release under R645-301-880.310.

TOPSOIL AND SUBSOIL

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

Analysis:

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Technical 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. The location of the information was provided in the deficiencies checklist that accompanies the application, as follows:

- The depth of topsoil replacement was twelve inches (MRP, Table 8-5A).
- 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.
- Evaluation of topsoil and subsoil is found in the MRP, Appendix 8-2 and Appendix 8-3.

Table 8-5A summarizes information provided in the MRP. Table 8-5A was drafted in 1993, revised in 1996, reviewed and approved November 26, 1996, but never incorporated into the MRP. The technical review of the 1996 amendment (dated October 28, 1996) clarifies that

topsoil salvaged from the No. 7 Mine was used at the No. 2 Mine; the No. 8 Mine topsoil was used in the reclamation of the No. 7 Mine; Subsoil salvaged from the No. 8 Mine was returned to the No. 8 Mine as substitute topsoil.

The revised 1996 Table 8-5A has been resubmitted to the Division with the Phase I Bond Release application. Table 8-5A describes origin of the topsoil and substitute topsoil for the site as follows:

- The No. 7 mine site provided 3,684 cubic yards of topsoil and 8,000 cubic yards of subsoil for topsoil substitute material (see also MPR, Section 3.4.4, page 3-16).
- The No. 8 mine provided 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. (see also MRP, Section 8.6.2 and Section 8.8).

Chemical analysis of the overburden and substitute topsoil is found in Appendix 8-3 of the application. Soil sampling was conducted in 1995 and 1996 as described in Section 3.5.5.1, pages 3-50 and 3-51. Appendix 8-3 does not report depth of sampling and location of sampling, but a Division field report dated July 25, 1996 describes the 1996 work, in detail as follows:

- Samples labeled "No 8 Mine ss#1 -#5" were taken from the surface eight inches of the backfilled and graded No. 8 Mine site.
- Samples labeled OP #1 and OP #2 were taken from the office pad surface. They were about 1 to 1.5 feet deep.
- Samples labeled road #7 mine were taken from a pit dug on the outward slope of the road above the #2 mine pad.

Sample locations for the remaining samples in 1995 and 1996 are self-explanatory from the sample identifications. It should be noted that four containers labeled "GC No 7" were from slopes greater than 70% in the No. 7 Mine vicinity as required by MRP, Section 3.4.4, page 3-17 (personal communication with Mr. Dan Guy on January 14, 2003).

Appendix 8-3 indicates that the material sampled was suitable as a substitute topsoil, but deficient in potassium. A field report dated August 21, 1996 indicates that the Division recommended an application of 16-16-8 fertilizer during reclamation.

During regrading of the site, topsoil was salvaged and placed on the pond embankments when the new 2/7/8 sediment pond for the reclaimed site was created (MRP, Section 3.5.4.4, page 3-47A)

TECHNICAL MEMO

Findings:

Verification that the work was conducted according to plan was found in the Division records and statements from the Permittee and therefore meets the minimum requirements for Phase 1 bond release under R645-301-880.310.

HYDROLOGIC INFORMATION

Regulatory Reference: 30 CFR Sec. 784.14, 784.29, 817.41, 817.42, 817.43, 817.45, 817.49, 817.56, 817.57; R645-301-512, -301-513, -301-514, -301-515, -301-532, -301-533, -301-542, -301-723, -301-724, -301-725, -301-726, -301-728, -301-729, -301-731, -301-733, -301-742, -301-743, -301-750, -301-751, -301-760, -301-761.

Analysis:

Hydrologic Reclamation 

Based upon a conversation with Mr. Dan Guy on January 14, 2003, the Division understands that the sampling of the fill in the location of No. 3 (Plate 3-1) was not conducted since the suspect material was buried deep in the fill. No samples of coal waste were reported to the Division (as required by MRP, Section 3.4.4, page 3-15). The Division understands from talking with Mr. Dan Guy that the majority of the coal waste was removed from the site to C.V. Spur during final reclamation. However, field reports and inspection reports on file at the Division for the years 1995 and 1996 indicate that a substantial amount of coal was mixed with soil and placed against the highwall of the No. 2 Mine.

Backfilling at the site required a total of 198,386 cubic yards (MRP, Section 3.5.4.1, page 3-36). Mr. Guy maintains that all unsuitable material was covered with a minimum of four feet of suitable material (as stated in the MRP, Section 8.8).

Findings:

Verification that the work was conducted according to plan was obtained from a certified statement from Permittee and therefore meets the minimum requirements for Phase 1 bond release under R645-301-880.310.

STABILIZATION OF SURFACE  **EAS**

Regulatory Reference: 30 CFR Sec. 817.95; R645-301-244.

Analysis:

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

- 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. (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 were verified by Division field reports dated August 21 and October 23, 1996 and through conversation with Dan Guy on September 23, 2002:

- 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 were placed on slopes less than 3H:1V (Section 3.5.5.3, page 3-56).
- On severe slopes that did 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)
- 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). (Work on the sediment ponds was completed in the fall of 2002.)

TECHNICAL MEMO

Findings:

Verification that the work was conducted according to plan was found in the Division records and statements from the Permittee and therefore meets the minimum requirements for Phase 1 bond release under R645-301-880.310.

MAPS, PLANS, AND CROSS SECTIONS OF RECLAMATION OPERATIONS



Regulatory Reference: 30 CFR Sec. 784.23; R645-301-323, -301-512, -301-521, -301-542, -301-632, -301-731.

Analysis:

Reclamation Backfilling And Grading  ps

Plate 3-7 “Gordon Creek No.2/7/8 Mines Final Reclamation (Phase 1)” dated July 2002 accompanies this submittal. This version of Plate 3-7 shows the approximate location of the coal mine waste burial. However, coal mine waste was mixed with soil throughout the site of Mine #2 and used as fill against the highwall and cut slopes according to statements from Division technical staff and according to the record as noted in the July 23, 1995 field visit report and inspection reports for the 1996 field season (verified by photographs).

Findings:

The information provided meets the minimum requirements of the regulations.

BONDING AND INSURANCE REQUIREMENTS

Regulatory Reference: 30 CFR Sec. 800; R645-301-800, et seq.

Analysis:

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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 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. This statement is found in Appendix 2-8.

Findings:

Verification that the work was conducted according to plan was found in the Division records and statements from the Permittee and therefore meets the minimum requirements for Phase 1 bond release under R645-301-880.310.

RECOMMENDATIONS:

The application meets the minimum requirements for approval of Phase 1 bond release according to the requirements of Tech Directive 006.