

March 18, 2003

TO: Internal File

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

RE: Soil Movement and Cut/Fill balance and Blind Canyon Seam analysis, CO-OP Mining, Bear Canyon Mine, C015025-AM03B

SUMMARY:

On January 27, 2003, the Division received a permit amendment describing the transfer of 1,000 cu yds of soil from the Blind Canyon tunnel development (TS 15) to the Tank Seam reclamation site for use as fill. This transfer of material started a ripple in the cut/fill reclamation plans. There are no changes to the total amount of fill required, only the source of fill. A source of fill for the new Tank Seam portals is the Tipple yard. Testing of the Tipple yard soils prior to transfer to the Wild Horse Ridge Tank seam pad is requested.

Blind Canyon seam sample RFM-1 was submitted with this amendment. The analyses will be included in Appendix 6-C. The Blind Canyon seam coal is acidic and also toxic due to its Boron content. Tank Seam sample RFM-5 is in the main entry and will be taken in 2003.

TECHNICAL ANALYSIS:

GENERAL CONTENTS

ENVIRONMENTAL RESOURCE INFORMATION

Regulatory Reference: Pub. L 95-87 Sections 507(b), 508(a), and 516(b); 30 CFR 783., et. al.

GEOLOGIC RESOURCE INFORMATION

Regulatory Reference: 30 CFR 784.22; R645-301-623, -301-724.

Analysis:

Section 3.5.8.1 of the MRP indicates that samples will be taken in new sections during future development where indicated on Plate 3-4. Samples will be analyzed according to Table 3K-1 and results will be included in Appendix 6-C.

Data obtained from borehole analysis in 1982 of both the Tank Seam and the Blind Canyon Seam roof/floor and partings indicates that waste rock from the Blind Canyon Seam has little if any calcium carbonate content and will be acid-forming.

Sampling locations RFM 1, 2 and 3 are in the #3 Blind Canyon seam U 024316 as indicated on Plate 3-4a.pdf. Samples RFM-1 of the Blind Canyon coal, ceiling and floor were taken in September 2002. The analyses confirm that the Blind Canyon coal is acidic (pH 3.7 and a no carbonate content or neutralizing potential). The Blind Canyon coal is also toxic due to the Boron content (10.6 ppm). These characteristics are not present in the ceiling and floor.

Samples RFM 2 and 3 of the Blind Canyon seam will be taken in 2016 and 2021, respectively. (A previous sample site in the Hiawatha Seam on Wild Horse Ridge (Plate 3-4B, 2001 Annual Report) was also designated RFM -3, but this site is in an area mined in 1994.)

Sample site RFM-4 is in the Tank Seam in Mine #1 and was taken in 1995 (Email communication with Mark Reynolds on September 6, 2002). Information from this sample is found in Appendix 6C pages 23-25.

Sample sites RFM-5, 6, and 7 are also in the Tank Seam, U-38727 lease area (Plate 3-4c.pdf). Sample RFM-5 is in the main entry and will be taken in 2003. Sample RFM-6 will be taken in 2008. Sample RFM-7 will be taken in 2020.

Section 6.5.4.1 (page 6-21) of the submittal indicates that the Permittee will again analyze the #3 Blind Canyon Seam and the #4 Tank Seam for acid/toxic-forming potential as soon as the mine progresses to the sample points shown on Plates 3-4a &b.

Findings:

The information provided meets the requirements of the Regulations for geologic analysis.

OPERATION PLAN

TOPSOIL AND SUBSOIL

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

Analysis:

The topsoil survey for the area is found in Appendix 8-G. The soils map in App 8-G places the location in Datino-Guben soils. Site N21 is very close to the area to be widened. The field notes indicate that site N21 is stony and bouldery with a weak Bk horizon. This area should support the salvage of eight inches of topsoil (A horizon). It's possible that the 200 ft X 5ft area could generate 660 cu ft of topsoil or 24 cu yds.

The Permittee will provide as-builts of the topsoil stockpiles including final volumes at the completion of the construction (personal communication with Mark Reynolds on March 18, 2003).

Findings:

The information provided meets the requirements for topsoil salvage and protection.

RECLAMATION PLAN

BACKFILLING AND GRADING

Regulatory Reference: 30 CFR Sec. 785.15, 817.102, 817.107; R645-301-234, -301-537, -301-552, -301-553, -302-230, -302-231, -302-232, -302-233.

TECHNICAL MEMO

Analysis:

General

Plates 8-5 C, E & G illustrate the location of reclamation areas TS 5, TS 7, TS 8, TS 11, TS 15 and TS 17 under discussion in this amendment.

Approximately 1,000 cubic yards of material excavated from the construction of the Blind Canyon Portal tunnels (TS 15) was taken to the old Tank seam pad (TS 11) for use as fill in the ongoing reclamation of that pad. The fill has been covered with topsoil and seeded.

Backfill over the tunnel under the Blind Canyon pad (TS 15) will come from the Wild Horse Ridge Tank Seam Access Road and TS 17.

The existing plan called for 1,000 cu yds of soil from TS 8 to be used in the reclamation of TS 11. This need was filled by the material from the Blind Canyon tunnel excavation, as reflected on page 3H-10 and 3L-73 of the submittal. As a result, TS 8 has 1,000 cu yds more available as fill and will require only 952 cu yds of imported fill from TS 5.

The Blind Canyon tunnel area (TS 15) was backfilled with 1,000 cu yds of soil from the Wild Horse Ridge TS 17 area where an additional cut to the south of ditch D 42U and Catch Basin 3 will widen the pad by five feet (shown on Plate 2-4G). The submittal indicates that any additional material generated from the Wild Horse Ridge development will be hauled to TS-7 and TS-8 for reclamation of those areas. So the use of TS 5 soils may be reduced even further.

This will create a 1,000 cu yd deficit in TS 17. The cuts of TS 17 will be partially filled with 1,000 cu yds of material from the TS 5 (page 3L-13 and 3P-7). Wording on pages 3P-7 and 3O-13 was discussed with Mark Reynolds on March 11, 2003 and will be modified slightly to provide clarity.

The hydrologic balance of TS 17 must be protected as discussed below under Reclamation Plan Hydrologic information.

Findings:

The information provided meets the requirements of the Backfilling and Grading Reclamation plan, but is not entirely clear. Prior to approval, the Permittee must provide the following in accordance with:

R645-301-121.200, Please rewrite the wording on pages 3O-13 to indicate that the TS-17 material will be used to backfill **the tunnel in area TS15** and rewrite the wording on page 3P-7 to indicate that **replacement** of the TS 17 material (was used in areas TS-15, TS-7, and TS-8) will come from TS-5.

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:

Acid and toxic-forming materials

The submittal describes the placement of soils from the Tipple yard as fill in the Wild Horse Ridge reclamation area TS17. To protect the hydrologic balance this material should be tested for acid/toxic parameters described in Table 3K-1 prior to being moved from TS 5.

Findings:

The information provided is not adequate to protect the hydrologic balance as required by the Regulations. Prior to approval, the Permittee must provide the following in accordance with:

R645-301-731.311, To protect the hydrologic balance, the plan should indicate that the material to be transferred from TS 5 to TS 17 for use as fill will be tested for acid/toxic parameters such as those outlined in Table 3K-1. The number of samples to be drawn per unit volume and the parameters to be tested should be indicated.

RECOMMENDATION:

A testing plan for use of the TS 5 (Tipple yard) material at the TS 17 (new Tank Seam) reclamation area is requested.