

TECHNICAL MEMORANDUM

Utah Coal Regulatory Program

June 13, 2013

TO: Internal File

THRU: James Owen, Team Lead *JO*

FROM: Priscilla Burton, Environmental Scientist III/Soils. *PWB by SAS*

RE: Expansion of Lift #5 at Waste Rock Disposal Site, Canyon Fuel Company, LLC, Sufco Mine, C/041/0002, Task ID #4335

SUMMARY:

The original design capacity of the 4.5 acre waste rock site was 204,700 tons (Vol. 3, Sec. 4.2). In August 2005, twenty percent of that capacity remained; the site held 163,748 tons. Information provided in the application indicates the design capacity of the site has already been exceeded. This proposal removes much information from the plan and provides few details to allow the Division to evaluate the plan. In accordance with:

R645-301-121.100, Please provide current information for the final acreage of waste rock storage; the approximate final dimensions of the redesigned Lift #5, the maximum height of Lift #5, and the final design capacity of the redesigned site.

R645-301-122, Please reference the location of boring B-1.

R645-301-141, Topographic final contours for terraces and slopes are shown on Map 2 v 5, but are not described in the legend. Compare with similar lines shown on earlier versions of this map which are explained in the legend and update the legend on Map 2 v 5 with this information.

The original sampling plan entailed four quarterly samples during periods of deposition. This plan was based upon an annual average of 10,000 tons hauled/year and would result in an average of 1 sample/2,000 tons hauled. With such variable placement described annually (27,135 tons in 2012, Vol 3, p.3-12), the sampling plan should be redefined based on tonnage.

R645-301-553.252, The sampling plan should be redefined based on tonnage, rather than quarterly. A suggested plan is one composite grab sample for every 5,000 tons hauled. A density of 1.2 tons/ yd³ is implied by a statement in Vol 3, p. 3-12. Please verify this density in conjunction with the sampling plan.

TECHNICAL MEMO

TECHNICAL ANALYSIS:

OPERATION PLAN

TOPSOIL AND SUBSOIL

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

Analysis:

Topsoil Removal and Storage

Vol. 3 p. 2-9 describes removal of 18 inches from the 0.54 acre expansion and either live haul to Lift #5 or stockpiling on Topsoil Storage site No. 2. The estimated volume of topsoil to be salvaged is 1,300 yd³s. Boring B-1 is discussed, but the location of the log is not referenced.

Findings:

R645-301-122, Please reference the location of boring B-1.

SPOIL AND WASTE MATERIALS

Regulatory Reference: 30 CFR Sec. 701.5, 784.19, 784.25, 817.71, 817.72, 817.73, 817.74, 817.81, 817.83, 817.84, 817.87, 817.89; R645-100-200, -301-210, -301-211, -301-212, -301-412, -301-512, -301-513, -301-514, -301-521, -301-526, -301-528, -301-535, -301-536, -301-542, -301-553, -301-745, -301-746, -301-747.

Analysis:

Refuse Piles

The waste rock site has been contemporaneously reclaimed (Vol. 3, Section 3.4). Map 4 of Volume 3, illustrates the status of reclaimed, active and topsoil salvage areas at the refuse site as of August 2005. Map 4 shows the first three cells reclaimed. Cell #3 of the waste rock site was seeded in November 1998 (email from Mike Davis 11/19/2009). Cell #4 was started in 1998 and completed in the fall of 2009. Cell #4 has been topsoiled and gouged and was seeded in the fall 2009 (see photographs in image folder 11182009). Vol. 3, Section 3.2.4 specifies a thirty inch cover depth over the waste rock site which was confirmed for cell #4 during a site inspection on 11/18/2009. Cell 5 or Lift #5 is the final remaining cell.

TECHNICAL MEMO

The waste rock disturbed area was enlarged from 7.223 acres to 10.23 acres with the addition of subsoil from the west lease portal development and two additional topsoil stockpiles (Vol 3, Sec. 4.3 and Vol 1, p. 1-12). The current proposal would increase the waste rock lift area by only 0.5 acres to 10.76 acres (Vol 1, p. 1-12), and would change the acreage of waste rock storage from 4.5 acres of waste rock storage (Vol 3, Sec. 3.4) to 5 acres. The acreage of waste rock storage has been removed from the narrative in Sec. 3.4. The approximate dimensions of each waste rock cell (1.5 acres or 300 ft x 200 ft) is removed from Vol 3, sections 3.3. and 4.2. The maximum height of the waste rock fill (30 ft.) is removed from Vol. 3, Sec. 3.1.4.

The design capacity of the 4.5 acre waste rock site was 204,700 tons (Vol. 3, Sec. 4.2). In 2005 the site was surveyed and 163,748 tons of waste rocks were known to be in storage at the site. This proposal states that the average annual weight of waste rock transported to the site from 1996 to 2012 has been 5,180 tons/year (Vol 3. p. 3-12). Since 1996, that calculates to 220,000 tons, which exceeds the existing design capacity.

This amendment proposes to enlarge the site by only a half an acre (Vol. 1, p. 1-12). The increased capacity achieved is not stated. Map 2 shows final contours of the reclaimed cells 1 through 4. The addition of 0.5 acres to Lift #5 would increase its total capacity slightly from the original design wherein Lift #5 had 1/5th of the total capacity (or 40,000 tons). The added capacity is not disclosed.

Findings:

Information provided in the application indicates the design capacity of the site has already been exceeded. This proposal removes much information from the plan and provides few details to allow the Division to evaluate the plan. In accordance with:

R645-301-121.100, Please provide current information for the final acreage of waste rock storage; the approximate final dimensions of the redesigned Lift #5, the maximum height of Lift #5, and the final design capacity of the redesigned site.

R645-301-141, Topographic final contours for terraces and slopes are shown on Map 2 v 5, but are not described in the legend. Compare with similar lines shown on earlier versions of this map which are explained in the legend and update the legend on Map 2 v 5 with this information.

TECHNICAL MEMO

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

The original sampling plan entailed four quarterly samples during periods of deposition. This plan was based upon an annual average of 10,000 tons hauled/year. With such variable tonnages described annually (27,135 tons in 2012, Vol 3, p.3-12), the Division requests the sampling plan be redefined based on tonnage, rather than quarterly. A suggested plan is one composite grab sample for every 5,000 tons hauled. During periods of no deposition, no sampling would be required as is currently the case.

A density of 1.2 tons/ yd³ is implied by the statement, "The original fill volume was estimated at 10,000 tons or 8,200 cubic yards per year." (Vol 3, p. 3-12). Please verify this density.

The 2012 Annual Report contains a summary of all chemical analysis of the material stored in at the waste rock site since 2005. The earliest waste rock analyses are located in Vol 3, Exhibit 5 and in Appendix 6-2 (confidential). Vol 3.

Findings:

The original sampling plan entailed four quarterly samples during periods of deposition. This plan was based upon an annual average of 10,000 tons hauled/year. With such variable placement described annually (27,135 tons in 2012, Vol 3, p.3-12), the Division requests the sampling plan be redefined based on tonnage, rather than quarterly.

R645-301-553.252, The sampling plan should be redefined based on tonnage, rather than quarterly. A suggested plan is one composite grab sample for every 5,000 tons hauled. A density of 1.2 tons/ yd³ is implied by a statement in Vol 3, p. 3-12. Please verify this density in conjunction with the sampling plan.

RECOMMENDATIONS:

The application is not recommended for approval. Subsoil as-built deficiency response included with this application and also submitted under task #4368, will be reviewed under task #4368.

O:\041002.SUF\WG4335\WG4335pwb.doc