

TECHNICAL MEMORANDUM

Utah Coal Regulatory Program

December 15, 2009

TO: Internal File

THRU: Jim Smith, Environmental Scientist III/Permit Supervisor *JS 12/16/09*

FROM: April A. Abate, Environmental Scientist II *aaab 12-16-2009*

RE: SUFCO Midterm Review, Canyon Fuel Company, LLC. SUFCO Mine, C/041/002, Task ID #3407

SUMMARY:

The Division initiated a mid-term permit review of the SUFCO Mine mining and reclamation plan (MRP) on September 21, 2009. An inspection of the East Spring Canyon surface facilities, the roadside waste rock facility, the new sediment pond location, and the three areas of disturbance in Link Canyon was made by the Division of Oil, Gas and Mining (the Division) technical review team on November 18, 2009.

The analysis also includes a review of selected sections of Chapters 6 & 7, Geology and Hydrology the MRP and the annual list of hydrology-related commitments to ensure that the MRP is up-to-date and compliant with the 645 Coal Rules.

The SUFCO MRP appears to contain updated information on sediment control and siltation structures. The annual commitments to use the best technology currently available (BTCA) to prevent additional contributions of suspended solids to stream flows outside of the permit area and to provide climatological data have been provided in the 2008 Annual Report.

RECOMMENDATIONS:

The midterm review did not find any geology or hydrology-related deficiencies. Furthermore, the Permittee has complied with their hydrology-related annual commitments.

TECHNICAL MEMO

TECHNICAL ANALYSIS:

OPERATION PLAN

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:

Water-Quality Standards And Effluent Limitations

The SUFCO Mine has three UPDES (Utah Pollution Discharge Elimination System) locations permitted by the Utah Division of Water Quality (DWQ): UPDES 001 – emergency mine discharge point; UPDES 002 – discharge from the East Spring Canyon sediment pond; and UPDES 003 – discharge from the underground workings into the North Fork of Quitcupah Creek. The Utah Pollutant Discharge Elimination System (UPDES) permit does not have effluent limitation standards for effluent flow discharge rates. Mine water that discharges to the North Fork of Quitcupah Creek averages a flow rate of 2,900 gallons per minute. All other water quality parameters were reviewed for the beginning of this permit term and have been in compliance with the UPDES permit. It should be noted that the Permittee is currently in the process of relocating outfall location UPDES 002 – Discharge from the East Spring Canyon sediment pond. The new location will be at the discharge point of the overflow sediment pond (approximately 800 feet further south of the current location). Once approval is granted from the Utah Department Environmental Quality - Water Quality Division, the UPDES permit will be amended to reflect the change.

Diversions: General

All diversions within the permit area are temporary and have been designed to handle the 10-year/6-hour precipitation event of 1.3 inches. Diversions within the permit area consist of drainages (diversion ditches) and culverts. Diversions can be found at the facility area in East Spring Canyon, at the portal and substation areas in Link Canyon, and at the waste rock disposal site. According to the MRP, all diversions have been designed, located, constructed, maintained, and used (among other things) to prevent, to the extent possible, additional contributions of suspended solids to stream flow outside the permit area.

Diversions were spot checked during the midterm inspection that occurred on November 18, 2009. Most of the silt fencing observed in the drainages alongside the roads appeared to be satisfactory. There were areas in Link Canyon about 1 mile below the substation along the road where some minor maintenance to the silt fencing was needed.

Sediment Control Measures

Sediment control measures are designed to prevent, to the extent possible, additional contributions of sediment to stream flow or to runoff outside the permit area; meet the more stringent of applicable State or Federal effluent limitations; and, minimize erosion to the extent possible. As stated in Section 7.3.2, Sediment Control Measures, the structures used for the runoff control plan for the permit area include disturbed and undisturbed area diversion channels, sedimentation ponds, containment berms, silt fences, and road diversion culverts. As outlined in the MRP text of Sections 7.3.2 and 7.4.2, and the calculations and design of sediment control structures presented in Appendices 7-8 through 7-15, these sediment control measures are designed using industry standards and what is generally considered the best technology currently available (BTCA).

Siltation Structures: General

Siltation structures within the permit area consist of the concrete sediment trap, the main sedimentation pond located at the existing facility, and a sedimentation pond located at the waste rock disposal site. A new overflow sediment pond has been approved by the Division on October 12, 2009 and will undergo construction in spring of 2010. The operation and maintenance of the facility sedimentation ponds are described in Section 7.3.2.2 of the MRP and in Volume 3 of the MRP for the waste rock disposal site sedimentation pond.

Acid- and Toxic-Forming Materials and Underground Development Waste

Waste rock material quarterly data was submitted as part of the 2008 Annual Report. The report indicated elevated levels of boron and the sodium absorption ratio (SAR). Boron concentrations of the material exceeded the 5.0 parts per million (ppm) standard for the 3rd quarter of 2008. Based on this information, an analysis of the groundwater samples from the monitoring wells in the vicinity of the waste rock area was performed. SAR levels are not a concern in groundwater, as it is mainly a measurement of salinity concentrations in soil that affect vegetation. Boron does not have any state-established groundwater numerical standard and none of the samples collected from wells in 2008 had detectable concentrations of selenium. At this time, there does not appear to be a concern for toxic compounds leaching into the groundwater from the waste rock pile.

TECHNICAL MEMO

Water Monitoring: Climate Data

The Permittee has committed to providing yearly climatological data in their annual reports. The climate data is used to aid in determining the effects of drought or wet conditions on runoff, stream flow, and groundwater recharge in the region. Climate data was included in the 2008 Annual Report. Peterson Hydrologic LLC submitted a report comparing the discharge rates of sample stations located in Box Canyon Main Fork and East Fork to the regional Palmer Hydrologic Drought Index (PHDI) and data from nearby weather stations. In addition, SUFCO also submitted a print out of daily temperature and precipitation data for 2008. According to the report, the region was in a period of mild drought during 2008 and discharge rates from streams located in the Pines Tract were reflective of climate conditions.

Findings:

The SUFCO MRP appears to contain updated information on sediment control and siltation structures. The commitments to use the BTCA to prevent additional contributions of suspended solids to stream flows outside of the permit area and to provide climatological data have been provided in the 2008 Annual Report. BTCA means that the operator is employing the best methods available at any one time.

RECOMMENDATIONS:

The midterm review did not find any geology or hydrology-related deficiencies. Furthermore, the Permittee has complied with their hydrology-related annual commitments.