

2

#3580
R

TECHNICAL MEMORANDUM

Utah Coal Regulatory Program

July 20, 2010

TO: Internal File

THRU: James Smith, Permit Supervisor *DC 07/27/10*

FROM: April A. Abate, Environmental Scientist II *CCO 7-26-2010*

RE: Proposed 2010 Mitigation Plan for the North Water Springs Area, Task ID #3580, Canyon Fuel Company, LLC, SUFCO Mine, C0410002

SUMMARY:

This Technical Memo addresses the hydrologic aspects of the plan submitted by Canyon Fuel Company, LLC, to attempt water replacement that has been lost in the North Water Spring area located in the Pines Lease section of the SUFCO permit boundary. Pines 105, 310, 311, and Joes Mill Pond have undergone a loss of water and subsequent riparian habitat as a result of underground longwall mining activities that occurred in 2005. Subsidence resulted from mining and caused cracking in the Castlegate sandstone that represents the overburden bedrock. These cracks have subsequently caused select springs in the area to go dry. The United States Forest Service (USFS) issues grazing permits to the Emery County Stockgrowers Association within the North Water Area. Both entities have concerns about the future water supply for the cattle that graze in the region.

The Division issued a Material Damage finding to Canyon Fuel Company in 2006 and requested a permanent mitigation plan in a letter sent to Canyon Fuel Company dated May 22, 2006. The finding of Material Damage was for damage to spring Pines 105 (North Water Spring) causing a diminution of water due to longwall mining of the SUFCO Mine's 5L panel. SUFCO has responded with prior mitigation proposals. The previous proposal was the installation of five monitoring wells in the North Water Canyon in the fall of 2009 with hopes of finding a sustainable water source to replace the loss of water at Pines 105, Pines 310, 311 and Joes Mill Pond. Based on slug test data, groundwater derived from these wells was determined to not be a sustainable source for the cattle troughs that depend on a water supply.

The current plan submitted proposes to pipe water from a spring producing approximately 20 gpm located 1.5 miles away from the North Water area. SUFCO is making good faith efforts to conceive a permanent mitigation solution for water replacement within the Pines Tract.

Once the following deficiencies are resolved, the plan should be approved for implementation as soon as possible:

- **[R645-301-731; 731.224.1; 731.750; 800]:** Water Rights: The plan does not indicate that Canyon Fuel Company has a right to use of water from spring M-SP89 to divert for stock watering purposes. Prior to obtaining water from the spring, Canyon Fuel Company must demonstrate this right;
- **[R645-301-721]:** The scale on Figure 1 was shown as 1" = 1,000 feet. However the scale was not correct when measured and will need to be resubmitted when the final copy is incorporated into the MRP.
- **[R645-301-760]:** The application in its present form does not address who will operate and maintain the pump system once the mine goes into reclamation phase. The USFS maintains the land; however, the Emery Stockgrowers Association maintains a permit to graze via a USFS permit. SUFCO will need to address who will be responsible to operate and maintain the pump system once the mine enters into reclamation phase.
- **[R645-301-800]:** SUFCO must incorporate the costs of bonding for this pump system in their plan.

TECHNICAL ANALYSIS:

OPERATION PLAN

RELOCATION OR USE OF PUBLIC ROADS

Regulatory Reference: 30 CFR 784.18; R645-301-521, -301-526.

Analysis:

The plan calls for access to the spring M-SP89 located approximately 400 feet downslope on the north-facing slope at the confluence of the Box Canyon and the East Fork of Box Canyon. Spring M-SP89, Joe's Mill Pond and Pines springs 105, 310, and 311 are accessed by unpaved roads operated by the USFS. The USFS has granted approval on prior mitigation attempts performed by SUFCO. A copy of this 2010 mitigation plan has been submitted to the USFS by SUFCO for comment and is expected to gain their endorsement.

Findings:

The plan meets the R645 Rules for Use of Public Roads under the condition that the USFS approves of access to Pines 105 and Pines 310 and 311 prior to commencing activities.

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:

General

Since the Division issued its Material Damage finding in 2006, SUFCO has made several attempts at mitigating the loss of water. Initially, the first plan called for a temporary solution of trucking water from the North Fork of Quitchupah Creek to six troughs placed throughout the Pines Tract and allotment area in order to replace water that has historically flowed from the North Water Spring and the Joe's Mill Pond Spring. This plan was considered a temporary solution while a more permanent sustainable water source could be found. In approximately 2008, SUFCO installed up to 15 borings in the Pines 105 area, at least three borings in the Joes Mill Pond area, and approximately 17 borings in the Pines 310 and 311 areas. The majority of the borings were completed as one-inch ID PVC piezometers and some as four-inch ID PVC monitoring wells. The data collected determined that the hydrogeologic characteristics of the alluvium in the vicinity of the springs did not yield the hydraulic conductivity values necessary to provide a long-term, sustainable water source.

The current plan submitted proposes to pipe water from a spring producing approximately 20 gpm located 1.5 miles away from the North Water area. The spring, known as M-SP89 is located at the confluence of Box Canyon and the East Fork of Box Canyon located on the north-facing slope. Water from the spring will be pumped to the top of the canyon rim via a solar powered pump system. Water will then be piped to the North Water area by a buried gravity-fed pipeline. As a possible alternative, SUFCO is evaluating the possibility of a directional-drilled borehole.

Water Rights

The spring drains to the Muddy Creek watershed. According to the Utah Division of Water Rights, all water from the Muddy Creek basin is fully appropriated. The plan does not indicate that Canyon Fuel Company has a right to use of water from spring M-SP89 to divert for stock watering purposes. Prior to obtaining water from the spring, Canyon Fuel Company must demonstrate this right.

Findings:

SUFCO is making good faith efforts to conceive a permanent mitigation solution for the material damage sustained within the Pines Tract. The plan should be approved for implementation as soon as possible.

MAPS, PLANS, AND CROSS SECTIONS OF RESOURCE INFORMATION

Regulatory Reference: 30 CFR 783.24, 783.25; R645-301-323, -301-411, -301-521, -301-622, -301-722, -301-731.

Analysis:

Maps

An aerial photograph of the proposed pipeline was submitted as Figure 1.

Findings:

The scale on the map was shown as 1" = 1,000 feet. However the scale was not correct when measured and will need to be resubmitted when the final copy is incorporated into the MRP.

RECLAMATION

Regulatory Reference: R645-301-760, et seq.

Analysis:

General

The application in its present form does not address who will operate and maintain the pump system once the mine goes into reclamation phase. The USFS maintains the land; however, the Emery Stockgrowers Association maintains a permit to graze via a USFS permit. There is some question as to whether the mine will chose to perpetually bond the system or to transfer the ownership and liabilities over to another entity.

Findings

SUFCO will need to address who will be responsible to operate and maintain the pump system once the mine enters into reclamation phase.

BONDING AND INSURANCE REQUIREMENTS

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

Analysis:

General

The 2010 mitigation plan does not have any references for the associated costs of the pump system to be included in the itemized bonding calculations. The Division realizes the

TECHNICAL MEMO

details of the design plan are still being worked out; however, the equipment used will ultimately need to be included in the itemized list of equipment in the bond section of the MRP.

Findings:

SUFCO must address in their plan how this pump system will be bonded for and to whom the responsibility and the costs associated with this system will be transferred to when the mine relinquishes responsibilities.

RECOMMENDATIONS:

The plan cannot be approved until the above-listed deficiencies are addressed outlined in this memo.

aaa
O:\041002.SUF\FINAL\WG3580\3580aaa.doc