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TECHNICAL MEMORANDUM

Utah Coal Regulatory Program

November 14, 2012

TO: Internal File

THRU: April Abate, Lead 11/19/2012

FROM: James Owen, Engineer

RE: Northwater Mitigation Plan, Canyon Fuel Company, LLC, Sufco Mine, C/041/0002, Task #4202

SUMMARY:

On October 18, 2012, the Utah Division of Oil Gas & Mining received a response submittal to a deficiency letter for a previous amendment (Task #4150). The deficiency letter was generated after the review of an application for an amendment to Sufco's Mining & Reclamation Plan (MRP). The application seeks approval of a mitigation plan for the North water area which was affected by longwall mining in 2005 and 2006.

This memo addresses the application's compliance with the engineering (R645-301-500) and bonding (R645-301-800) sections of the Utah Coal Mining Rules.

TECHNICAL ANALYSIS:

OEPRATION PLAN

SUPPORT FACILITIES AND UTILITY INSTALLATIONS

Regulatory Reference: 30 CFR Sec. 784.30, 817.180, 817.181; R645-301-526.

Analysis:

The application states that the final mitigation plan will use a solar pump, solar panel and coupled or fused 2" HDPE pipe to deliver water from MSP-89 to EFB-11. Sufco will construct a spring collection box at MSP-89 to temporarily collect a majority of the flow. The water would then be diverted into a second enclosed box that would house a solar powered electric pump, with an overflow structure to direct excess water back into the spring area. Solar panels would be placed on the canyon rim above MSP-89 to power to the pump. From the second box, the water would be sent through the 2" HDPE waterline.

Drawings C501 (SP-89 Spring Box) and C502 (Solar Panel) were included with the application to depict the system structures. The drawings are conceptual and the structures they depict may be somewhat different than how they are portrayed. Due to the remoteness of the project location, difficulty of access and anticipation that most of the work will be done by hand, as-built drawings that are certified will be submitted once construction is complete.

The application states that waterline will be delivered by helicopter and run on the surface by hand or horse. The waterline will be installed along the contour the west canyon wall to EFB-11, where it will be connected into the waterlines already in place. This system would provide water to the two troughs located on the canyon rim above EFB-11 and the two troughs located at Joe's Mill Pond.

Sufco commits to install all required equipment to pump water from MSP-89 and protect this equipment from damage from livestock wildlife to the extent possible. This may include but not be limited to the following: a mounting pole and fencing for solar panels, cement pad to mount pump on, fencing at the spring site to protect the pump and plumbing from livestock disturbance.

Sufco commits to provide and maintain for life of mining the following:

- Solar pump at MSP-89
- Solar panels to power pump at spring
- Water lines between trough locations

• Water troughs at the 2 locations (those installed by Sufco at rim of the canyon and Joes Mill Pond)

• Bi-weekly inspections of the equipment, while in operation, will be made and adjustment to the system to ensure an adequate volume of water is being delivered will be made as soon as possible.

• Sufco will provide in the annual report the water level measures obtained from the piezometers in the North water Spring Canyon and Joe's Mill areas.

During the first year of operation of the pumping and piping system, a monthly report will be provided to the Division and the Forest Service. The report will include an estimate of the water delivered to the troughs, an assessment of the pump efficiency and operation times, as well as a general description of the overall performance of the system. Problems and their solutions will also be described in the report. During the second year of operation, a summary report of the systems performance and maintenance will be included in the mine's annual report.

Upon completion of all mining activities at Sufco, perpetual maintenance of the system will be discussed and agreed on between the Division, the Forest Service and Sufco. Furthermore, Sufco will negotiate with the Forest to perform mitigation activities at another site within the Muddy or Quitchupah drainages that may include vegetation enhancement, spring collection improvement, fencing of sensitive areas, etc. The negotiations and mitigation project will be completed before the end of year 2017. Sufco will install all plumbing, waterlines and fencing prior to the next use of the area by livestock. This is currently anticipated to be in September of 2012.

Findings:

Contents and information provided are sufficient enough to meet the minimum requirements of this section of the Utah Coal Mining Rules. The previously identified deficiencies have been addressed.

RECLAMATION PLAN

BACKFILLING, GRADING, AND APPROXIMATE ORIGINAL CONTOUR RESTORATION

Regulatory Reference: 30 CFR Sec. 784.15, 785.15, 785.16, 817.102, 817.107, 817.133; R645-301-234, -301-412, -301-413, -301-512, -301-531, -301-533, -301-553, -301-536, 301-537, -301-542, 301-552, -301-553, -301-731, -301-732, -301-733, -301-764.

Analysis:

Final reclamation of the water delivery system will consist of the removal of the solar panels, pumps, pipe lines and associated equipment. The piezometers that were constructed in North water Spring Canyon, Joes Mill Pond area, and associated canyon rims will be removed or plugged and abandoned in accordance with state regulations.

Three years prior to cessation of mining at Sufco, the water delivery system will be evaluated for effectiveness and functionality. Negotiations may be entered into at that time with the mine, the permit holders, the Forest, and the Division to determine the future operation and maintenance of the system and if this is the best technology currently available to continue to deliver water for livestock grazing. Solutions for the long term liability of the system will be part of those negotiations. Also three years prior to cessation of mining, the hydrologic condition of the North water area will be evaluated. A report will be compiled describing the current conditions of surface and groundwater systems as well as the changes that have occurred since mining took place in the area. At this time, all mitigation efforts associated with this project will be appropriately evaluated to determine effectiveness and conformity with the rules and regulations. The ultimate goal of the evaluations will be to determine compliance with final bond release of the project.

Findings:

Contents and information provided are sufficient enough to meet the minimum requirements of this section of the Utah Coal Mining Rules.

BONDING AND INSURANCE REQUIREMENTS

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

Analysis:

The applicant updated their bond calculations and spreadsheets to include the facility an item requiring demolition, removal and reclamation. The applicant has demonstrated that the amount of bond currently posted is adequate to cover reclamation of the facility. Demolition unit costs are accurate and the indirect and direct costs are properly escalated. Updates to the bond calculations were included with the application. Updated unit costs for pipe & material removal were included within the Northwater Mitigation line item of the demolition portion of the bond.

The currently posted bond is in the amount of $2,874,000. The required total reclamation cost (including the requirements of the Northwater system is $2,625,000. This leaves an 8.66% ($249,000) positive difference in the bond. Bonding is adequate for demolition, removal, and reclamation of the system.

Findings:

Contents and information provided are sufficient enough to meet the minimum requirements of this section of the Utah Coal Mining Rules. The previously identified deficiencies have been addressed.

RECOMMENDATIONS:

Approval is recommended.

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