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State of Utah  
DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS AND MINING

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February 27, 1995

Ken May , Manager  
Southern Utah Fuel Company  
397 South 800 West  
Salina, Utah 84654

Re: Mid-Term Review, Southern Utah Fuel Company, Convulsion Canyon Mine,  
ACT/041/002, Folder #3, Sevier County, Utah

Dear Mr. May:

The Division has completed the midterm review for the Convulsion Canyon Mine. Enclosed is a copy of the review and findings. You will note that there are a few deficiencies in your Mining and Reclamation Plan (MRP) that need to be corrected. Please examine the review, making particular note of the requirement sections. SUFCO must provide a response to the requirements by no later than April 7, 1995.

Please call if you have any questions.

Sincerely,

A handwritten signature in black ink that reads "Daron R. Haddock".

Daron R. Haddock  
Permit Supervisor

enclosure:

cc: P. Grubaugh-Littig  
P. Baker  
W. Western  
S. Johnson  
PFO

midcover.suf



# MIDTERM REVIEW

## SOUTHERN UTAH FUEL COMPANY CONVULSION CANYON MINE ACT/041/002

February 27, 1995

### SUPPORT FACILITIES

Regulatory Reference: R645-301-521.180

#### Analysis:

The Levan site was reviewed on January 10, 1995. Storage and loading of coal are the only activities occurring at the site. There is no processing of coal.

#### Findings:

The Levan loadout does not require permitting under SMCRA.

### APPROXIMATE ORIGINAL CONTOUR REQUIREMENTS

Regulatory Reference: R645-301-563

#### Analysis:

Section 5.5.3.6 of the MRP discusses the operators request for a variance from approximate original contour requirements. The actual request is found in Appendix 5-2. An analysis of the request leads one to conclude that in reality a variance to AOC is not what the operator intended. Rather, the operator has provided justification for the retention of highwalls, discussing why the highwalls should be left and their pre-SMCRA character.

The discussion in both section 5.5.3.6 and Appendix 5-2 provides justification for allowing the pre-SMCRA highwalls to be retained as part of the final reclamation configuration. Such a configuration would be considered to be AOC and a variance would not be required.

If indeed a variance to AOC is desired the operator will need to provide justification for that variance as required by R645-302-270.

**Findings:**

Although requested, an AOC variance has not been granted. Retention of Pre-SMCRA highwalls may be justified but sections 5.5.3.6 and Appendix 5-2 must be corrected.

**REQUIREMENT:**

Section 5.5.3.6 and Appendix 5-2 need to be corrected to more accurately describe the intended outcome with respect to AOC. Retention of Pre-SMCRA highwalls does not necessarily constitute a variance from AOC and the request for the variance should be dropped or if indeed a variance is desired justification must be provided as required by R645-302-270.

**HYDROLOGIC INFORMATION**

Regulatory Reference: R645-301-760

**Analysis:**

A generalized description of the hydrologic reclamation plan is provided in the SUFCO Mining and Reclamation Plan (MRP), Section 7.60. A detailed reclamation plan for all disciplines is found in Section 5.40.

Section 7.60 says that all culverts will be removed in reclamation and permanent diversions will be maintained. Siltation structures will be removed according to the approved time table. The East Spring Canyon sediment pond will be removed prior to regrading of the area. Interim sediment control will be established as discussed in Section 5.40. The structure removal time table is found in Figure 5-2. Wells will be capped, sealed and backfilled when no longer needed.

Figure 5-2 shows that the sediment ponds will be removed after interim sediment control measures have been established. The land will then be regraded and, while grading and compacting is proceeding, the diversions will be constructed. Beginning on page

5-57 there is a section on sediment pond removal and interim sediment control. This section says that the sediment pond must be removed first to make room for the main reclamation channel. Straw-bale dikes will be installed as interim sediment control in field determined locations that reduce runoff sediment.

Plate 5-2 and Plate 5-3, Table 5-5 and Appendix 2-4 have the location and the designs for the reclamation channels. The main channel runs from East Spring Canyon and Mud Springs Hollow above the mine site to East Spring Canyon below the site. The inlet is designed to collect sediment due to an abrupt slope change at that point. East and west collector channels are also proposed. The main channel will be placed on bedrock and then grouted to avoid erosion of the channel bed. The main channel will discharge into a stilling basin downstream from the sedimentation pond. The collector channels will be constructed mostly on bedrock, although the west channel will cross some fill material. The reach based on fill will be protected with riprap and filter fabric. Two intercept channels (designs found in Appendix 2-4) will be constructed on the regraded southern slope to act as a slope break, decreasing the potential for erosion on that slope.

### **Findings:**

The reclamation plan for the Convulsion Canyon mine is lacking in the completeness of interim sediment control designs. The plan says that straw-bale dikes may be used and show installation designs, but it does not show the areas that will be treated and it is implied that some areas will not be treated. The sediment pond will be removed early in the reclamation period which makes it important that the proper sediment control is planned and designed.

The time schedule for reclamation is clearly listed in Table 5-5. Plans and designs for the final reclamation drainage are complete in Section 5.40 and in Appendix 2-4; however, the interim sediment control is left without complete designs. The text of the plan says that straw-bale dikes may be used as sediment control during the period that vegetation is establishing. There is no plan that shows all areas and the required treatment for sediment control. SUFCO should expand upon the design for their interim sediment control measures designs and show that all areas will be adequately treated after the pond is removed.

### **REQUIREMENT**

SUFCO should expand upon the design for their interim sediment control measures designs and show that all areas will be adequately treated after the pond is removed.

## BONDING AND INSURANCE REQUIREMENTS

Regulatory Reference: R645-301-800.

### Analysis:

When practical the Division reviews the bond calculations during the midterm review. While reviewing the Convulsion Canyon Mine bond, the Division found some errors in unit prices, demolition costs, drainage channel construction and earthwork costs.

Concrete demolition unit cost in the current bond calculations is \$8.50 per cubic yard. That figure is much lower than the unit cost listed in Means, which ranges between \$23.40 and \$283 per cubic yard. When the Division contacted the Operator on this issue he reviewed his calculation and discovered that \$8.50 was for square yards not cubic yards.

Quantities of concrete and asphalt to be demolished are expressed in cubic yards. Means determines the unit costs for concrete and asphalt demolition based on thickness and square yardage. In addition there is no mention of the type of reinforcement used in the concrete, which also affects the unit cost.

In the original bond calculations the Operator assumed demolition would reduce a building's volume by 80% to 90%. Usually the Division and other Operators assume volume reduction factors ranging between 50% and 65%. The reduction factor is important because it effects the debris disposal costs, which were not included in the original calculations.

The original bond calculations use a unit cost of \$4.95 for pre-split blasting of rock. Pre-split blasting is used in drainage channel construction. There is no reference for that unit cost and what other costs are included if any. There is no mention if the restoration unit cost also include excavation and disposal.

In the earthwork costs, the Operator lists the areas where fill material will be transported to and from, the distance and average grade. The Operator then averages the distance and grade and uses the averages for the earthwork calculations. Use of simple averages is incorrect. To correct the problem the Operator must calculate the cost for each earth work segment.

The unit price for concrete was in dollars per square yard while the volume of concrete was reported in cubic yards. Some reclamation procedures, such as off-site disposal, were not included in the bond calculations.

**Findings:**

Errors have been identified in the reclamation cost estimate. These errors will need to be corrected and revised reclamation cost estimate provided. Adjustment of the bond amount may be required.

**REQUIREMENTS:**

1. The Operator must supply the Division with areas, thicknesses and types of reinforcement for all concrete and asphalt items scheduled for demolition.
2. If the Operator wants to use the 80% to 90% volume reduction caused by demolition then he must supply the Division with evidence to support that assumption.
3. The Operator must include the cost of off-site disposal, which include dump fees and transportation costs if the haul distance is greater than 20 miles.
4. The Operator needs to reference the unit costs for pre-split blasting associated with drainage channel construction. Additionally the Operator needs to describe what items are included in the channel reconstruction costs.
5. The Operator needs to state the volume of earth to be moved in each segment of the cut and fill operations. The cost of each segment must be calculated.