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TO: Daron Haddock, Permit Supervisor

FROM: Steven M. Johnson, Reclamation Hydrologist SMJ

RE: ~~Draft~~ Review, Mid-Term Permit Review, Convulsion Canyon Mine, Southern Utah Fuel, ACT/041/002, Working File, Sevier County, Utah
Folder # 2

SYNOPSIS

A review of the hydrologic reclamation plan for the Southern Utah Fuel Company's (SUFCO) Convulsion Canyon mine was completed as part of the mid-term review for that plan. The technical analysis is included in this memorandum.

ANALYSIS

RECLAMATION PLAN

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 which 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 place 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 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.

RECOMMENDATION

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.