TECHNICAL MEMORANDUM

Utah Coal Regulatory Program

June 17, 2004 CK

TO: Internal File

THRU: Peter H. Hess, Environmental Scientist III/Engineering, Team Lead PHH by CN

FROM: James D. Smith, Environmental Scientist III/Hydrology JS

RE: Abandoned Equipment, Co-Op Mining Company, Bear Canyon Mine, C/015/025, Task ID #1934

SUMMARY:

Mining of the Hiawatha Seam in the 1st North section of the Bear Canyon #1 Mine was abandoned due to a roof fall that occurred on January 14, 2003. The roof fall buried a coal hauler, a distribution box, and a shop trailer; the buried equipment had to be abandoned in-place. Other equipment was removed and the area sealed. Co-Op Mining Company utilizes the water from the mine for both culinary and mining purposes, so they are concerned about potential contamination.

The section that was sealed-off included water-monitoring site SBC-11, which monitored floor seeps in the northeast corner of Mine #1. Drainpipes were installed through the seals near SBC-11, and also through the seals near the roof-fall - at elevations sufficiently low that water should not back-up behind the seals and flood the abandoned equipment. The entry where the roof-fall occurred is elevated enough so that seepage can drain through surrounding entries and around the abandoned equipment.

SBC-9A now monitors flow from the drainpipes through the seals plus water that comes down from the Blind Canyon Seam through a nearby drill-hole. Co-Op Mining anticipates abandoning SBC-9A and the surrounding entries in 2003 or 2004. Pumping will cease and water will rise until it can drain by gravity into the West Mains, but the abandoned equipment will be above this water level. Water is piped from the West Mains to the Co-Op water-supply system, and water quality will be monitored for the life of the mine.

Appendix 7-P contains copies of the Material Safety Data Sheet (MSDS) for the hydraulic fluid, gear oil, lead, and battery acid remaining in the abandoned equipment. Potential hydrologic impacts are discussed on pages 7-25 through 7-27 in the MRP, which have been updated to include the potential impacts from the abandoned equipment. The Probable Hydrologic Consequences (PHC) determination done for the Bear Canyon Mine by Mayo and Associates in 2001 (App 7-J of the MRP) discusses potential impacts from spillage of fuels, greases, and oils during normal operation and maintenance of vehicles and equipment, but does not include consequences from abandoned mining equipment.

Darrel Leamaster of Castle Valley Special Services District has expressed concerns about lead contamination in Big Bear Spring (personal communication, June 7, 2004), which is adjacent to the mine and a major source of water for the District. At this time it does not appear this should be a problem as the water from the area of the roof-fall drains from the mine tunnel to the Co-Op water system and does not flow to other areas of the mine or remain pooled underground. Also, mine floor elevations indicate that the water does not directly contact the equipment.

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 potential of contamination in water discharging from the mine is a special concern at the Bear Canyon Mine because Co-Op Mining Company utilizes the water from the mine for both culinary and mining purposes. Monitoring of the mine discharge will continue for the life of the mine. Potential contaminants from the abandoned equipment are identified in the MRP, and MSDSs are in Appendix 7-P. Water not consumed in culinary and mine operations is discharged to the stream in Bear Canyon under a UPDES permit.

The water-monitoring plan in the MRP calls for quarterly water-quality monitoring at SBC-9A. This should be sufficient to detect a prolonged or significant increase in sulfate concentration caused by acid leaking from the batteries. Water samples collected at site SBC-9A are analyzed for oil and grease, and the UPDES permit requires a determination of oil and grease for water discharged to Bear Creek. However, under the water-monitoring plan, analysis is done for lead only once every five years, in the year prior to permit renewal.

Because the mine discharge provides the culinary water supply for the mine, it is also subject to periodic sampling to meet the requirements of the Clean Drinking Water Act. Water analyses required for the Bear Canyon Water System by the Division of Drinking Water are:

Bacteriological	- quarterly
Lead and Copper	- 5 samples every 3 years (samples must be first draw)
Asbestos	- 1 sample every 9 years
Inorganics and Metals	- 1 sample every 3 years
Nitrate	- 1 sample every year
Nitrite	- 1 sample every year
VOC	- 1 sample every 6 years
Radionuclides	- 1 sample every 4 years

There is special concern on the part of Division of Oil, Gas and Mining; the Division of Drinking Water; and the Permittee that contaminants from the abandoned equipment be detected, should they enter the mine's water system. Co-Op has provided to the Division the results of the latest culinary system water-quality analyses, and results of all analyses are readily available from the Division of Drinking Water.

Findings:

Hydrologic operation information on water-quality standards and effluent limitations is sufficient to meet the requirements of the Coal Mining Rules.

RECOMMENDATIONS:

Approval of this amendment is recommended.