

TECHNICAL MEMORANDUM

Utah Coal Regulatory Program

December 4, 2003

TO: Internal File

THRU: Daron R. Haddock, Permit Supervisor

FROM: Peter H. Hess, Environmental Scientist III/Engineering, Team Lead

RE: Abandoned Equipment, Co-Op Mining Company, Bear Canyon Mine, C/015/025-03C, Task ID#1696

SUMMARY:

The permittee submitted an amendment to the mining and reclamation plan on May 29, 2003 in response to the need to document the abandonment of several pieces of mining equipment in the #1 Mine (Hiawatha coal seam). The Division requires all permittees to identify the location of machinery that is left in underground workings, such that a finding can be made relative to the potential for impact to ground water sources. The Division responded with an initial deficiency review on June 23, 2003.

On November 10, 2003, the permittee responded to the June 23 deficiency document. This technical memo will address the permittee's response to the deficiencies relative to the disposal of noncoal mine waste.

TECHNICAL ANALYSIS:

OPERATION PLAN

SPOIL AND WASTE MATERIALS

Regulatory Reference: 30 CFR Sec. 701.5, 784.19, 784.25, 817.71, 817.72, 817.73, 817.74, 817.81, 817.83, 817.84, 817.87, 817.89; R645-100-200, -301-210, -301-211, -301-212, -301-412, -301-512, -301-513, -301-514, -301-521, -301-526, -301-528, -301-535, -301-536, -301-542, -301-553, -301-745, -301-746, -301-747.

Analysis:

Disposal Of Noncoal Mine Wastes

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The permittee experienced an unanticipated roof fall in the 1st North section of the Bear Canyon #1 Mine (Hiawatha seam) on January 14, 2003 at approximately 6:45 AM. The coal production from the area was being generated via retreat mining (pillar extraction). The roof fall (130 feet in length X 20 feet in width X 20 feet above the coal seam) buried a coal hauler (battery powered), an electrical distribution box, and a shop trailer. After the investigation of the roof fall by the permittee and MSHA, all remaining equipment was removed from the section and the area was sealed with MSHA approved mine seals.

The permittee notified the Division concerning the incident on January 15, 2003 during the initiation of the regular monthly inspection. At that time, the assigned reclamation specialist informed the permittee that it was necessary to submit a permit amendment to document the location of the abandoned machinery such that the Division can make a finding relative to the potential for the degradation of the ground and/ or surface water regimes within the permit area.

The permittee submitted information relative to the roof fall / buried, abandoned equipment on May 29, 2003.

The submittal contains PLATE 7-10B, which is a map of the #1 Mine workings in the Hiawatha seam. PLATE 7-10B locates the area in the 1st North section where the battery powered coal hauler, the electrical distribution box, and the shop car are buried. PLATE 7-10B was P.E. certified by Mr. Charles Reynolds, the permittee's Manager of Engineering Services, on April 24, 2003.

The buried coal hauler contains the following liquids, which could potentially impact ground water emanating in the area; hydraulic oil (55gallons), gear oil (15 gallons), battery electrolyte (28 gallons) and lead in the DC power cells of that machine. The permittee noted these volumes of lubricants and battery electrolyte in the response received by the Division on November 10, 2003, (TASK ID#1696). No volumes of lubricant were indicated as existing on the shop car. The electrical distribution box will contain quantities of copper, aluminum and other assorted metals, but does not contain any liquids (dielectric substances in capacitors) as indicated by Mr. Charles Reynolds.

Relative to the ground water regime in the 1st North area, PLATE 7-10B depicts a floor seep in the northwest corner of the section generating four gallons of water per minute (SBC-11). A roof dripper located 700 feet west of the buried machinery is noted as generating less than one-tenth of a gallon per minute. A vertical borehole connects the Hiawatha seam with the overlying Blind Canyon seam. A second vertical drill hole reports forty gallons per minute to SBC9. Water is shown to collect in at least two areas of the 1st North section.

The permittee has included text relative to the abandoned equipment portion of the submittal that is included as Appendix 7-P. Page 2 of Appendix 7-P (page 7P-2) indicates that the floor elevation where the equipment is buried is higher than the surrounding area. This is also depicted on page 7P-3, Figure 7P-1. As shown, based on coal seam floor elevations, water accumulating in the Hiawatha seam will drain through Entry 26, preventing the elevation of

same in the inby areas (where the equipment has been abandoned) from ever reaching the lubricants, battery electrolyte, or lead containers. "P" traps have been installed in the #1 and #5 seals, (numbered from left to right as if looking toward the northern boundary of the permit area) which will allow ground water to flow from the sealed area toward Entry 26. Thus, the equipment should never intercept the phreatic surface.

PLATE 7-10B depicts two mine water discharge lines emanating from the Hiawatha portal area; a two-inch culinary line and a four-inch mine water discharge line. The route that these lines take once they reach the surface is not known.

The permittee has submitted material safety data sheets for the lubricants (gear oil and hydraulic fluid), the battery electrolyte, and the lead contained in the DC power cells.

No lubricant volumes were reported as existing on the shop car.

No dielectric compounds were reported as being within the electrical distribution box that was abandoned, due to being covered by the roof cave.

Although it appears that ground water will never intercept the chemicals associated with the battery powered coal hauler, the following needs to be noted.

- 1) The MSDS sheets for the gear oil and hydraulic oil compounds both state the following; "As with any industrial chemical, exposure to the environment should be prevented and minimized wherever possible", and "The degree of biodegradability and persistence of this product has not been determined". Also, "releases of the product into or leading to surface waters must be reported to the National Response Center at 1-800-424-8802".
- 2) **The MSDS sheet for the electrolyte filled/lead coal hauler battery(ies) states on Page 3 of that document that both the electrolyte and the lead in the storage cells have an NFPA hazard rating of 3.** Additional information contained in this MSDS sheet states the following; "this product (lead acid battery wet, filled with acid) contains chemicals known to the State of California to cause cancer, birth defects and other reproductive harm". Also noted is the following; "EPCRA Section 312 Tier II reporting required for batteries **if sulfuric acid is present in quantities of 500 lbs. or more and/or lead is present in quantities of 10,000 lbs. or more.**"

Information gathered from the coal hauler equipment manufacturer (DBT America, Huntington, Utah) reveals the following:

- a) Each battery has 64 cells. Each cell contains forty-three pounds of electrolyte (H₂SO₄). Each cell contains one hundred and thirty-seven pounds of lead.

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- b) Per battery, the weight of sulfuric acid contained is 64 cells X 43 #'s H₂SO₄ /cell = 2752 pounds of H₂SO₄. Times two, (two batteries per coal hauler)=5,504 pounds of H₂SO₄.
- c) Per battery, the amount of lead which was buried with the mining machine equates to 137#/cell X 64 cells = 8768 pounds of lead (Pb). Therefore, with two batteries being buried with the machine, 17,536 pounds of lead have been buried.

The permittee must report this accident to the Environmental Protection Agency in Denver, Colorado to meet the requirements of EPCRA Section 312 Tier II. The permittee must submit a copy of this notification to the Division. In order to inform other government entities of the accident, the following agencies must also be notified:

- 1) State of Utah, Division of Solid and Hazardous Waste.
- 2) State of Utah, Department of Environmental Quality, Division of Water Quality.
- 3) Southeastern Utah District Health Department / Mr. Dave Ariotti.
- 4) City of Huntington, Utah.
- 5) Castle Valley Special Service District.
- 6) USFS / Manti-LaSal National Forest, Price, Utah.
- 7) U. S. Environmental Protection Agency, Denver, Colorado.

These notification letters must indicate the location of the buried machinery, the types of lubricants and their volumes, the amount of battery electrolyte, and the amount of lead that was buried with the coal hauler.

The permittee should submit copies of the notification letter to the aforementioned agencies to the Division with the next deficiency response. The permittee needs to note in the letter that the ground conditions in the mine were such that the U.S. Department of Labor / Mine Safety and Health Administration would not allow additional coal recovery, or extraction of the buried machinery in that area of the #1 Mine.

Findings:

The submitted information is not adequate. Prior to receiving a recommendation for approval:

R645-301-747.300, the permittee must address the notification requirements of the Code of Federal Regulations for batteries of this size. Verification of that notification must be provided to the Division.

RECOMMENDATIONS:

The amendment cannot receive a recommendation for approval at this time.