M/035/009

State of Utah

DEPARTMENT OF ENVIRONMENTAL QUALITY
DIVISION OF WATER QUALITY

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MAY 6 1994
DIVISION OF
OIL GAS & MINING

May 5, 1994

Mr. Dave Hodson, Manager
Barneys Canyon Mine
P.O. Box 311
Bingham Canyon, Utah 84006-0311

RE: Barneys Canyon Waste Dump Management Plan; Ground Water Permit No. UGW350001

Dear Mr. Hodson:

We received your written summary dated March 8, 1994, of the presentation by Barneys Canyon, February 3, 1994, regarding plans for managing waste rock from the Barneys Canyon mine. The material included a written response to the 5 questions requested in our April 1, 1993 letter, data collected by HBT AGRA Limited of Calgary, Alberta, Canada regarding porosity, permeability, density and saturation relationships of the dumps, and the current status and preliminary plans for your dump management. We agree that acid drainage from the waste dumps is not a concern as long as they are well managed, because of the large volumes of carbonate rock that are present. Our main concern is that the oxidation of sulfides eventually forms soluble sulfates, which in the long term, will increase the sulfate and the dissolved solids level of ground water.

We appreciate your efforts to develop environmentally conscious management procedures, including revision of the mine plans that had been formerly approved by the Division of Oil Gas and Mining (DOGM). We understand that Barneys Canyon is separately evaluating each dump, its contents and is revising and generating new plans for them. In general we feel this approach is sound and will culminate in an overall mining operation management plan for protection of ground water. We envision this will be a comprehensive document delineating the "best available treatment" technologies, their performance standards and plans for implementation. Conceptually you are proposing to develop a waste dump cap design with an infiltration performance standard for those high sulfide wastes which could have a potential impact on ground water. There would be developed some means for demonstrating compliance with this performance standard. The basis for managing these wastes in this type of facility would be an established sulfide concentration of the waste ore. In taking this approach it appears you would be segregating the waste ore dump facility into three categories. The first would be the existing dumps and second a new high sulfide waste ore facility covered by the ground water discharge permit with specific BAT performance standards. The third would be those low sulfide ores yet to be mined which if managed according to the approved mine plan would have a deminimus impact to ground water and would not be directly oversighted by the permit.

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We need to call this issue to your attention as it would be necessary to modify the permit for the redesigned facilities prior to construction in order to incorporate the agreed upon BAT. In this context we have prepared the following comments on your specific dump proposal plans.

We will only want to review the existing Barneys Canyon 6300 and 6500 dumps, which are nearly completed and the SBCS and future dumps, which reportedly will contain little sulfide to determine if the cover material will be adequate to prevent leaching of any sulfate material. DOGM will probably want to review any changes you make to the original design.

We will need to review your proposed basic design that is only briefly mentioned under item 5.5 of your cover letter for the Melco 7200 south dump and the Melco North dumps. These dumps will be formed from waste rock with a high sulfide content and would therefor be considered new facilities requiring modification of the ground water permit. Waste rock with a low sulfide content will go to a separate dump. We will also need to review the soil cover and revegetation plans and the chemical data of the material that is going into these dumps. When the design and plans have been completed, please submit them for our review. The plans must also be reviewed and approved by DOGM. When the information has been reviewed and the procedures considered acceptable we will make the necessary changes to the ground water permit to upgrade the BAT for the dumps that will be affected.

Your letter satisfactorily covers the 5 questions we asked in our February 3, 1993, letter, although we still need to agree on a cutoff point of the sulfur content of wasterock that will need special handling and a treatment for slowing the oxidation of sulfides in the highwalls. When you believe you have a solution, please submit for our approval.

We agree that some method of performance monitoring the dumps is needed. Wells to determine water quality impacts in this case would probably be impractical. A lysimeter or a sump at the base of the dump with a drain tunnel, or some similar scheme may be options for consideration to determine performance flow rates which we will be willing to evaluate with you.

If you have questions, please call Mack Croft or Larry Mize at (801) 538-6146.

Sincerely,

Don A. Ostler

Don A. Ostler, P.E.
Director

FCP:MGC:wfm

cc: Division of Oil Gas & Mining
Salt Lake City/County Health Department

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