



State of Utah

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

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August 1, 1989

TO: Richard V. Smith, Permit Supervisor

FROM: Darin Worden, Reclamation Hydrologist *DW*

RE: No. 2 Whitmore Mine Water Discharge Pond Permit
Amendment 89-I Technical Review, Sunnyside Reclamation
and Salvage, Inc., Sunnyside Mines, ACT/007/007,
Folder #2, Carbon County, Utah

Synopsis

The operator submitted on June 26, 1989, plans to construct a second Whitmore Mine water discharge pond. This memo reviews the plan's hydrological deficiencies.

Analysis

Two technical deficiencies exist.

1. Decant device is undersized, and
2. No sediment clean out level was mentioned.

The proposed pond has been designed with an 18-inch decant device (slope = 0.6 percent and length of 200 feet) and no emergency spillway.

The pond's contributing area includes a 1.82 acre topsoil pile and pond surface area. SCS Type II peak flow from a required 100-year, 24 hour storm, along with an average 2 cubic feet per second mine water discharge gives a total peak outflow of 6 cubic feet per second.

The required headwater depth for an outlet control 18-inch metal corrugated culvert at a 0.6 percent slope and 200 feet length is 3 feet. The proposed pond has only 3 feet of freeboard above the decant device. The decant will not pass the flow with the required one foot of freeboard above headwater requirements.

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Division calculations showed a 24-inch decant device would pass the required 6 cubic feet with a minimum of 1.3 feet of headwater.

No sediment pond cleanout level was described in the proposed plan. It was stated that "Cleanout will be done when it is determined that the pond cannot maintain applicable effluent limitations." This is not acceptable.

Data from mine outflows taken as requirements of recent enforcement action against the operator has been used to estimate a 60 percent sediment cleanout volume. Twenty-four hour theoretical detention time was used to back calculate a sediment volume for the pond. This value was then used to calculate the depth of sediment at which cleanout is required, which was found to be 9 feet.

Recommendation

Inform the operator that the above-mentioned changes in design must be made prior to amendment approval.

The Division will require the operator to change designs to incorporate a 24-inch decant and install a sediment marker at 9 feet above the pond's design bed elevation.

djh
AT30/59-60