0108

STATE OF UTAH
NATURAL RESOURCES
Oil, Gas & Mining

Scott M. Matheson, Governor
Temple A. Reynolds, Executive Director
Dianne R. Nielson, Ph.D., Division Director

4241 State Office Building • Salt Lake City, UT 84114 • 801-533-5771

June 21, 1984

Mr. Geoffrey P. Saunders
Hydrologist, Environmental Services Group
Getty Oil Company
23385 Routt County Road 33
Oak Creek, Colorado 80467

Dear Mr. Saunders:

RE: Sediment Control Plan Decant Pipe Modification for Ponds #4, #5 and #6 - Star Point Mine - Plateau Mining Company - ACT/007/006, Folder No. 3 - Carbon County, Utah

The Division's Technical Staff has reviewed the plans for decant pipe modification for sediment ponds 4, 5 and 6 received August 1, 1983. In this review, the results of the Division's calculations differed from the results presented by Plateau Mining Company. This difference raises several concerns:

A. The inflow hydrograph does not appear to be complete. The receding limb has been terminated prematurely. Termination at 2.5 - 5.0 CFS is all right for a 12" or larger riser. Here we are looking at a one to two inch orifice in the side of a riser. Therefore, the tail end of the hydrograph has considerable effect.

B. Time increments of presented Hydrographs (D) are too great for indicated time of concentrations D should be 1/5 to 1/3 the time to peak. If using SCS methodology use 1/3.

C. The flow ratings for the 1" diameter orifice appear to be in error. Please check the calculations. This affects the outflow hydrograph for ponds 4 and 6.

D. Detention time calculations for each of the ponds are unclear. For variable flow conditions detention time is the difference between the centroids of the inflow and outflow hydrographs. (Check the numbers given for pond #6 on the Pond Design Summary.)

E. Are the partical size analyses presented dispersed or undispersed samples? Most soils analyses are agitated in a dilute aqueous reagent to disperse soil aggregates. Undispersed samples require special testing methods and equipment. Undispersed sample results are important because they are representative of soil particals capable of being eroded and transported by water (i.e., that which would be trapped by a pond).

F. The determination of settling efficiencies presented assumes a reservoir with a steady inflow and outflow rate. Based on the inflow hydrograph presented, a more accurate estimate would be obtained from a variable flow rate model.

As a result of these concerns and based on requirements of UMC 817.42 & 817.46 (e) and (f) the Division requires the following information:

1. A complete inflow hydrograph with calculation for associated input parameters (ie. area, CN, time of concentration, time to peak and D).

2. An updated and corrected orifice rating table.

3 Theoretical detention time calculations for variable flow rate inflow and outflow conditions.

4. Results of partical size analyses for undispersed samples.

5. Determination of settling efficiencies of pond under variable flow conditions.

6. Presentation of calculations for average effluent concentration, size distribution of effluent, and effluent settleable solids concentration for each pond.

7. Plans showing location and design of automatic dewatering system for each pond.

If you have any questions, regarding these comments and concerns please call, Tom Suchoski of the technical staff or myself.

Sincerely,

D. Wayne Hedberg

D. Wayne Hedberg
Reclamation Hydrologist/
Permit Supervisor

DWH/ts:jvb
cc: Ben Grimes, Plateau Mining
Dianne Nielson, DOGM
Ron Daniels, DOGM
Jim Smith, DOGM
Dave Lof, DOGM
Tom Suchoski, DOGM
93340