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RECEIVED
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DIVISION OF
OIL GAS & MINING

Mr. Rick Summers
Department of Oil Gas & Mining
State of Utah
3 Triad Center Suite 350
355 West N. Temple
Salt Lake City, Utah 84180

RE: WELLINGTON COAL PREPARATION PLANT
REFUSE BASIN SEDIMENT POND and SLURRY PIPELINE SEDIMENT POND

Dear Mr. Summers:

Attached please find 3 copies of the documentation for the proposed modifications to the Refuse Basin Sediment Pond and the Slurry Pipeline Sediment Pond. Draft permit changes are also attached. As we have discussed, we will insert the proposed modifications into the permit with the submittal for the Dryer Sediment Pond (planned for May 1, 1992).

The purpose of the proposed modifications is to provide for dewatering of the Refuse Basin Sediment Pond and Slurry Pipeline Sediment Pond. The results of the analysis of the proposed modifications are presented following.

REFUSE BASIN SEDIMENT POND

The Refuse Basin Sediment Pond is a large facility formed by a dike separating the Refuse Basin from the Clearwater Pond. The Refuse Basin Sediment Pond as defined herein and for the Permit includes both the Upper Refuse Basin and Lower Refuse Basin. For discussion purposes, both ponds can be discussed as a single pond because the dike between the Lower Refuse Basin and the Clearwater Pond is higher than the Upper Refuse Basin dike. Should for any reason the Upper Refuse Basin dike fail, the total maximum fluid contents of the Upper Refuse Basin would still be retained by the Lower Refuse Basin (see stage-volume relationships on Figures 1 & 2). Therefore, for sediment pond computation purposes the Refuse Basins are assumed to act as one large sediment pond.

The available capacity of the Refuse Basin Sediment Pond is large in comparison to the design runoff volumes. Setting the decant elevation at 5374 feet provides about 150 acre-feet of storage below the decant (see stage-volume relationship for the Refuse Basin Sediment Pond on Figure 2). The pond is normally dry under present operating conditions and annual potential evaporation far exceeds annual runoff volumes. The 100-year 24-hour runoff volume (88.8 acre-feet) could easily be contained in the proposed dead storage (150 acre-feet), therefore it is expected that the pond will fill to the decant level only in very rare events.

The adequacy of the Refuse Basin Sediment Pond for the 10-year 24-hour rainfall design treatment event and the design 100-year 6-hour rainfall emergency spillway event (event) was analyzed using the Army Corps of Engineers Flood Hydrograph Package computer program HEC-1 (see printouts in appendix). The results of the analysis are summarized following.

10-YEAR 24-HOUR DESIGN ANALYSIS

The adequacy of the Refuse Basin Sediment Pond for treatment of the 10-year 24-hour precipitation event (1.82 inches) was modeled using the SCS Type II 24-hour storm distribution and conservatively assuming that the basin is full to the decant level (5374 feet) at the beginning of the storm. The decant was modeled as a 3" diameter orifice (see Drawing 712a Sheet 2 of 2). The computed peak stage is 5374.88 feet with a peak discharge through the decant orifice of 0.22 cubic feet per second (cfs). A conservatively low estimate of the time between inflow and outflow hydrograph centroids was estimated by dividing half of the runoff storage volume left in the Basin at the peak stage (ie. half of 48.5 acre-feet) by the peak discharge rate (0.22 cfs). Dividing half of 48.5 acre-feet by 0.22 cfs, multiplying by 43,560 cubic feet per acre-foot and dividing by 3,600 seconds per hour results in 1,333 hours, well in excess of the minimum 24-hour detention time requirement.

100-YEAR 6-HOUR DESIGN ANALYSIS

The adequacy of the Refuse Basin Sediment Pond spillway system for the 100-year 6-hour precipitation event (1.91 inches) was modeled using the SCS 6-hour storm distribution and assuming that the basin is full to the emergency spillway level (5376 feet) at the beginning of the storm. The assumption of a starting pond elevation at the spillway elevation is very conservative because there is sufficient available pond volume between the spillway elevation and the decant elevation to totally contain two 100-year 6-hour storm events back to back (ie. the available storage between decant and spillway is about 118 acre-feet and the 100-year 6-hour runoff volume is about 53 acre-feet, see Figure 2). With the pond level set at the spillway elevation at the beginning of the 100-year 6-hour design storm, the HEC-1 model predicts a peak stage of 5376.7 feet with about 6 feet of remaining pond free board and sufficient remaining capacity to totally store up to eight 100-year 6-hour design storm runoff events. Therefore the existing spillways have more than adequate capacity to discharge the design event.

SLURRY PIPELINE SEDIMENT POND DEWATERING PLAN

The existing Slurry Pipeline Sediment Pond has a total capacity to the existing grouted riprap spillway of about 0.7 acre-feet (see Figure 3). This is more than adequate to contain the runoff from a 10-year 24-hour runoff event (0.4 acre-feet) plus expected sediment volumes (0.006 acre-feet, see computations in appendix).

Storm runoff waters which collect in the Slurry Pipeline Sediment Pond will be retained until UPDES discharge limitations can be achieved (24 hours minimum) and then discharged by pumping either to the grouted riprap spillway or directly to the Price River.

A floating pump intake will be utilized in conjunction with a staff gauge to allow dewatering of the contents of the pond. The intake will include an oil skimmer (down turned pipe elbow, see Drawing 712c). The steel post will be painted with a red stripe set at the lowest dewatering level (ie. 5356.0 feet, about 3 feet above pond bottom elevation). The portable gasoline powered pump will be manually operated to assure pump shut off at the appropriate level (ie. red stripe). The pump will have a minimum capacity of 270 gpm with 12 feet of head requiring a minimum 2 horsepower engine.

We have appreciated your assistance in preparing the proposed plans. If there are questions, or if we may be of assistance in anyway, please call.

Sincerely,

Gregory J. Poole, P.E.
Senior Hydraulic Engineer

CC: Dr. Patrick Collins, Mt. Nebo Scientific