State of Utah
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

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April 10, 1992

TO: Pamela Grubaugh-Littig, Permit Supervisor

FROM: Thomas Munson, Senior Reclamation Hydrologist TM

RE: Technical Deficiencies (Ground Water), Blue Blaze Coal Company, Blue Blaze Mine, PRO/007/020, Folder #2, Carbon County, Utah

Synopsis

The Division received a Response to the March 23, 1992 Technical Deficiencies Document from EarthFax Engineering for the Blue Blaze Coal Mine regarding the March 11, 1992 Division response. This memo will spell out the remaining Technical Deficiencies.

Analysis

The March 26, 1992 submittal meets the necessary requirements of the rules to define groundwater characteristics in the area of the proposed Blue Blaze Coal Mine for the Castlegate A Seam. There is a discrepancy regarding seam nomenclature as drill logs shows what is commonly referred to as the Hiawatha Coal Seam as the Upper O'Connor Seam. The Table that EarthFax included in their report from the Division is wrong as described below due to this discrepancy in nomenclature. A corrected table is shown below.

Drill Hole Evaluation

HOLE ID	DATE DRILLED	DEPTH DRILLED	DEPTH of PLUG	MEASURED DEPTH	CASTLEGATE DEPTH *	HIAWATHA DEPTH *
LMC 1	Sept. 1976	900 ft.	600 ft.	599 ft.	793 ft.	**Unknown****
LMC 2	Oct. 1976	568 ft.	50 ft.	None	369.9-370 ft. ***	518-522 ft. ***
LMC 3	Nov. 1976	836 ft.	665 ft.	664 ft.	630-677 ft.	791-798.2 ft.

LMC 4	Jan. 1980	430 ft.	220 ft.	217 ft.	105.2-112 ft.	215-227 ft.

* From drill logs provided in EarthFax Report: Response to Technical Deficiencies, Blue Blaze Coal Company, Blue Blaze Mine.

** Drill log indicates Gordon Coal seam at 856 feet.

*** Drill log indicates Castlegate A seam replaced by channel sands, Gordon coal Seam at 435 feet.

It becomes apparent after reviewing this Table that the data presented shows that water levels have been collected from zones above, within, and immediately below the Castlegate A seam. No water quality data was collected from the Castle A seam because the seam was dry. Only drill holes LMC 1, 2, and 3 provide data applicable to the Permit Area. LMC 1 provides data from aquifers 200 feet above the Castle A seam. LMC 2 provides no data. LMC 3 provides data from above the Castle A seam and from within the Castle A seam. LMC 4 provides data from above, in, and below the Castlegate A seam. LMC 4 provides data from above the Hiawatha seam but penetrates old workings instead of an in place seam, therefore, cannot be used to accurately describe baseline conditions in the Hiawatha seam.

It is appropriate to take into account the surrounding mines and document the occurrences of ground water that have occurred in those mines. Both the Gordon Creek #2 and #3 Mines encountered small sporadic occurrences of groundwater in the Castlegate A seam, whereas, both Mines encountered water in the Hiawatha seam, the most ground water being associated with the crossing of a graben in the Gordon Creek #3 Mine where the water was backed up against one side of the graben which acted as a ground water barrier.

Recommendation

The Division recommends that the applicant be given a permit to mine Castlegate A seam with stipulation that holes LMC 1 and 2 be redrilled in another location adjacent to the existing holes because of problems and uncertainties associated with redrilling the same hole already cemented. All drilling proposals

will obtain approvals from the Division of Water Rights and appropriate government agencies.

Baseline water quality data will be collected for a period of two years and can be reviewed at the end of one year if the applicant provides an updated PHC summarizing all data collected in the PHC at the end of one year. No water quality parameters will be dropped from the Division's water monitoring until the applicant provides a summary of the data for Division review and a discussion justifying the rational for elimination of each individual parameter. If these parameters were consistently above the detection limit and/or the Drinking Water Standards, then it becomes appropriate that this is summarized in the PHC.

An approval to mine the Hiawatha seam will be contingent on the submittal of the revised PHC, summarizing all water data collected to date, specifically addressing the aquifers above, within, and below the Hiawatha seam.

All submittals, tables, and maps be referenced in a complete table of contents and the permit application package be revised to reflect all stipulations and approvals.

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