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

Michael O. Leavitt  
Governor  
Ted Stewart  
Executive Director  
James W. Carter  
Division Director

1594 West North Temple, Suite 1210  
Box 145801  
Salt Lake City, Utah 84114-5801  
801-538-5340  
801-359-3940 (Fax)  
801-538-7223 (TDD)

October 16, 1997

TO: File

THRU: Joe Helfrich, Permit Supervisor 

FROM: Sharon Falvey, Senior Reclamation Specialist, Hydrologist. *SXF*

RE: N97-46-5-1 Abatement, Cyprus Plateau Mining Corporation, Willow Creek Mine, ACT/007/038-97F, Folder #2, Carbon County, Utah

**SUMMARY:**

This amendment is intended to meet the abatement requirements for violation N97-46-5-1, issued on July 4, 1997. This NOV was issued to update information related to the Probable Hydrologic Consequences for the water encountered during mining operations in July 1997. These activities were not approved operations and, the groundwater occurrence was not identified in the earlier reconnaissance investigations used to develop the PHC.

The permittee now realizes that the groundwater will need to be discharged from the lower formation in order to continue mining. Although these two issues are interrelated, the information which describes the impacts to date and the information from the occurrence of the initial water encounter are separate issues. The information gathered relating to the July, 1997 water encountered should be incorporated into the PHC and does not need to be intertwined with the proposed discharge procedures. The applicant may incorporate this information as an addendum to the PHC and then update appropriate sections of the PHC when the reconnaissance information is gathered for de-watering the "K" and "C" seams.

**ANALYSES:**

**TECHNICAL ANALYSIS:**  
***ENVIRONMENTAL RESOURCE INFORMATION***

**HYDROLOGIC RESOURCE INFORMATION**

Regulatory Reference: 30 CFR Sec. 701.5, 784.14; R645-100-200, -301-724.

## **Probable Hydrologic Consequences Determination**

### **Analysis:**

The following paragraph summarizes the information presented in this amendment:

Flows encountered during the event were estimated to be approximately 1,200 gpm and the water was estimated to have a head of 200 ft. The source of the inflow was determined to originate from an abandoned surface well MC-090(found on the geology map), which allowed water to move from the lower seam into the mined area. The permittee drilled an injection well into the "K" seam outside of the portals and plugged the abandoned hole. This well will not be used further without prior notification and approval of the regulatory agency. ( A request for further use was not presented in the amendment). Additional information is currently being gathered to investigate the gain/loss relationships of Willow Creek between Skinny Canyon and the Confluence with the Price River but, the details of this proposed monitoring scheme were not presented.

The presented information has not adequately described the event and water encountered in July of 1997 and, does not allow the division the ability to make a findings on PHC of operations resulting from this event. The findings section outlines the information which should be presented and compiled as part of the amendment used to abate this NOV.

### **Findings:**

The permittee must provide the following, to abate Notice of Violation N97-46-5-1, in accordance with;

**R645-301-731.** The PHC should include the following information:

1. Vertical or Dimensional Schematic of the mined area and aerial schematic compiled to include the following where applicable:
  - a. The approximate location and elevation of the encountered drill hole.
  - b. The locations and elevations of the coal seams showing dip.
  - c. The estimated potentiometric surface and relationship to coal seams.
  - d. The estimated potentiometric surface and elevation relationship to Willow Creek and the Price River in relation to; the intercept of the streams and the Blackhawk formation; the intercept of the stream and undermined sections of the stream; and the intercept of the stream and other significant features such as nearby

hydrogeologic controls, mined areas, etc..

2. Other information that should be included in the plan are:
  - a. A description of the monitoring injection well development; depth, diameter, etc.
  - b. Estimated volumes of water pumped; from the D seam into the K seam and pumped to the sedimentation pond.
  - c. A chronology of the event and emergency actions including; the date the water was encountered; the date pumping was initiated; the number of pumps used, their maximum pumping rate and time of use; the location of any in-mine sumping and pumping rates to the location; the date the borehole was sealed; the date the injection pumping was completed.
  - c. To gain an appreciation of the volume of water in the lower seam and possibly get a rough handle on the potential for future pumping activities in the mine, information including; the approximate water elevation in the mine prior to commencing pumping, the approximate elevation of the water in the injection well when the borehole was sealed; and the final elevation of water following pumping; should be presented in the plan This will aid in understanding the system and the PHC.
  - d. An assessment of the existing groundwater and surface water monitoring data gathered prior to and through the event period. Provide all additional data, lab sheets, and analyzation collected to date, that are related to describing this event (Refer to the July 4, 1997 memo to Peter Hess from Cyprus Plateau Mining Corporation).

**RECOMMENDATION:**

The permittee should submit information related to the activities conducted during the July 1997 to control the underground water encountered. Additional changes related to the PHC can be coordinated with the proposed dewatering of the "K" and "C" seams.