



State of Utah

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

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March 10, 1993

TO: Pamela Grubaugh-Littig, Permit Supervisor

FROM: Thomas Munson, Reclamation Hydrologist *TM*
Ken Wyatt, Reclamation Hydrologist *KW*

RE: Updated Hydrologic Consequences (PHC) Review, Cyprus Plateau Mining Corporation, Star Point Mine, ACT/007/006, Folder #2, Carbon County, Utah

Synopsis

On December 14, 1992, Cyprus Plateau Mining Company (CPMC) submitted a revised water monitoring plan to include certain water monitoring stations. On January 15, 1993, CPMC submitted a response to the Division's December 2, 1992 PHC review letter which incorporated changes to the operation's PHC. This memo will combine the review of the water monitoring plan submitted on December 14, 1992 and the January 15, 1993 PHC response.

Analysis

The operator has assembled statistical data to provide baseline water data from springs, wells and surface water sources. Baseline water quality characterizations presented in Exhibit 728h and the visual comparisons made through the use of stiff diagrams on Map 728a aid in this comparison.

An aggressive program of in-mine monitoring well development to verify statistical and known groundwater conditions will be necessary to complete this data base during the operation of this mine.

The necessary changes required to satisfy the Division's water monitoring guidelines for future monitoring and to verify predictions regarding water quality and ground water occurrence are outlined below.

The operator proposes, in Table 728h: Proposed In-Mine Well Monitoring Schedule, that all in-mine wells would be sampled annually for water quality after the second year. The Division's current position is that this proposal is not acceptable for the following reasons:

- 1) The revised water monitoring schedule was compared to the previous water monitoring schedule. The revised plan is to collect quarterly baseline water quality information for at least one year from wells P92-01C-WD, P92-02-WD, P92-03-WD, and then collect operational water quality samples once a year. The Division's current regulations require that operators collect baseline water quality data for two years and quarterly operational water quality and quantity data for the remainder of the permit term through reclamation.

If CPMC is requesting a variance from these requirements, then the operator must submit a request after collecting baseline data for one year (i.e., after July 1993 for the above mentioned wells), summarizing the data collected to date together with an explanation of why this variance is warranted. Without a review of baseline data, summarized and submitted to the Division at the end of one year, the Division does not approve the water monitoring program submitted beyond July 1993 for the above mentioned wells.

- 2) The Division has reviewed the plans for collecting additional data from the Castle Valley Ridge area in regards to drill hole location and completion of in-mine monitoring wells. This monitoring program is a required program to collect additional data to verify conclusions made in the PHC regarding water quality and the groundwater gradients in the Castle Valley Ridge.
- 3) Specific responses to Division comments dated December 2, 1992 includes the following six items:
 - i. Page 728-4: This referred to the analysis of the strata potentially impacted below the coal seam. The operator has responded by committing to (pages 700-82n & 700-82o) to drill past the Spring Canyon member of the Star Point Sandstone into the Storrs member. Further the use of straddle packers to isolate the two members is one option and the Division recommends using the packer/slug testing methods. On page

700-82n the operator states that this monitoring will be performed if feasible at the time of drilling. **A firm commitment to conduct this testing is required and must be submitted for inclusion into the PAP.**

- ii. Page 728-8: The operator commits to notifying the Division prior to commencement of drilling. The Division does realize the complexity of drilling programs and schedules. In order to have the option to witness drilling activities, the Division appreciates advance notification to the extent practical.
- iii. Page 728-10: This comment requested that the operator justify their opinion as to the loss of water into the groundwater system from Nuck Woodward Creek. Table 728f on page 700-76a was added to demonstrate that sections of Nuck Woodward Creek are losing reaches. The flows presented in this table were acquired from field surveys performed by CPMC using a portable weir for flow measurement.
- iv. Page 728-19: This comment requested that the Division be notified in the event that flows greater than five gallons per minute are encountered during drilling. Page 700-82g commits CPMC to notify the Division should water in quantities greater than five gallons per minute for periods longer than one month.
- v. Page 728-25, 2nd paragraph: This comment again requested that the Division be notified 30 days prior to drilling and the location and schedules be provided. Item i above includes this commitment.
- vi. Page 728-25, 3rd paragraph: This comment requests that CPMC adhere to the baseline monitoring requirements according to the Division's guidelines for all new water monitoring locations. The specifics of baseline monitoring are described in Table 728h; however, the frequency of quality monitoring is not approved on an annual basis for the second year. On Page 700-82o-1 the operator commits to using baseline parameters if the Division does not approve a revised baseline parameter list. Baseline data, summarized and submitted to the Division at the end of one year must be evaluated before the baseline

monitoring program can be changed at any water monitoring location.

Recommendations

1. The water monitoring plan regarding newly constructed monitoring wells not be approved beyond July 1993. The operator must submit a request for a variance after collecting the baseline list of parameters for one year (i.e., after July 1993) summarizing this data collected to date together with an explanation of why this variance is warranted. The Division does not approve the water monitoring program for wells P92-01C-WD, P92-02-WD, P92-03-WD and P92-04-WD submitted beyond July 1993 until a variance for those above mentioned wells is granted. The review of that request will be completed by the Division in a timely manner.
2. Well 92-10-1 can be monitored for water level starting in January of 1993, based on the feasibility of collecting water quality data from a well 568 feet deep.
3. Well 86-18-2 can be deleted from the monitoring program because it has been destroyed by mining.
4. It is appropriate that Gentry Mountain mine flows be monitored for the baseline parameter list until October of 1993 and the same variance be requested regarding baseline parameter list monitoring at the end of one year based on a review of data, summarized and submitted to the Division at the end of one year of water monitoring data.
5. The operator must revise their water monitoring commitments as discussed in the analysis section above.