

WATER QUALITY MEMORANDUM

Utah Coal Regulatory Program

July 10, 2006

TO: Internal File

THRU: D. Wayne Hedberg, Permit Supervisor *DWH*

FROM: Steve Fluke, Reclamation Hydrogeologist *SF*

RE: 2005 Fourth Quarter Water Monitoring, Task No. 2491, Genwal Resources, Inc., Crandall Canyon Mine, C0150032

1. Was data submitted for all required monitoring sites? YES [X] NO []

The Crandall Canyon Mine is currently operational. Water monitoring data is evaluated from the data that is submitted quarterly by the mine to the Division EDI database. The abbreviated and extended groundwater analysis list, abbreviated and extended surface-water analysis list, and water monitoring program are outlined in the mine's MRP in Tables 7-4, 7-5, 7-8, 7-9, and 7-10, respectively. Quarterly groundwater monitoring for the Crandall Canyon Mine is required for four quarters, however many of the monitoring sites are inaccessible during the first quarter due to remote locations and winter conditions. Monthly UPDES reporting requirements are presented in Appendix 5-14 of the MRP. Plate 7-18 presents the Crandall Canyon Mine Water Monitoring Sites Map.

Surface *Operational sampling is required quarterly for twelve stream monitoring sites. Seven sites have been added beginning with the second quarter 2005 for the South Crandall Lease area and the Shingle Canyon IBC.*

All surface monitoring sites were sampled and data submitted for the 2005 fourth quarter monitoring.

Groundwater and Wells *Operational sampling is required quarterly for fourteen spring monitoring sites and eleven in-mine monitoring well sites. However, only two of those in-mine monitoring sites (wells) are currently accessible (DH-1 and MW-1) and one has been destroyed. Ten spring sites have been added beginning with the second quarter 2005 for the South Crandall Lease area and the Shingle Canyon IBC.*

All groundwater monitoring and accessible in-mine monitoring sites were sampled and data submitted for the 2005 fourth quarter monitoring.

UPDES *Operational sampling is required monthly for two active UPDES sites; sediment pond discharge UT0024368-001 and mine water discharge UT0024368-002.*

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The UPDES sites were sampled monthly and data submitted for the 2005 fourth quarter monitoring.

2. Were all required parameters reported for each site? YES [X] NO []

Surface All required parameters, including baseline resampling parameters, were reported.

Groundwater and Wells All required parameters, including baseline resampling parameters, were reported.

UPDES All required parameters were reported.

3. Were any irregularities found in the data? YES [X] NO []

Surface No irregularities were found in the data with the following exceptions:

UPF-1 – TDS, total hardness and sulfate were reported above two standard deviations.

LOF-1 – TDS, total hardness, and sulfate were reported above two standard deviations.

Trends - Total dissolved solids, dissolved calcium, and sulfate have been steadily increasing in UPF-1 and LOF-1 since 2000 and 2001. Dissolved sodium has been steadily increasing in LOF-1 during this period. Levels do not exceed regulatory limits and may be do to drought conditions. This trend is not observed in other monitored streams for the permit area.

Groundwater and Wells No irregularities were found in the data with the following exceptions:

SP-58 – TDS and sulfate were reported above two standard deviations. These parameters have been steadily increasing since 2000 and 2001.

UPDES No irregularities were found in the data.

4. On what date does the MRP require a five-year resampling of baseline water data?

Sampling and analyses for baseline parameters (Tables 7-5 and 7-9 in the MRP) are to be performed during low-flow (fourth quarter) in 1990, 1995, 2000, and at five-year intervals thereafter until the surety bond is released.

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Baseline resampling was conducted on all sites requiring quarterly laboratory analysis. All required parameters were reported and no irregularities or trends were identified as a result of the baseline resampling. The next baseline resampling is scheduled for fall 2010.

5. Based on your review, what further actions, if any, do you recommend?

Surface Continue tracking the trend of elevated constituents in Crandall Canyon Creek (UPF-1 and LOF-1). Arrange meeting with the Mine operator and hydrologist to discuss issue. Erik Petersen has stated that he is preparing a report to address the issue.

Groundwater and Wells Continue tracking the trend of elevated constituents in SP-58. Arrange meeting with the Mine operator and hydrologist to discuss issue. Erik Petersen has stated that he is preparing a report to address the issue.

UPDES No further action recommended.

6. Does the Mine Operator need to submit more information to fulfill this quarter's monitoring requirements? YES [] NO [X]

7. Follow-up from last quarter, if necessary. Did the Mine Operator submit or provide an explanation for missing and/or irregular data?

No follow-up from last quarter necessary.