WATER QUALITY
M E M O R A N D U M

Utah Coal Regulatory Program

February 10, 2006

TO: Internal File

THRU: Wayne Hedberg, Permit Supervisor

FROM: Steve Fluke, Reclamation Hydrogeologist

RE: 2004 Fourth Quarter Water Monitoring, Genwal Resources, Inc., Crandall Canyon Mine, C/015/0032-WQ04-4, Task ID #2487

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 five stream monitoring sites.*

All surface monitoring sites were sampled and data submitted for the 2004 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 wells are currently accessible (DH-1 and MW-1) and one has been destroyed.*

All groundwater monitoring and in-mine monitoring sites were sampled and data submitted for the 2004 fourth quarter monitoring. No access was reported for SP-47A, SP1-19, SP1-22, and SP1-24, due to early snowfall.

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

The UPDES sites were sampled and data submitted for the 2004 fourth quarter monitoring.

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

Surface All required parameters were reported.

Groundwater and Wells All required 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 and total hardness concentrations are reported above two standard deviations.

LOF-1 – TDS and total hardness concentrations are 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 exception:

SP-58 – TDS is reported above two standard deviations.

SP1-9 – total iron is reported at 1.67 mg/L, greater than the Class 3A Cold Water Aquatic Wildlife limit of 1.0 mg/L.

Trends – TDS and sulfate concentrations have increased in SP-58 since 1999. All springs with laboratory parameters show slight increased concentrations in dissolved calcium since 1999, especially noticeable in SP-58. Levels do not exceed regulatory limits and may be do to drought conditions.

UPDES No irregularities were found in the data with the following exception:

002 (Mine water discharger to Crandall Creek) – TDS concentration for for October 2004 was reported at 1206 mg/L, which exceeds the UPDES daily maximum limit of 723 mg/L. No explanation was given in the database and the exceedence went unnoticed by DEQ and DOGM. The Permittee did not notify DEQ of the exceedence within 24 hours as specified in their permit.

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.

The next baseline resampling is scheduled for 2005. No baseline resampling data for 2000 has been submitted to the database. Gary Gray believes that the 2000 baseline resampling was conducted, but cannot find the data. The Division has decided to allow the Permittee to conduct a baseline resampling during spring of 2005 as well as the scheduled fall of 2005 to make up for the lost data.

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.

Groundwater and Wells Continue tracking the trend of elevated constituents in SP-58. Arrange meeting with the Mine operator and hydrologist to discuss issue. Elevated concentration of total iron reported for SP1-9 appears to be an anomaly. Continue tracking to make sure this is not a trend.

UPDES DOGM has informed DEQ of the TDS exceedence at UPDES Site #002. The two agencies are meeting with the mine operator to discuss the issue to make

sure reporting procedures are properly followed in the future.

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?

Need missing data for MW-1 input to the EDI.

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