

WATER QUALITY MEMORANDUM

Utah Coal Regulatory Program

March 23, 2010

TO: Internal File

THRU: James D. Smith, Permit Supervisor *DS 29 Mar 10*

FROM: Steve Christensen, Environmental Scientist *SLC*

RE: 2008 First Quarter Water Monitoring, West Ridge Resources, West Ridge Mine, Task ID #3134

The West Ridge Mine is currently operational in the Book Cliff Mountain range of Carbon County, UT. Water monitoring data is submitted quarterly to the Division EDI database. Beginning on page 7-34 of the approved Mining and Reclamation Plan (MRP), water monitoring protocols and sampling requirements are provided for surface water, ground water, monitoring wells and UPDES outfalls in Tables 7-1, 7-2, 7-3 and 7-4 respectively.

1. Was data submitted for all of the MRP required sites? YES NO

Springs

The approved MRP outlines the monitoring of 10 springs. Four of the springs (SP-12, SP-13, SP-15 and SP-16) discharge from the lower slopes of West Ridge in Whitmore Canyon. Two springs (WR-1 and WR-2) discharge from the upper slope of West Ridge in Whitmore Canyon. One spring (SP-8) discharges in the upper drainage of C Canyon. Hanging Rock Spring (S-80) is located near the northwest corner of the permit area and discharges from the east slopes of Whitmore Canyon. Spring 101 monitors Little Spring at the bottom of West Ridge. Spring 102 is located within Spring Canyon.

Of the 10 springs, only 9 were accessible during this quarter. Spring SP-15 was accessible; however, no flow was observed at the time of monitoring.

Streams

The approved MRP outlines the monitoring of 12 stream sites. Grassy Trail Creek is the only perennial stream in the permit and adjacent areas. Operational sampling is required quarterly for six stream sites (ST-3, ST-8, ST-9, ST-10, ST-13 and ST-15). Four sites (ST-5, ST-

6, ST-6A and ST-7) are equipped with automatic samplers that are required to be checked following precipitations events. Sites ST-11 and ST-12 were added to the water-monitoring program based upon field inspections conducted in 2005. The field inspections were conducted as part of a proposed lease expansion by the Permittee. At the time of the inspections, the Bear Canyon drainage had exhibited measurable flow. As a precaution, sites ST-11 and ST-12 were established within that drainage. Since that time (summer of 2005) neither site has produced appreciable/measurable flow. However, the sites remain as part of the surface water monitoring program and are inspected quarterly.

Of the 12 stream monitoring sites, all but 3 were inaccessible due to snow/mud conditions. Monitoring sites ST-5, ST-6 and ST-6A were accessible and all required parameters were submitted.

Wells

Operational sampling is required quarterly for one groundwater monitoring well (Site DH 86-2).

Monitoring well DH 86-2 was sampled during this quarter and all required data submitted.

UPDES

Operational sampling is required monthly for two active UPDES sites (Permit # UT0025640). Site D001 is the mine sites primary sediment pond discharge to the ephemeral 'C' Canyon drainage. Site D002 is the mine-water discharge to the ephemeral 'C' Canyon drainage. Specific limitations and self-monitoring requirements are presented in the table below:

| Effluent Characteristics | Effluent Limitations |
|-------------------------------------|----------------------|
| Flow, MGD (million gallons per day) | 1.0 |
| Total Suspended Solids (TSS), ppm | 70 |
| Total Iron, ppm | 1.3 |
| Oil & Grease, ppm | 10 |
| Total Dissolved Solids (TDS), ppm | 2,000 |
| pH | 9 |

The Permittee submitted all required samples per the terms of the UPDES discharge permit.

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

Surface Water Monitoring Sites: Of the 12 stream monitoring sites, all but 3 were inaccessible due to snow/mud conditions. Monitoring sites ST-5, ST-6 and ST-6A were accessible and all required parameters were submitted.

Groundwater and Well Monitoring Sites: Of the 10 springs, only 9 were accessible during this quarter. Spring SP-15 was accessible; however, no flow was observed at the time of monitoring.

UPDES: Site D001 did not produce any discharge during this quarter. All required parameters were reported for Site D002.

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

Surface Water Monitoring Sites:

Surface water monitoring site ST-5 produced a flow value of 762.96 gpm, which is 2.10 standard deviations from the mean value of 133.22 gpm. One standard deviation is 299.76 gpm. The change in flow rate at this monitoring point is likely due to alterations/changes in the underground condition within the mine workings. The increase in flow at ST-5 is inconsistent with the flow value obtained at the upstream site ST-6. As the primary source of water within the 'C' Canyon drainage is the mine-water discharge, a similar increase in flows at ST-6 should've been reported as well.

Groundwater Monitoring Sites:

Of the 10-groundwater monitoring sites, 9 were inaccessible. The one site that was accessible (SP-15) did not produce a measurable flow during this quarter.

UPDES Sites:

Site D001 (primary sediment pond at mine site) did not discharge during the 1st quarter of 2008.

Site D002 (mine-water discharge) reported a total suspended solids (TSS) value of 103 ppm, which exceeds the 70 ppm standard established in the Permittee's UPDES Discharge Permit (# UT0025640).

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

On page 7-35 of the approved MRP, the Permittee commits to collecting baseline samples "from each spring in the monitoring program during the low flow (fall) sampling and

from each stream monitoring sites during low flow every five years beginning with the first mid-term review.”

The Division initiated the last mid-term review on November 9th, 2006. As such, baseline sampling of ground and surface water sites will be required during the 3rd quarter of 2011.

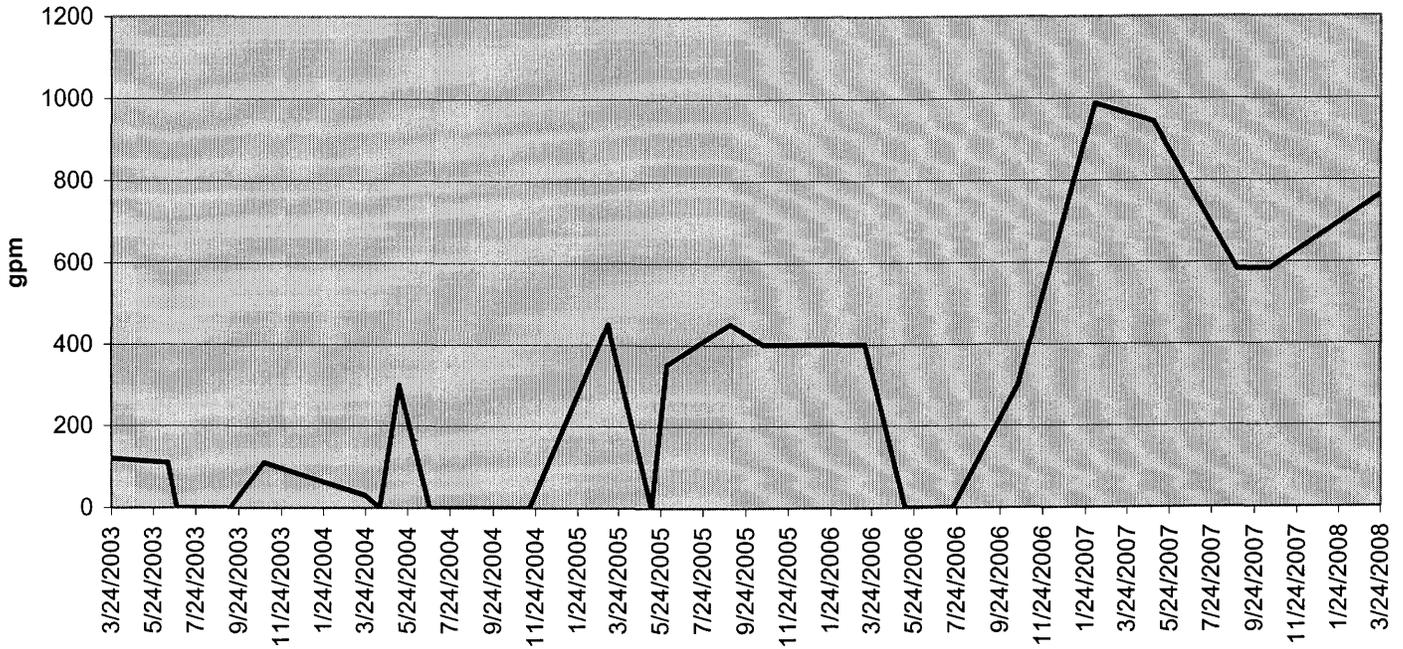
5. Based on your review, what further actions, if any, do you recommend?

Continue to monitor the volume of mine-water discharge (UPDES 002) and TSS levels.

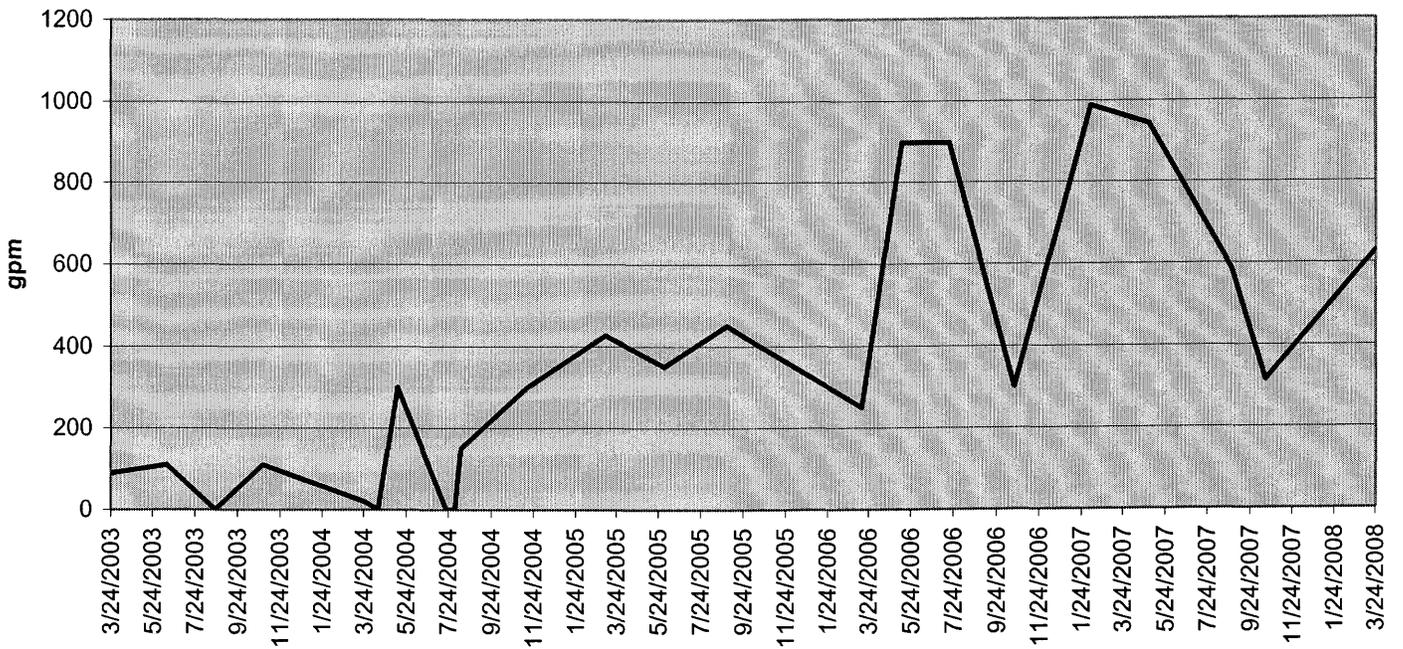
Look to see if the increased flow value for ST-5 continues or begins to correlate with flow values obtained at upstream monitoring site ST-6.

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ST-5: Flow Values



ST-6: Flow Values



Well DH 86-2

