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WATER QUALITY MEMORANDUM

Utah Coal Regulatory Program

December 22, 2009

TO: Internal File

THRU: James Smith, Permit Supervisor *RSJ*

FROM: Kevin Lundmark, Environmental Scientist II *klw*

RE: 2008, 1st Quarter Water Monitoring, Canyon Fuel Company (CFC), LLC, Dugout Mine, C/007/0039-WQ08-1, Task ID #3181

Canyon Fuel Company is conducting mining operations in Dugout Canyon. Mining is progressing north and eastward under the Book Cliffs. Several springs are located in the canyons. Operations are also taking place at a fan portal in Pace Canyon and a refuse pile in the valley below Dugout Canyon. This report is based on data compiled in file O:\0070039.dug\WaterQuality\Dugout_All_Dec2009.xls.

Table 7-4 of the MRP identifies the ground water monitoring (frequency) plan for wells and springs. Table 7-4 also identifies the parameters that will be monitored. Appendix 7-6 of the MRP identifies the UPDES sites, and current status monitoring parameters, discharge limits and monitoring frequency. Table 7-5 identifies the surface water program and water quality parameters that will be monitored.

The protocols set forth in Table 7-4 and 7-5 identify monitoring programs to be followed during years of normal precipitation and non-normal precipitation, as defined in the PHC. Selected surface and groundwater sites will be monitored weekly from April 1 through August 31 during the first non-normal wet (>110% of average) and dry (<70% of average) years following permit issuance, as defined by the NRCS snow pack for the Price - San Rafael area on March 1. The first non-normal dry year occurred in 2002, and weekly monitoring was completed April to August 2002 per the protocol. The NRCS snow pack data on February 29, 2008 for the Price-San Rafael area was 108% of average, as reported in the Dugout Canyon 2007 Annual Report.

1. Was data submitted for all required sites?

Springs YES [X] NO []

Springs in the operational and post-mining groundwater monitoring program include SC-65, SP-20, SC-14, SC-100, SC-116, 200, 203, 227, 259, 259A and 260. Locations of these springs are noted on Plate 7-1. Groundwater discharge from the old

Gilson coal seam workings is also monitored and identified as location MD-1.

Spring MD-1 reported no flow. All other springs were not accessible due to snow.

Streams YES [] NO [X]

Surface Water sites DC-1, DC-2, DC-3, PC-1a, PC-2, PC-3, FAN and RC-1 and FAN are monitored for flow and chemistry once each calendar quarter during years with normal precipitation.

Site PC-3 was not monitored 1st quarter 2008. Stream site RC-1 reported no flow. Sites DC-1 and PC-2 reported flows of 716 gpm and 803 gpm, respectively. All other stream sites were not accessible due to snow.

Wells YES [X] NO []

Table 7-4 and Section 731.200 of the MRP specify that wells GW-10-2, GW-11-2 and GW-24-1 are to be monitored quarterly for water levels. Well GW-24-1 became blocked during the winter of 1999-2000 and was removed from monitoring after 4th Quarter 2004.

Wells GW-10-2 and GW-11-2 were not accessible due to snow. Though not required by the MRP, water level data were collected for wells DH-1, DH-2 and DH-3.

UPDES YES [] NO [X]

There are six discharge sites from the disturbed area and mine into Dugout and Pace Canyon Creeks under UPDES permit UT0025593 issued by the Utah Division of Water Quality. The permit identifies the maximum discharge levels and monitoring requirements for specified constituents. Mine water is currently pumped directly into the Dugout Creek (001). Disturbed runoff is directed to the sedimentation pond that can discharge to the Dugout Creek (002). Discharge Site 003 is a discharge from the 30,000-gallon water tank and Site 004 is the discharge from the waste rock area. Mine water is pumped to Pace Creek (005) out the Fan Portal. Disturbed area runoff from Pace Canyon is directed to a catch pond, which discharges to Pace Creek (006).

Sites 002, 004 and 006 did not discharge during 1st quarter 2008. Site 001 discharged between 3 to 485 gpm, Site 003 discharged 0 (no discharge) to 500 gpm, and Site 005 discharged 32 to 794 gpm.

2. Were all required parameters reported for each site?

Springs YES [] NO []

Not applicable this quarter.

Streams YES NO

The required parameters were reported when flow was present.

Wells YES NO

Not applicable this quarter.

UPDES YES NO

The required parameters were reported when discharges took place.

3. Were irregularities found in the data?

Springs YES NO

Not applicable this quarter.

Streams YES NO

The sample collected at site DC-1 contained concentrations of dissolved sodium and alkalinity, which were higher than previously measured. Site PC-2 contained elevated concentrations of dissolved sodium, potassium, chloride and sulfate. The sodium, chloride and sulfate concentrations at PC-2 are the maximum concentrations detected at this site to date.

Wells YES NO

Not applicable this quarter.

UPDES YES NO

The total iron concentration was 1.12 mg/L in the sample from Site 001 on March 13, 2008, which exceeds the UPDES discharge limitation of 1.1 mg/L. The total iron concentration in other samples collected during 1st quarter 2008 at Site 001 ranged from 0.58 to 1.09 mg/L.

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

The resampling due date is July 2014.

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

None.

Does the Mine Operator need to submit more information to fulfill this quarter's monitoring requirements? [] Yes [X] No

A copy of the data file will be e-mailed to the Mine Operator and DOGM Mine Inspector identifying any missing and irregular data.

6. Follow-up from last quarter, if necessary.

Did the Mine Operator submit all the missing and/or irregular data (datum)?

This report and the previous report were delayed to process mine permits.