0006

WATER QUALITY MEMORANDUM

Utah Coal Regulatory Program

January 29, 2008

TO: Internal File

THRU: Pamela Grubaugh-Littig, Permit Supervisor

FROM: Dana Dean, P.E., Senior Reclamation Hydrologist

RE: 2007 First Quarter Water Monitoring, Canyon Fuel Company, LLC, Skyline Mine, C/007/0005-WQ07-1, Task ID #2639

The Skyline Mine is an operating longwall mine. Current operations are in the North Lease area of the mine. Many mined-out areas of the mine have been sealed-off. Water monitoring requirements can be found in Section 2, especially pages 2-36, 2-36a, 2-36b, 2-37, 2-37a, and 2-39aa of the MRP.

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

Springs

The MRP does not require winter sampling for springs.

Streams

The MRP requires spring sampling at 15 stream-sites (CS-6, CS-12, CS-13, CS-14, MD-1, SRD-1, VC-6, VC-9, VC-10, MC-1, MC-2, MC-3, MC-4, MC-5, and MC-6).

The Permittee submitted all required samples for the stream sites.

Wells

The MRP requires spring sampling at 3 wells (JC-1, JC-3, and ELD-1).

The Permittee submitted all required samples for the well sites.

UPDES

The UPDES Permit/MRP require weekly monitoring of 3 outfalls: 001, Sedimentation Pond Discharge to Eccles Creek at the Portal; 002, Sedimentation Pond Discharge to Eccles Creek at the Loadout; and 003, the Sedimentation Discharge at the Waste Rock Disposal Site. Well JC-3 is permitted as a UPDES point, but PacifiCorp is

the Permittee, and JC-3 has not discharged since July of 2004.

The Permittee submitted all required samples for the UPDES sites. Only outfall 001 reported flow.

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

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

Several routine Reliability Checks were outside of standard values. They were:

Site	Reliability Check	Value Should Be...	Value is...
CS-6	Conductivity/Cations	>90 & < 110	86
CS-6	Mg/(Ca + Mg)	< 40 %	53%
CS-6	Ca/ (Ca + SO4)	> 50 %	39%
CS-12	Conductivity/Cations	>90 & < 110	86
CS-12	Mg/(Ca + Mg)	< 40 %	52%
CS-12	Ca/ (Ca + SO4)	> 50 %	34%
CS-14	Conductivity/Cations	>90 & < 110	80
CS-14	Mg/(Ca + Mg)	< 40 %	47%
VC-6	Mg/(Ca + Mg)	< 40 %	51%
VC-6	Ca/ (Ca + SO4)	> 50 %	41%
VC-9	Mg/(Ca + Mg)	< 40 %	54%
VC-9	Ca/ (Ca + SO4)	> 50 %	38%

These inconsistencies do not necessarily mean that a sample is wrong, but it does indicate that something is unusual. An analysis and explanation of the inconsistencies by the Permittee would help to increase the Division's confidence in the samples. The Permittee should work with the lab to make sure that samples pass all quality checks so that the reliability of the samples does not come into question. The Permittee can learn more about these reliability checks and some of the geological and other factors that could influence them by reading Chapter 4 of *Water Quality Data: Analysis and Interpretation* by Arthur W. Hounslow. A geological influence is most likely here, since most samples have the same inconsistencies, and they recur each quarter.

The Utah Division of Water Quality (DWQ) issued the current UPDES permit on Nov. 23, 2004. It allows for a daily maximum of total dissolved solids discharged (TDS) of 1310 mg/l and a 30-day average of 500 mg/l. There is no tons per day (tpd) daily maximum, unless the 30-day average exceeds 500 mg/l; then a 7.1-tpd limit is imposed. The permit also states:

Upon determination by the Executive Secretary that the permittee is not able to meet the 500 mg/L 30-day average or the 7.1 tons per day loading limit, the permittee is required to participate in and/or fund a salinity offset project to include TDS offset credits, within six (6) months of the effective date of this permit.

The Division of Water Quality approved a Salinity Offset Plan for the Skyline Mine on January 5, 2005. A copy of the agreement can be found in the Division's Incoming files, and at:

https://fs.ogm.utah.gov/FILES/COAL/PERMITS/007/C0070005/2005/INCOMING/0006.pdf.

For the first quarter of 2007, the Permittee has not exceeded the daily max of 1310 mg/L for TDS. However, at Outfall 001 the 30-day average has remained above 500 mg/l and the tons per day are much greater than 7.1. Because of these exceedences, Canyon Fuel Company continues to participate in the salinity-offset program.

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

There is no commitment in the MRP to resample for baseline parameters. However, they are required to monitor 8 stream sites (CS-1, CS-7, CS-8, CS-10, CS-16, CS-17, CS-18, and VC-10) and 13 springs (S13-2, S14-4, S15-3, S22-5, S22-11, S23-4, S24-12, S26-13, S34-12, S35-8, S36-12, 2-413, and 3-290) for all operational parameters at high and low flow (where accessible) once every five years (2010, 2015, etc.), and whenever abrupt changes in flow occur.

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

No further actions are necessary at this time.

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