



WATER QUALITY MEMORANDUM

Utah Coal Regulatory Program

September 29, 2017

TO: Internal File

THRU: Steve Christensen, Permit Supervisor 

FROM: Arati Umarvadia, Hydrologist 

RE: 2017 First Quarter Water Monitoring, Canyon Fuel Company, LLC, C/007/0005, Task ID #5479

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, 2-38, and 2-39 of the MRP.

1. Were data submitted for all of the MRP required sites?

YES NO

Second, Third, and Fourth Quarter monitoring requires regular information from 76 sites. Additional locations on streams in the North Lease are monitored for one year before, during, and for one year after their being undermined.

Note: Samples are analyzed for tritium at several sites, plus deuterium, carbon¹⁴, and oxygen¹⁸ at JC-1. Because determinations of isotopic concentrations can require several months, these values are often reported later than those from field measurements and routine laboratory analyses. The Permittee has always been prompt at getting the isotopic data to the Division as soon as they are received from the lab.

In-mine

The MRP requires sampling at 6 sites categorized as "other" or "in-mine, roof drippers". All 6 are monitored at the surface: CS-12, CS-14, CS-13, MD-1, ELD-1, and SRD-1 are mine discharge stations; CS-13 is a French drain; and ELD-1 is the combined output of JC-1 and JC-3. The Permittee submitted all required information for these sites.

The Permittee did not submit data for MD-1.

Springs

Twenty-five springs are monitored for 2nd, 3rd, and 4th Quarters: S10-1, S12-1, S13-2, S13-7, S14-4, S17-2, S22-5, S22-11, S23-4, S24-1, S24-12, S26-13, S34-12, S35-8, S36-12, 2-

413, 3-290, 8-253, WQ1-1, WQ1-39, WQ3-6, WQ3-26, WQ3-41, WQ3-43, and WQ4-12..

No springs are required for 1st quarter.

Streams

The MRP requires 30 sites during the Second, Third, and Fourth Quarters: CS-3, CS-6, CS-7, CS-8, CS-9, CS-10, CS-11, CS-16, CS-17, CS-18, CS-19, CS-20, CS-21, CS-22, CS-23, CS-24, CS-25, F-10, UPL-10, VC-6, VC-9, VC-10, VC-11, VC-12, WRDS-1, WRDS-2, WRDS-3, WRDS-4, EL-1, and EL-2. EL-1 and EL-2 are for tritium analysis only.

The MRP requires 8 sites to be sampled in First Quarter: CS-12, CS-13, CS-14, CS-6, VC-6, VC-9, VC-10, and SRD-1.

The Permittee monitors additional stream sites in the North Lease (designated as NL-1 through NL-42) monthly for 12 months before, during, and 12 months after their being undermined by the longwall. Monitoring results are reported in the Annual Hydrologic Report (Sec. 2.4.4) and submitted to the database. The Permittee commits to measuring the flow monthly in June through October, and measuring flow during other months if the sites are accessible.

The Permittee did not submit data for SRD-1.

Wells

Water levels are measured at 13 wells during the Second, Third, and Fourth Quarters: W79-10-1B, W79-14-2A, W79-26-1, W79-35-1A, W79-35-1B, W2-1, W20-4-1, W99-4-1, W99-21-1, W20-28-1, 91-26-1, W91-35-1, and 92-91-03. Operational parameters are also measured at 92-91-03.

Monthly flow measurements are required year round at JC-1 and JC-3. During the Second, Third, and Fourth Quarters, the Permittee also measures all field parameters, TDS, TSS, and Total Phosphorous at both sites once per quarter, plus isotopes C¹⁴, Tritium, Deuterium, and O¹⁸ at JC-1 once per quarter.

ELD-1 is reported with the “other” or “in-mine, roof drippers” sites. Well JC-3 is permitted as a UPDES point by PacifiCorp. That permit requires PacifiCorp to report flow, oil & grease, TDS, NH₃, N as nitrate + nitrite, plus total and dissolved As, Cd, Cr, Cu, Fe, Pb, Hg, Ni, Se, Ag, Zn, and P. Since July 2004, JC-3 has discharged only once, in October 2007.

Shallow ground water along the Woods Canyon Creek is monitored by 9 piezometers: WC-1, WC-3N, WC-3S, WC-5N, WC-5S, WC-7N, WC-7S, WC-9N, and WC-9S.

The Permittee did not submit data for JC-1, JC-3, and ELD-1.

UPDES

The UPDES Permit and 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*. DMR parameters (total Fe, TDS, pH, TSS, flow, oil and grease, and specific conductivity, and temperature) are reported to the database as operational parameters. Total Fe is analyzed twice per month rather than weekly. Parameters that are not included in the operational parameter lists in the MRP - such as sanitary wastes, visible foam, and floating solids - are not reported in the electronic submittal to the Division.

Well JC-3 is permitted as a UPDES point by PacifiCorp. For JC-3, Skyline monthly flow and quarterly field parameters, TDS, TSS, and T-P during the Second, Third, and Fourth Quarters. (The UPDES permit for JC-3 requires PacifiCorp to report flow, oil & grease, TDS, NH3, N as nitrate + nitrite, plus total and dissolved As, Cd, Cr, Cu, Fe, Pb, Hg, Ni, Se, Ag, Zn, and P.) Since July 2004, JC-3 has discharged only once, in October 2007.

The Permittee did not submit the required information for the UPDES sites for the first quarter.

2. Were all required parameters reported for each site?

- Springs** YES NO
- Streams** YES NO
- Wells** YES NO
- UPDES** YES NO

3. Were any irregularities found in the data?

- Springs** YES NO
- Streams** YES NO
- Wells** YES NO
- UPDES** YES NO

UPDES permit UT0023540 (effective December 1, 2009) allows for a maximum daily effluent limitation (MDEL) for total dissolved solids (TDS) of 1,200 mg/L and a 30-day average of 500 mg/L. There is no tons/day loading limit unless the 30-day average exceeds 500 mg/l; then a 7.1 tons/day limit is imposed. Because of ongoing exceedances, particularly at outfall 001, Canyon Fuel Company participates in the Salinity Offset Plan that was approved by DWQ on January 5, 2005 (retroactive to September 2004).

Other YES NO

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

Beginning in 2010 and every five years thereafter, baseline analyses are to be done on samples collected during the 3rd Quarter (MRP p. 2-44). Baseline will be collected in 2020.

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

The Permittee must submit missing data. The Permittee must submit any age analysis when it becomes available.

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

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

The Permittee must submit outstanding age dating analysis and follow up on the missing data from 4Q16 and 1Q17.

8. Did the Mine Operator submit all the missing and/or irregular data (datum)?
No.