OK
#3210

WATER QUALITY MEMORANDUM
Utah Coal Regulatory Program

April 13, 2009

TO: Internal File

THRU: Jim Smith, Permit Supervisor

FROM: April A. Abate, Environmental Scientist II 4-13-09

RE: 2008 Third Quarter Water Monitoring, Canyon Fuel Company, LLC, SUFCO Mine, C/041/0002, WQ08-3, Task ID #3210

The SUFCO Mine is an operating longwall mine. Current operations are in the Quitchupah and Muddy Tracts. Water monitoring requirements can be found in Section 7.3.1.2 of the MRP, especially Tables 7-2, 7-3, 7-4, 7-5, and 7-5A. Page 7-48 contains the important statement that (non Box-Canyon, non-UPDES) "monitoring sites are sampled three times per year," meaning the second, third, and fourth quarters.

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

Springs

The MRP requires the Permittee to monitor 25 springs during the third quarter. Some require full laboratory analysis according to Table 7-4, while others simply require field measurements.

The Permittee submitted all required samples for the spring sites.

Streams

The MRP requires the Permittee to monitor 20 streams during the third quarter.

The Permittee submitted all required samples for the stream sites. One additional sample USFS-110 is listed in the database. This sample area represents the Upper Main Fork of Box Canyon Creek; however this monitoring point is not listed in the MRP on Table 7-2.

Wells

The MRP requires the Permittee to monitor water levels for six wells during the third quarter. Two of these wells, US-80-4 and US-79-13 are only monitored once per year during the third quarter.

The Permittee submitted all required samples for the wells.
Monitoring data for four additional wells associated with the waste rock disposal site are listed in the database from wells WRDS-B3, WRDS-B5, WRDS-B6, WRDS-B8, WRDS-B9. These wells are also not listed in the MRP.

UPDES

The UPDES Permit/MRP require bi-weekly monitoring of 3 outfalls: 001, mine water discharge to Spring Canyon; 002, sedimentation pond discharge to Spring Canyon; and 003, the mine water discharge to the North Fork of Quitchupah Creek.

The Permittee submitted all required samples for the UPDES sites. Outfall 001 reported no flow this quarter. Outfall 002 reported no flow during the month of August 2008.

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

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

Reliability Checks

Many routine reliability checks fell outside of standard values:

Site	Reliability Check	Value Should Be...	Value is...
SUFCO 47	Conductivity/Cations	>90 & < 110	82
PINES 100	Na/(Na + Cl)	> 50%	47%
WRDS-B6	TDS/Conductivity	>0.55 & <0.75	88
WRDS-B6	Conductivity/Cations	>90 & < 110	77
WRDS-B6	Na/(Na + Cl)	> 50%	23
WRDS-B6	Mg/(Ca + Mg)	< 40 %	46
WRDS-B8	Conductivity/Cations	>90 & < 110	88
WRDS-B8	Na/(Na + Cl)	> 50%	41
SUFCO 41	Mg/(Ca + Mg)	< 40 %	52
SUFCO 42	Mg/(Ca + Mg)	< 40 %	47
SUFCO 47A	Na/(Na + Cl)	> 50%	44
PINES 403	Na/(Na + Cl)	> 50%	48
PINES 403	Mg/(Ca + Mg)	< 40 %	46

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.

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.

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

None.

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