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WATER QUALITY MEMORANDUM
Utah Coal Regulatory Program

November 21, 2012

TO: Internal File

THRU: Steve Christensen, Permit Supervisor SRC

FROM: April A. Abate, Environmental Scientist III AAA 11/26/2012

RE: 2012 Second Quarter Water Monitoring, Canyon Fuel Company, LLC, SUFCO Mine, C/041/0002, WQ12-02, Task ID #4128

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, see 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.

SUFCO has added two additional stream monitoring points to their plan: SUFCO 006A and SUFCO 006B are intended to monitor the upstream and downstream flow along the South Fork of Quitchupah Creek. Additional surface water and spring sample locations are proposed for the South Fork reach of Quitchupah located further downstream. These locations are still in the DOGM review and approval process.

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

Springs **YES** ☒ **NO** ☐

The MRP requires the Permittee to monitor 29 springs during the second, third, and fourth quarter as per Table 7-2. Some require full laboratory analysis according to Table 7-4, while others simply require field measurements.

All required springs were monitored during the second quarter of 2012.

Streams **YES** ☒ **NO** ☐

The MRP requires the Permittee to monitor 20 streams during the second, third and fourth quarter as per Table 7-2. Perennial stream monitoring of Box Canyon is required at

FP-1 and FP-2 at the beginning of the month of October each year.

All required streams were monitored during the second quarter of 2012.

Wells **YES** ☒ **NO** ☐

The MRP requires the Permittee to monitor water levels for 7 wells. Monitoring wells US-80-2, 89-20-2W, US-81-4, US-81-3 and 01-8-1 are monitored quarterly. Monitoring wells US-80-4 and US-79-13 are monitored annually during the 3rd quarter. Groundwater monitoring at the Waste Rock site occurs three times per year.

All wells including the waste rock wells were monitored in accordance with the monitoring plan during the second quarter of 2012.

UPDES

The UPDES Permit/MRP require bi-weekly monitoring of 3 outfalls: UT0022918-001: *mine water discharge to Spring Canyon;* UT0022918-002: *sedimentation pond discharge to Spring Canyon; and* UT0022918-003A*: 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. Other mine water discharge outfall locations reported the following:

	SED POND Q TO E SPRING CYN Outfall: UT0022918-002	Mine Water Discharge to N.Fk. Quitchupah Outfall: UT0022918-003A
Average Flow (gpm)	38	2,624
Average TDS (mg/L)	730	651

Oil and Grease (O&G) was detected at a concentration of 22 mg/l. The daily maximum for O&G is 10 mg/l. However, a subsequent sample collected in July 2012 indicated that O&G results were non-detect. All other parameters met the requirements of the UPDES Permit No. UT0022918.

Toxicity tests are required in the permit for Acute Whole Effluent Toxicity and Chronic Whole Effluent Toxicity. The permit requires semi-annual testing and are measured on a Pass/Fail basis. Mine water discharge from the North Fork of Quitchupah Creek (sample location UT0022918- 003W).

The toxicity sample passed during the second quarter of 2012.

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

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

Flow rates for the following sample locations reported results outside of at least two standard deviations:

Sample ID	Date	Parameter	Value	STD. Deviation
UT0022918-002	6/12/2012	O&G	22 mg/l	N/A
M-SP18	6/27/2012	Temperature	16.5 C	3.39
PINES 214	6/2/2012	Conductivity	785 umhos/cm	2.29
PINES 218	6/27/2012	Temperature	20.2 mg/l	3.47
006	6/1/2012	Conductivity	968 mg/l	2.02
		D-Na	84.1 mg/l	2.43
		Bcrb	355 mg/l	2.30
006A	6/1/2012	Conductivity	1182 umhos/cm	2.42
		D-Mg	37 mg/l	2.06
		D-Na	138 mg/l	2.45
		Cl	47 mg/l	2.44
		SO4	183 mg/l	2.31
		T-Alk	421 mg/l	2.23
		TDS	776 mg/l	2.43
		Bcrb	421 mg/l	2.28

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?

No recommendations are warranted at this time.