

# WATER QUALITY MEMORANDUM

## Utah Coal Regulatory Program

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January 26, 2016

TO: Internal File

THRU: Steve Christensen, Permit Supervisor

FROM: Keenan Storrar, Hydrologist

SUBJECT: Second Quarter 2015 Water Monitoring, Bear Canyon Mine, Castle Valley Mining, LLC, C/015/0025, Task ID #4907

The monitoring plan is described on pages 7-48 through 7-60A of the MRP. It includes Tables 7-12 through 7-17. The mine is operating under a permit held by Castle Valley Mining, LLC. The Permittee has recently been approved to reactivate the following water monitoring locations: Fish Creek Stream sample locations FC-2, FC-3, FC-4, FC-6, FC-7, FC- 8 and SMH-5 (a spring-fed stock watering trough). Spring SBC-18 has been reactivated.

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

**In-mine** YES  NO

A total of two in-mine samples are listed in the Bear Canyon water monitoring plan: SBC-9A and SCC-3. The Mohrland Portal discharge sample SCC-3 (16-8-8-10) is sampled for field parameters only in May, August and October of each year. The Hiawatha Seam sample, SBC-9A is sampled for operational parameters in February, May, August, and October (quarterly).

**Springs** YES  NO

Most of the spring samples in and around the Bear Canyon mine are sampled for field, or either operational or expanded list parameters once every five years prior to permit renewal. Active springs requiring operational parameter sampling during the months of February, May, August, and October include: SBC-4 Big Bear Springs, SBC-5 Birch Spring, and SBC-17 (16-7-24-4). SBC-14 requires operational monitoring in May, August and October only. Currently active springs requiring field parameter only measurements during the months of May, August and October include: SBC-14, SBC-15, SBC-16, SBC-16A, SBC-16B, SBC-17, SBC-18, SBC-20, SBC-21, SBC-22, SCC-2, and SMH-5. Monitoring has restarted for SBC-22 in the Q4 of 2013 and SBC-18 in Q2 2014. Weekly monitoring was restarted for 2013 at locations SBC-20, SBC-21, and SCC-2 on June 28, 2013.

**Streams** YES  NO

Active stream samples required for quarterly operational monitoring include: BC-1, BC-2, BC-3, BC-4, CK-1, and CK-2. Stream locations FC-1, FC-2, FC-3, FC-4, FC-6, FC-7, and FC-8 are sampled for field parameters only during the months of May, August and October. Bear Creek is the principal drainage that runs through the active mining area. SBC-4 and SBC-9 surface water samples are monitored quarterly for lead. CK-1 and CK-2 are the upstream and downstream locations for Cedar Creek located just outside the northeast portion of the permit boundary. Weekly monitoring was reinitiated at locations FC-3, -4, and -6 on June 28, 2013.

**UPDES** YES  NO

Five stations are monitored for the Bear Canyon UPDES permit on a monthly basis: Sediment Pond A (Outfall ID 002), Sediment Pond B (Outfall 003), Mine Water Overflow discharge to Bear Creek (Outfall 004), Sediment Pond C (Outfall 006), Sediment Pond D (Outfall 007). Only discharge point UTG040006-004 – Mine Water to Bear Canyon Creek reported monthly flow data.

**Wells** YES  NO

Three wells are monitored at the mine. SBC-3 (Creek Well) is monitored for operational parameters on a quarterly basis. MW-114 and MW-117 are gauged for depth to water level during May, August, and October.

**2. Were all required parameters reported for each site?**

**In-mine** YES  NO

**Springs** YES  NO

**Streams** YES  NO

**UPDES** YES  NO

**3. Were any irregularities found in the data?**

The following samples had concentrations two standard deviations above the mean.

**In-mine** YES  NO

**Springs** YES  NO   
SBC-4, SBC-5: Temperature

**Streams** YES  NO   
BC-3: TDS

**UPDES**

YES  NO

004: Temperature

Mine water from Bear Canyon Creek at 004 discharged each month in Q1 2015.

**Wells**

YES  NO

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

Baseline parameters are to be taken in August of year 5 prior to each permit renewal. The parameters are referred to as the "Expanded List" in Tables 7-13 and 7-17 of the MRP. The next permit renewal date is November 02, 2020.

Expanded List parameters were not sampled in August 2014. They will need to be sampled for High flow in June 2015. To make up for missing August 2014, the expanded list will be sampled in August 2015.

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

Mining in the Wildhorse Ridge/Mohlrland area began in the fall 2012.

**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.**

Weekly monitoring of FC-2, FC-3, FC-4, FC-6, SBC-18, BBC-20, SBC-21, and SCC-2 ceased for the 2014 season at the end of September.