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# WATER QUALITY MEMORANDUM Utah Coal Regulatory Program

September 24, 2012

TO: Internal File  
FROM: April A. Abate, Environmental Scientist III/Hydrogeologist *AAA 9/24/2012*  
THRU: Steve Christensen, Permit Supervisor *SCC*  
SUBJECT: 2012 1st Quarter Water Monitoring, Bear Canyon Mine, Castle Valley Mining, LLC, C/015/0025, Task ID #4014

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 now operating under a permit held by Castle Valley Mining, LLC. The Permittee has recently submitted an amendment 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). The following springs are due to be reactivated upon approaching within 500 feet of the Mohrland mining area: SBC-18, SBC-20, SBC-21, SBC-22, SCC-2. Final approval of the amendment is pending and is expected by October 8, 2012.

**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, sample SCC-3 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). SCC-3 - Mohrland Portal sample was not required to be sampled this quarter. In-mine sample SBC-9A was sampled on February 8, 2012 for operational parameters.

**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, 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-15, SBC-16, SBC-16A, SBC-16B.

During the 1st quarter, the required springs SBC-4, SBC-5 were monitored during the month of February for the required operational parameters. SBC-17 could not be accessed due to snow and ice.

**Streams**

YES  NO

Active stream samples required for quarterly operational monitoring include: BC-1, BC-2, BC-3, BC-4, CK-1, CK-2. Bear Creek is the principal drainage that runs through the active mining area. BC-2 is the downstream surface water sample from the mine facilities area. CK-1 and CK-2 are the upstream and downstream locations for Cedar Creek located just outside the northeast portion of the permit boundary. Stream location FC-1 is sampled for field parameters only during the months of May, August and October.

Flow was reported at BC-1, BC-2, and CK-2. All other stream sites were no flow. CK-1 was reported as inaccessible due to snow and ice. According to Table 7-14 of the MRP, operational monitoring at stream sampling sites is scheduled in February, May, August, and October.

**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 005), Sediment Pond D (Outfall 007). None of these stations reported any monthly flow data from the five stations during the 1st quarter of 2012 with the exception was discharge point UTG040006-004 - Mine Water to Bear Canyon Creek, which reported monthly discharges. Flow from this point averaged this quarter at 53 gallons per minute (gpm) and TDS concentrations averaged 999 mg/L. The Bear Canyon UPDES permit requires that if one outfall cannot meet the 30-day average of 500 mg/L at a discharge point then the sum of all permitted outfalls must meet 2,000 lbs per day limit. The Permittee is meeting their required TDS permit loading limits of under 2,000 lbs/day during the 1st quarter.

**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 only during the 3<sup>rd</sup> and 4<sup>th</sup> quarters. SBC-3 is the only well required to be monitored this quarter; however, the well was not sampled due to access issues associated with snow and ice.

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

<b>In-mine</b>	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>
<b>Springs</b>	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>
<b>Streams</b>	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>
<b>UPDES</b>	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>

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

<b>In-mine</b>	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
<b>Springs</b>	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
<b>Streams</b>	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>

All stream samples for total dissolved solids detections during this quarter were well below the state water quality standards of 1,200 mg/L. Total iron concentrations at all stream locations were reported below a concentration of 1.0 mg/L.

<b>UPDES</b>	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>
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Mine water from Bear Canyon Creek at Outfall 004 was the only point that discharged this quarter. Mine water has been continuously discharging from this location since May 2009.

<b>Wells</b>	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
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**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, 2015.

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

Weekly sampling of the reactivated spring and stream locations began on July 9, 2012. Mining in the Wildhorse Ridge/Mohlrland area is scheduled to begin this fall. The MRP requires that the springs above the mine workings in this area be monitored on a weekly basis. The Permittee has recently submitted an amendment to the Division to reactivate these spring and stream water monitoring locations in accordance with the specified protocol in the MRP.

*Per the request of the Division as a condition for final approval of this amendment to reactivate these locations, the Permittee was asked to provide a schedule via email of when mining is to occur in the Wildhorse Ridge/Mohrland areas.*

- 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 has requested that dissolved oxygen be added to the surface water monitoring plan. Final approval of the amendment to add DO to all surface water samples is pending and will begin with begin at the 4th quarter 2012 sampling event.

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