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# WATER QUALITY MEMORANDUM Utah Coal Regulatory Program

December 19, 2012

TO: Internal File

FROM: April A. Abate, Environmental Scientist III/Hydrogeologist *AAA*  
12-20-2012

THRU: Steve Christensen, Permit Supervisor *SCC*

SUBJECT: 2012 2nd Quarter Water Monitoring, Bear Canyon Mine, Castle Valley Mining, LLC, C/015/0025, Task ID #4110

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 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). 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. These changes will take effect with the 4th quarter 2012 sampling event.

**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 sampled this quarter for field parameters. In-mine sample SBC-9A was sampled on June 25, 2012 for operational parameters. According the Table 7-14 of the water monitoring plan, second quarter samples are supposed to be collected in the month of May, not June.

**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: SCC-2, SBC-15, SBC-16, SBC-16A, SBC-16B, SBC-18, SBC-20, SBC-21, SBC-22.

During the 2nd quarter, the required springs SBC-4, SBC-5, SBC-14, and SBC-17 were monitored during the month of June for the required operational parameters. Field measurements were collected from SCC-2, SBC-15, SBC-16, SBC-16A, SBC-16B, SBC-18, SBC-20, SBC-21, SBC-22.

**Streams**

YES  NO

Active stream samples required for quarterly operational monitoring include: BC-1, BC-2, BC-3, BC-4, CK-1, CK-2, FC-1, FC-2, FC-3, FC-4, FC-6, FC-7, FC-8 and SMH-5. 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 locations FC-1, FC-2, FC-3, FC-4, FC-6, FC-7, FC-8 and SMH-5 are sampled for field parameters only during the months of May, August and October.

Flow was reported at BC-1, BC-2, CK-1, CK-2, FC-1, and FC-4. All other stream sites were no flow. According to Table 7-14 of the MRP, operational monitoring at stream sampling sites is scheduled in February, May, August, and October. All stream sampling activities were conducted from June 24-25, 2012, not in May as specified by the MRP.

**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 2nd 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 73 gallons per minute (gpm) and TDS concentrations averaged 909 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 2nd 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 was monitored this quarter.

**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 type="checkbox"/>	NO <input checked="" 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 been approved to reactivate these spring and stream water monitoring

locations in accordance with the specified protocol in the MRP.

*A schedule via email of when mining is to occur in the Wildhorse Ridge/Mohrland area was provided to the Division. According to this schedule, mining is scheduled beneath the Fish Creek stream locations FC-3, FC-4, FC-6, FC-7, and FC-8. Mining is schedule to occur beneath spring locations SBC-20 and SBC-21 up through July 2013. A weekly sampling protocol is in place while mining beneath these locations and one month after mining through the area.*

*The Permittee is forwarding the weekly monitoring data to the Division. Currently there is no established schedule commitment in the MRP as to when the data will be delivered to the Division. The Division has asked the Permittee to amend the MRP to provide a commitment to providing the weekly monitoring schedule to the Division preferably on a once-a-month basis.*

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.**

Final approval of the modifications to the hydrologic monitoring plan amendment was given on September 26, 2012. The amendment added six stream samples along Fish Creek and five spring samples above the Mohrland #4 mine area. The addition of dissolved oxygen DO to the surface water operational sample list is approved and will begin at the 4th quarter 2012 sampling event.