WATER QUALITY MEMORANDUM
Utah Coal Regulatory Program

March 25, 2019

TO: Internal File

THRU: Steve Christensen, Permit Supervisor

FROM: Keenan Storrar, Hydrologist

SUBJECT: Third Quarter 2018 Water Monitoring, Bear Canyon Mine, Castle Valley Mining, LLC, C/015/0025, Task ID #5783

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 is monitoring these additional 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).

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

In-mine YES ☒ NO ☐

Two in-mine samples are listed in the Bear Canyon water monitoring plan: SBC-9A and SCC-3 (16-8-8-10). The Mohrland Portal discharge 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).

Springs YES ☒ NO ☐

Most of the spring samples in and around the Bear Canyon mine are sampled for field parameters. Three sites are sampled for operational parameters. Expanded list parameters are sampled 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 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.

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.

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 ☒

Streams YES ☐ NO ☒

UPDES YES ☐ NO ☒
Mine water from Bear Canyon Creek at 004 discharged at 40 GPM each month.

Wells YES ☐ NO ☒

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

Expanded List (baseline) parameters taken in August of year 5 **prior** to each permit renewal. The Expanded List is given in Tables 7-13 and 7-17 of the MRP. The next permit renewal date is November 02, 2020. Therefore, sites will be sampled for Expanded List Parameters in August 2019.

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

Mining in the Wildhorse Ridge/Mohlrand 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.
None.