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WATER QUALITY MEMORANDUM

Utah Coal Regulatory Program

March 12, 2013

TO: Internal File

THRU: Steve Christensen, Permit Supervisor SC

FROM: Ken Hoffman, Hydrologist KH

RE: Third Quarter of 2012 Water Monitoring, Alton Coal Development LLC, Coal Hollow, C/025/0005, Task ID #4169

The Coal Hollow mine is an active surface mine. The permit application was approved on October 15, 2009 and a Permit was issued to Alton Coal Development, LLC (ACD) on November 8, 2010. Mining activity commenced in November 2010.

The water monitoring program for the Coal Hollow mine is described in Section 731.200 of the MRP. Water monitoring locations are listed in Table 7-5 and shown on Drawing 7-10. Monitoring protocols are described in Table 7-4 and the specific protocol(s) assigned for each location are listed in Table 7-5. Operational/Reclamation and Baseline monitoring parameters are listed for surface water on Table 7-6A and Table 7-6B, respectively, and for groundwater on Table 7-7A and 7-7B, respectively. Special Condition No. 4 of the mine Permit requires the Permittee to monitor for selenium where water leaves the minesite, during operational and reclamation phases.

This report was prepared from monitoring data queried from the UDOGM database. The data that support this report were collected and submitted to the database by Alton Coal Development (ACD).

1. Were data submitted for all required sites?

Springs YES [X] NO [ ]

Twelve springs are monitored quarterly (Table 7-5). All of the spring locations except one (SP-3) are located in Sink Valley Wash (Drawing 7-10). Six springs are monitored for field parameters only: Sorensen Spring, SP-3, SP-16, SP-22 and SP-23. Six springs are monitored for field parameters and laboratory analyses: SP-4, SP-6, SP-8, SP-14, SP-20, and SP-33.

All springs were monitored during the Third Quarter of 2012. Flow measurements were recorded at the following spring sites:

SAMPLE	SITE	Flow (gpm)
SORENSON SPRING	Alluvial spring Sink Valley	0.317
SP-14	Alluvium - Sink Valley	2.57
SP-16	(Teal Spring) - Alluvium -Sink Valley	1.41
SP-19	(Sorenson Pond)- Alluvium - Sink Valley	0.22
SP-20	Alluvium - Sink Valley	9.27
SP-22	Alluvium - Sink Valley	0.82
SP-23	Alluvium - Sink Valley	<0.25
SP-3	Pediment Alluvium - Lower Sink Valley Wash	10.6
SP-33	(Johnson Spring) - Alluvium - Sink Valley	3.84
SP-4	Alluvium/Fault? - Lower Sink Valley Wash	0.519
SP-6	Alluvium - seep in Sink Valley	<5
SP-8	Alluvial spring at Dames Ranch	18.7

Notes: Data were collected on September 29, 2012.

Streams YES [X] NO [ ]

Ten stream sites are monitored quarterly. Field parameters and laboratory analyses are performed for SW-2 (Kanab Creek below Robinson Creek); SW-3 (Kanab Creek above permit area); SW-4 and SW-5 Lower Robinson Creek [LRC] above permit area and above Kanab Creek, respectively); SW-6 (Sink Valley wash at permit boundary); SW-8 (Swapp Hollow Creek above permit area); and SW-9 (Sink Valley Wash below permit area). Field parameters only are measured at locations BLM-1 (LRC adjacent to mined areas); RID-1 (irrigation ditch in Robinson Creek); and SW-101 (LRC in permit area).

All required stream sites were monitored for the quarter during September 28-29, 2012. No flow was present for stream monitoring sites SW-101, SW-4, SW-6 and SW-9. Flows reported for Lower Robinson Creek averaged 1.95 gpm. Flow ranges from Kanab Creek averaged 75.3 gpm; Swapp Hollow 4.76 gpm; and Sink Valley Wash at 0 gpm.

Wells YES [X] NO [ ]

Table 7-5 identifies 32 wells which will be monitored quarterly when accessible. Wells will be monitored for water elevation only except for five wells, which will be monitored for water elevation and laboratory parameters: Y-61 (artesian Sink Valley alluvium above mining), LR-45 (LRC alluvium below mining), LS-85 (artesian Sink Valley alluvium below mining), SS-30 (Sink Valley alluvium below mining) and UR-70 (LRC alluvium above mining). Several wells are expected to be destroyed or rendered inoperable due to mining activities (MRP page 7-59). These wells are to be monitored quarterly until they are destroyed or rendered inoperable. Wells C0-18 and C0-54 have been destroyed

and monitoring ceased during the Fourth Quarter of 2011.

All groundwater wells were monitored during Third Quarter of 2012 including well LS-28 which was sampled for analytical parameters where only gauging was required.

UPDES YES [X] NO [ ]

Discharges from the Coal Hollow mine are authorized under UPDES General Permit for Coal Mining application number UTG040027. The UPDES permit, which expires on April 30, 2013, authorizes discharges from six outfalls: 001, 001B, 002, 003, 004, and 005. These outfalls correspond to sediment ponds 1, 1B, 2, 3 and 4 and discharge location 005. Sediment pond locations are shown on Drawing 5-25. The UPDES permit identifies monitoring frequency and required parameters, effluent limitations, and storm water requirements. To date sediment ponds 1, 1B, 2 and 3 have been constructed.

The Operator has submitted data electronically to the Division's water database this quarter. Special Condition No. 1 of the mine Permit requires the Operator to submit water quality data for the Coal Hollow Mine in an electronic format through the Electronic Data Input web site.

No UPDES Outfalls discharged during the Third Quarter of 2012.

2. Were all required parameters reported for each site?

Springs YES [X] NO [ ]

Streams YES [X] NO [ ]

Stream samples were analyzed for the required operational monitoring parameters specified in the MRP. Special Condition No. 4 of the mine Permit requires the Permittee to monitor for selenium where water leaves the minesite, during operational and reclamation phases. Samples from stream sites SW-2, SW-3, SW-5, SW-8, and BLM-1 are analyzed for dissolved selenium (no flow was present at SW-6, SW-9, and SW-101). The Operator should update the water monitoring section of the MRP to clearly indicate the locations and frequencies where dissolved selenium monitoring will be performed to comply with Permit Condition No. 4.

Wells YES [X] NO [ ]

UPDES YES [X] NO [ ]

The Operator has submitted data electronically to the Division's water database. In addition to the monitoring requirements established by the UPDES permit, Special Condition No. 4 of the mine Permit requires the Permittee to monitor for selenium where water leaves the minesite, during operational and reclamation phases.

3. Were irregularities found in the data?

Listed parameters were more than two standard deviations from the mean.

Springs YES [X] NO [ ]

SP-14 September – total dissolved solids, dissolved calcium, dissolved magnesium, total cations, cation-anion balance
SP-20 September – total alkalinity
SP-3 September – flow
SP-33 September – total dissolved solids, dissolved calcium, dissolved magnesium, dissolved potassium, dissolved sodium, total cations
SP-8 September – dissolved calcium, dissolved magnesium, total cations, cation-anion balance

Streams YES [X] NO [ ]

SW-3 September – cation-anion balance
SW-8 September – cation-anion balance

Wells YES [X] NO [ ]

LR-45 September – chloride, dissolved sodium
LS-85 September - total dissolved solids, dissolved calcium, dissolved magnesium, dissolved sodium, total cations, cations-anions balance
SS-30 September – dissolved calcium
UR-70 September – dissolved calcium
Y-61 September – dissolved calcium, dissolved magnesium, total cations

UPDES YES [ ] NO [X]

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

Re-sampling for baseline parameters is due every five years during the third or first quarter. Baseline parameters for surface water and groundwater monitoring are listed in Table 7-6B and Table 7-7B, respectively. Assuming that the five-year baseline resampling will coincide with permit renewal, the next baseline resampling is due during third or fourth quarter 2015.

5. Based on your review, what further actions, if any, do you recommend? YES [ ] NO [X]

6. Does the Mine Operator need to submit more information to fulfill this quarter's monitoring requirements? YES [ ] NO [X]

7. Follow-up from last quarter, if necessary.

None