Memo

Date: Friday, July 31, 2020

To: Muskegon Environmental Redevelopment Group, LLC

From: HDR Michigan, Inc.

Subject: Former BC Cobb Power Plant CCR Surface Impoundments
Semiannual Update for Selection of Remedy per 257.97(a)

The former BC Cobb Power Plant (BCC or Site) is the site of a former coal-fired power generation facility located in Muskegon, Michigan. During operations, coal combustion residuals (CCR) were deposited in Ponds 0-8 and the Bottom Ash Pond. In accordance with the U.S. Environmental Protection Agency's (EPA's) Coal Combustion Residuals (CCR) Rule specified in 40 CFR §257, Consumers Energy Company (CEC) installed a groundwater monitoring network around the CCR surface impoundments in 2015. In January 2019, CEC reported that concentrations of Appendix IV constituents in monitoring wells at the surface impoundments were observed at statistically significant levels (SSLs) above Groundwater Protection Standards (GPS) (CEC, 2019). Subsequently, the Assessment of Corrective Measures Report (TRC, September 2019) was completed on September 11, 2019 and posted to CEC's public website. This Semiannual Progress Report, prepared as a requirement of 40 CFR §257.97(a) of the CCR Rule, describes progress toward selecting a remedy for corrective action at the former BC Cobb Power Plant.

The Muskegon Environmental Redevelopment Group, LLC (MERG) has since acquired the BCC property and has initiated the process of removing CCR material from the ponds as part of pond remediation and closure efforts. MERG has continued implementation of the federal CCR Rule groundwater monitoring program, as required by §257.90-95, as a continuation of the CEC monitoring program. Surface impoundment closure is anticipated in August 2022.

Source Control Measures Undertaken

A Closure Plan, prepared and certified by Golder Associates, Inc. was placed in CEC's Operating record and provided formal Notification of Intent to Initiate Closure on March 30, 2018, which confirmed that CEC planned to close the BCC Ponds under the CCR Rule's closure by removal provision in §257.102(c). A closure work plan was also submitted by CEC to the Michigan Department of Environment, Great Lakes, and Energy, who approved it on October 16, 2018 and clarified the workplan on August 13, 2018 and September 20, 2019. MERG acquired the property on April 16, 2020 to complete the CCR ash removal. Upon

acquisition, MERG immediately initiated closure commencement activities. Since the last semiannual selection of remedy update in January 2020, the following activities have been conducted by MERG:

- ✓ Testing and design of the soil bentonite wall (SBW) was completed;
- ✓ SBW and associated construction required modifications were constructed, including the removal and replacement of three groundwater monitoring wells;
- ✓ Dewatering design was completed;
- ✓ Groundwater modeling of the dewatering plan was completed;
- ✓ Stability analysis of the SBW and dewatering plan are ongoing;
- ✓ Excavation design is in progress;
- ✓ State Solid Waste Permitting is in progress;
- ✓ Dewatering wells, pumps, and power installation has been initiated; and
- ✓ Semiannual groundwater assessment monitoring was completed.

Dewatering is anticipated to begin August 2020 and excavation and CCR removal will be initiated in August 2020 and are anticipated to be completed by 2022.

Results of Semiannual Groundwater Assessment Monitoring

The groundwater monitoring and statistical assessments performed by CEC in 2019 and MERG in May 2020 confirmed that lithium is the Appendix IV constituent present at a SSL above the GPS in two wells. The observed concentrations of lithium are below applicable State of Michigan unrestricted cleanup criteria. The nearest off-site drinking water well is more than 2,000 feet away on the north side of the North Branch of the Muskegon River. Groundwater chemistry is expected to improve as MERG completes source removal of CCR.

Progress Towards Remedy Selection

An Assessment of Corrective Measures (ACM) was submitted to EGLE on September 11, 2019 by CEC. MERG intends to follow the CEC developed ACM for the Site, and follow the adaptive management strategy, which includes measures to remove source material, reduce infiltration, and minimize the potential future migration.

As described above, significant progress towards source removal has begun at the Site that will allow for excavation of the vertical and lateral extent of CCR ash. The reduction of hydraulic loading and recharge of the aquifer are expected to change groundwater redox conditions and the physical removal of CCR is expected to further improve groundwater quality. During dewatering the conditions of groundwater flow are expected to change, which may result in numerous dry wells around the waste boundary during the dewatering and excavation. When excavation is complete and dewatering is ceased, groundwater conditions are anticipated to recover and equilibrate within weeks, at which time it is anticipated that groundwater quality conditions will improve.

It is anticipated that the remedy selection process for addressing affected groundwater will proceed following the implementation of the CCR source removal. Additionally, MERG will continue executing the self-implementing groundwater compliance schedule in conformance with §257.90 - §257.98, which includes semiannual assessment monitoring in accordance with §257.95 to monitor groundwater conditions and inform the remedy selection. The final remedy will be formally selected per §257.97 once the selected option is reviewed and commented on by EGLE and a public meeting is conducted at least 30-days prior to the final selection as required under §257.96(e).

The following activities are proposed to be completed or initiated in the next 6-month period:

- Dewatering of the CCR ash surface impoundments
- Ash excavation and removal from the surface impoundments
- Continued semiannual groundwater assessment monitoring

References

Consumer Energy Company. March 30, 2018. Notification of Intent to Close Two CCR Units. B.C. Cobb Generating Facility Bottom Ash Pond and Ponds 0-8 Closure Plan, Muskegon, Michigan.

Consumer Energy Company. January 15, 2019. Notification of Appendix IV Constituent Exceeding Groundwater Protection Standard per §257.95(g). B.C. Cobb Generating Facility Bottom Ash Pond and Ponds 0-8, Muskegon, Michigan.

Golder Associates Inc. February 2018. BC Cobb Generating Facility Bottom Ash Pond and Ponds 0-8 Closure Plan, Muskegon, Michigan. Prepared for Consumers Energy Company.

Golder Associates Inc. 2018, May 30, 2018 clarified October 16, 2018 and September 20, 2019. BC Cobb Ponds 0-8 and Bottom Ash Closure Work Plan, Muskegon, Michigan. Prepared for Consumers Energy Company.

TRC Environmental Corporation. September 11, 2019. Assessment of Corrective Measures, Consumers Energy, Former BC Cobb Power Plant, Bottom Ash Pond & Ponds 0-8, Muskegon, Michigan. Prepared for Consumers Energy Company.