

January 30, 2020

Ms. Lori Babcock
Michigan Department of Environment, Great Lakes, and Energy
Materials Management Division
Saginaw Bay District Office
401 Ketchum St, Suite B
Bay City, Michigan 48708

**SUBJECT: Initial Semiannual Progress Report – Selection of Final Remedy
JC Weadock Landfill Coal Combustion Residuals (CCR) Unit**

Dear Ms. Babcock,

This Semiannual Progress Report, prepared as a requirement of §257.97(a) of the Federal Coal Combustion Residual (CCR Rule), describes progress towards selecting and implementing the final remedy for the Weadock Landfill. A progress report is required to be prepared semiannually upon completion of the Assessment of Corrective Measures (ACM) Report until the final remedy is selected. This progress report is the first developed following the completion of the Weadock Landfill ACM Report.

As presented in the key milestones timeline below, a groundwater monitoring system was installed for the landfill and background monitoring commenced in December 2015. Consumers Energy first reported the potential for statistically significant increases (SSIs) for Appendix IV constituents in the "Notification of Appendix IV Constituent Exceeding Groundwater Protection Standard per §257.95(g)" (TRC, January 2019). Subsequently, the Assessment of Corrective Measures Report (TRC, September 2019) was completed on September 11, 2019 as a step towards developing a final remedy.

Source Control Measures Undertaken

On October 17, 2016, in accordance with the schedule defined in §257.102 of the CCR Rule, Consumers Energy placed into the Operating Record an Initial Written Closure Plan for the Weadock Landfill that detailed a plan for closing the CCR unit in place. Previously, Consumers Energy constructed a partially enclosing soil-bentonite slurry wall around the landfill in 2008. The remainder of the construction to fully enclose the slurry wall was completed in 2018 with the construction certification documents approved by EGLE on December 19, 2018.

Results of 2019 Semi-Annual Sampling Events

Statistical analysis from semiannual groundwater monitoring events verified that the only Appendix IV constituents that is present at a statistically significant level above the established Groundwater Protection Standard (GWPS) is arsenic. Given the change in groundwater flow

conditions, a revised groundwater monitoring system has been established to assess slurry wall integrity and determine if there have been any releases from the Weadock Landfill. Therefore, the modified CCR monitoring well network now consists of the four (4) background as discussed above, and eleven (11) downgradient monitoring wells as discussed in the *Sample and Analysis Plan* (2018 SAP) (TRC, 2018) and *Statistical Analysis Plan* (2018 Stats Plan) (TRC, 2018b). The downgradient monitoring wells include:

JCW-MW-18001	JCW-MW-18004	JCW-MW-18005	JCW-MW-18006
MW-50	MW-51	MW-52	MW-53
MW-54R	MW-55	OW-57R Out	

Progress Towards Remedy Selection

Consumers Energy first provided the Michigan Department of Environment, Great Lakes, and Energy (EGLE) a Response Action Plan prepared in accordance with Part 115 on March 15, 2019 after calculating a potential SSI for arsenic for the Weadock Landfill. This report documents identified potential sources of contamination, interim response activities taken to control possible sources of contamination, and a schedule for terminating receipt of waste and initiating closure of the landfill. This report was approved by EGLE on May 14, 2019 based on the following additional documentation:

- Hydrogeological Monitoring Plan (HMP) of compliance monitoring addressing groundwater monitoring and porewater at the groundwater/surface water interface approved by EGLE January 8, 2018. This compliance monitoring program addresses groundwater and surface water interface monitoring for all coal ash management regulated by the EGLE Materials Management Division.
- Quarterly groundwater monitoring reports demonstrating compliance with all required monitoring under the HMP verifying that water quality standards are being achieved through the monitoring of an authorized mixing zone at all monitoring points in the program ensuring that there are currently no adverse effects on human health or the environment from either surface water or groundwater. These reports are submitted 30-days after the calendar quarter in which monitoring was performed as follows: April 30th, July 30th, October 30th, January 30th.

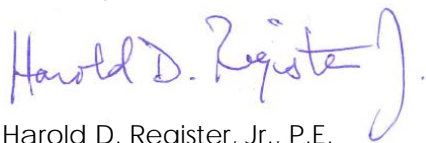
The Response Action Plan also explicitly committed to providing an assessment for potential remedial actions based on recommendations from the ACM Report submitted to EGLE on September 11, 2019. The ACM Report indicated that groundwater management alternatives under consideration that could potentially address the residual arsenic under *known* groundwater conditions were identified as: 1) Closure in place with post-remedy monitoring, 2) Closure in place with groundwater capture/control, 3) Closure in place with active

geochemical sequestration, and 4) Closure in place with passive geochemical sequestration. These groundwater monitoring alternatives were considered to be technically feasible final groundwater management strategies when following source control activities that include constructing a fully enclosed soil-bentonite slurry wall around the landfill and placing a final cover over the area.

Now that the fully-enclosing soil-bentonite slurry wall has been completed for the Weadock Landfill, groundwater monitoring events conducted in 2019 confirm that improvements to groundwater continue to be observed. Additional sampling events will be needed to monitor continued improvements as the groundwater conditions return to a new equilibrium based on site hydrogeology and groundwater and porewater chemistry. These subsequent sampling events will inform the on-going improvements and retention of monitoring-only, passive, or active remedial options following the final cover construction. The final remedy for the Weadock Landfill will be formally selected per §257.97 and Michigan Solid Waste requirements 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 next semiannual progress report will be submitted in six months by July 30, 2020. Please feel free to contact me with any questions or clarifications.

Sincerely,



Harold D. Register, Jr., P.E.

Principal Engineer

Landfill Operations Compliance

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