



Notification of Completion of Closure

**St. Clair Power Plant Former Bottom
Ash Basins
4901 Pointe Drive
East China Township, Michigan**

March 2024

Prepared For:

DTE Electric Company

Prepared By:

TRC
1540 Eisenhower Place
Ann Arbor, Michigan 48108

A handwritten signature in blue ink that reads "Vincent E. Buening".

Vincent E. Buening, C.P.G.
Senior Project Manager

A handwritten signature in blue ink that reads "David B. McKenzie".

David B. McKenzie, P.E.
Senior Project Engineer

A handwritten signature in black ink that reads "Sarah B. Holmstrom".

Sarah B. Holmstrom, P.G.
Senior Hydrogeologist

TABLE OF CONTENTS

Executive Summary	ii
1.0 Introduction.....	3
2.0 Coal Combustion Residual (CCR) Removal.....	4
3.0 Compliance with Groundwater Protection Standards.....	6
4.0 Post-Closure Care Requirements	7
5.0 Conclusions	8
6.0 Closure Certification.....	9
7.0 References	10

ATTACHMENT

Attachment 1 EGLE October 26, 2023 Approval; Closure by Coal Combustion Residual
Removal Certification Letter

Executive Summary

DTE Electric Company (DTE Electric) completed CCR removal activities at the St. Clair Power Plant Bottom Ash Basins Coal Combustion Residual unit (SCPP BABs CCR unit) in 2022 and early 2023 while remaining in detection monitoring in accordance with a Michigan Department of Environment, Great Lakes and Energy (EGLE)-approved closure work plan (Closure Plan). Closure by removal activities related to the BABs began on August 15, 2022, and the removal of CCR from the BABs was completed in February 2023, including the concrete-lined canal connecting the East and West BABs. The BABs and connecting canal were backfilled with soil following CCR removal and completed with the placement of topsoil, seed and mulch by May 19, 2023.

Appendix IV parameters were analyzed in the April and October 2023 closure groundwater monitoring events to demonstrate that the Groundwater Protection Standards (GWPSs) are met after CCR removal in accordance with §257.102(c). No exceedances of the GWPSs were detected for the Appendix IV parameters in either monitoring event during the 2023 monitoring period. Therefore, in accordance with §257.102(h), this report serves as the Notification of Completion of Closure, documenting that closure has been completed at the SCPP BABs CCR unit in accordance with the Closure Plan and in compliance with §257.102(c).

1.0 Introduction

As documented in the *Closure Documentation Report* (Barr, June 2023) for the St. Clair Power Plant Bottom Ash Basins Coal Combustion Residual unit (SCPP BABs CCR unit), DTE Electric Company (DTE Electric) commenced closure construction activities in August 2022 and completed the removal of CCR from the BABs in February 2023, including the removal of CCR from the concrete-lined canal connecting the east and west BABs. The closure activities were performed in accordance with the Michigan Department of Environment, Great Lakes and Energy (EGLE)-approved closure work plan (Closure Plan) (Barr, April 2022) prepared under §257.102(b) and 257.102(c) of the CCR rule (USEPA, April 2015), as amended. The BABs and connecting canal were backfilled following CCR removal, and topsoil, seed, and a mulch blanket were placed atop the backfilled former BABs by May 19, 2023.

Additionally, as documented in the 2023 Annual Groundwater Monitoring and Corrective Action Report (TRC, January 2024), groundwater monitoring performed throughout 2023, demonstrates that concentrations of Appendix IV parameters do not exceed the groundwater protection standards (GWPSs). Therefore, closure of the SCPP BABs was conducted in accordance with §257.102(c), which states:

Closure by removal of CCR. *An owner or operator may elect to close a CCR unit by removing and decontaminating all areas affected by releases from the CCR unit. CCR removal and decontamination of the CCR unit are complete when constituent concentrations throughout the CCR unit and any areas affected by releases from the CCR unit have been removed and groundwater monitoring concentrations do not exceed the groundwater protection standard established pursuant to § 257.95(h) for constituents listed in Appendix IV to this part.*

This Notification of Completion of Closure has been prepared to document the closure activities at the SCPP BABs and to provide certification from a qualified professional engineer that closure of the surface impoundments have been successfully completed, per §257.102(f)(3).

2.0 Coal Combustion Residual (CCR) Removal

DTE Electric ceased operation of the coal-fired boilers at the SCPP on May 31, 2022, completed washdowns of CCR containing equipment on August 12, 2022, and commenced physical isolation of the BABs from power plant infrastructure on September 1, 2022. Therefore, DTE Electric has permanently ceased receipt of CCR and non-CCR waste streams at the BABs and initiated closure per §257.102(e). Closure by removal activities related to the BABs began on August 15, 2022 following the procedures laid out in the Closure Plan. The removal of CCR from the BABs was completed in February 2023. The BABs were backfilled following CCR removal, and topsoil and seed placement was complete by May 19, 2023 (Barr, June 27, 2023).

The BABs closure details are presented in the June 27, 2023 *Construction Documentation Report, St. Clair Power Plant Bottom Ash Basin, Coal Combustion Residual Closure (CDR)* (Barr, June 27, 2023) that was approved by EGLE in an October 26, 2023 letter (Attachment 1).

As described in the Closure Plan, multiple lines of evidence were used to document CCR removal and provided a predictable and reliable means to objectively measure CCR removal based on planned excavation grades and field observations. The approach took advantage of the clear visible distinction between the color and geotechnical properties of the CCR and the color and geotechnical properties of the underlying soil documented during vibracore testing and geotechnical soil borings completed prior to construction. This visible color and geotechnical properties difference was confirmed during the CCR removal activities and documented within the removal verification reports.

From November 2022 through January 2023, Raymond Excavating Company (Raymond) was contracted to perform excavation activities to remove the CCR materials from the East and West BABs. Documentation was collected and certified by Barr Engineering Company (Barr) in the CDR to provide lines of evidence to confirm that CCR was removed per the Closure Plan. During CCR removal and documentation, the following tasks were completed:

- CCR was removed by excavation until CCR was no longer visually observed on the excavation surface and at least 6-inches of underlying clay was removed. This was confirmed by observing the type, color, and consistency of the lower excavated material, by photo documentation of the over-excavation, and by surveying the base of the excavation.
- Post-excavation survey elevations were compared to the average top of clay pre-excavation surface calculated from vibracore data during the geotechnical investigation described in the Closure Plan. The average post-excavation surface demonstrated an average clay over-excavation by 3.3 ft in the East BAB and by 1.6 ft in the West BAB, both well more than the 6-inch minimum required per the Closure Plan to achieve CCR removal.

Barr and DTE Electric observed over-excavation of CCR material from November 2022 through February 2023. Over-excavation was visually confirmed by reviewing the plasticity of the lowest excavated material to satisfy the requirements of §257.102(c). Key visual observations included that the natural clay is plastic while the CCR has no to low plasticity, and the natural clay ranges in color from dark brown to light grayish brown whereas the CCR was primarily dark gray. Observations and excavation extent were all photo-documented.

The results of the final certification for the removal of CCR material were documented in the CDR that was submitted to EGLE for review and concurrence as required in the Closure Plan. EGLE concurred that CCR has been removed in accordance with the EGLE-approved Closure Plan as noted in an October 26, 2023 letter (Attachment 1).

3.0 Compliance with Groundwater Protection Standards

Per §257.102(c), closure of a CCR impoundment is not deemed complete until groundwater concentrations associated with the unit do not exceed the GWPSs established pursuant to §257.95(h) for Appendix IV constituents.

While the BABs CCR unit has remained in detection monitoring throughout its operation, the closure must demonstrate that groundwater concentrations do not exceed the Appendix IV constituent GWPSs established under §257.95(h) after the closure of the CCR impoundment pursuant to §257.102(c). TRC calculated background statistical limits and developed Appendix IV GWPSs for the BABs in accordance with §257.95(h). Two consecutive post-CCR removal groundwater sampling events for Appendix IV constituents were completed on April 28 and October 12, 2023 to demonstrate that the GWPSs are met for closure of the SCPP BABs CCR unit in accordance with §257.102(c) (TRC, January 2024).

The 2023 Annual Groundwater Monitoring Report (TRC, January 2024) (2023 Annual Report) documents that all semiannual groundwater monitoring sampling for Appendix IV constituents in 2023 have not shown any Appendix IV constituents to be present at any downgradient monitoring wells at statistically significant levels above the GWPSs in accordance with §257.95(h). Therefore, the SCPP BABs CCR unit has met the groundwater performance requirements for closure of a CCR surface impoundment based on: 1) not having groundwater monitoring concentrations exceed the GWPSs for two consecutive events after CCR unit closure, and 2) not being required to enter assessment of corrective measures, evaluate remedies, or implement corrective actions under §257.96 through 257.98 because no releases to groundwater have been detected.

Based on the reported results in the 2023 Annual Report for all groundwater monitoring locations associated with the SCPP BABs CCR unit, concentrations of Appendix IV constituents do not exceed the GWPSs established pursuant to §257.95(h) for two consecutive semiannual monitoring events in 2023, meeting the closure performance requirement per §257.102(c).

4.0 Post-Closure Care Requirements

Post-closure care requirements do not apply to the BABs CCR unit. The post-closure care section in the CCR rule (§257.104(a)(2)) states the following: “An owner or operator of a CCR unit that elects to close a CCR unit by removing CCR as provided by §257.102(c) is not subject to the post-closure care criteria under this section.”

5.0 Conclusions

Closure of the BABs was performed and completed in accordance with the Closure Plan. The BABs have been completely removed from service, CCR was fully removed from the BABs, and the BABs were backfilled, contoured, and vegetated to facilitate future management of water runoff from the surface area of the former BABs.


There were no exceedances of GWPSs for the Appendix IV parameters for two consecutive semiannual closure groundwater monitoring events during the 2023 monitoring period. Therefore, groundwater monitoring at the SCPP BABs CCR unit will be discontinued in 2024 and, upon EGLE-approval, the monitoring well network will be properly decommissioned. As of the certification date of this report (see Section 6.0), the SCPP BABs CCR unit will be deemed closed under 40 CFR §257 and is not subject to post-closure care requirements or any other requirements under 40 CFR §257 of the CCR rule.

6.0 Closure Certification

**Notification of Completion of Closure Report Certification
St. Clair Power Plant Bottom Ash Basins
East China Township, Michigan**

CERTIFICATION

I hereby certify in accordance with §257.102(f)(3) that the St. Clair Power Plant Bottom Ash Basins CCR unit (SCPP BABs CCR unit) was closed in accordance with the requirements of §257.102(c) of the CCR rule and the written Closure Plan as developed under §257.102(b). To the best of my knowledge, information, and belief, the information contained herein is true and correct and this document has been prepared in accordance with generally accepted good engineering practices.

Name: David B. McKenzie, P.E.	Expiration Date: December 17, 2025	
Company: TRC Engineers Michigan, Inc.	Date: March 1, 2024	

7.0 References

- Barr Engineering Company (Barr). June 27, 2023. Construction Documentation Report, St. Clair Power Plant Bottom Ash Basin, Coal Combustion Residual Closure. Prepared for DTE Electric Company.
- Barr. April, 2022 (Updated October 2022). Bottom Ash Basins Closure Work Plan, St. Clair Power Plant Bottom Ash Basin, Coal Combustion Residual Closure. Prepared for DTE Electric Company.
- DTE Electric Company. September 1, 2022. Notification of Intent to Close, St. Clair Power Plant Bottom Ash Basins, 4901 Pointe Drive, East China Township, Michigan.
- Michigan Department of Environment, Great Lakes and Environment (EGLE). October 12, 2022. Approval; Bottom Ash Basins Closure Work Plan, St. Clair Power Plant Bottom Ash Basin, Coal Combustion Residual Closure. Waste Data System No.: 498056
- Michigan Department of Environment, Great Lakes and Environment (EGLE). October 26, 2023. Approval; Closure by Coal Combustion Residual Removal Certification, St. Clair Power Plant Bottom Ash Basins, East China Township, Michigan. Waste Data System No.: 498056
- TRC. January 2024. 2023 Annual Groundwater Monitoring Report – DTE Electric Company St. Clair Power Plant Coal Combustion Residual Bottom Ash Basins, 4901 Pointe Drive, East China Township, Michigan. Prepared for DTE Electric Company.
- USEPA. April 2015. 40 CFR Parts 257 and 261. Hazardous and Solid Waste Management System: Disposal of Coal Combustion Residuals from Electric Utilities; Final Rule. 80 Federal Register 74 (April 17, 2015), pp. 21301-21501 (80 FR 21301).

Attachment 1

EGL E October 26, 2023 Approval; Closure by Coal Combustion Residual Removal Certification Letter



GRETCHEN WHITMER
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF
ENVIRONMENT, GREAT LAKES, AND ENERGY
WARREN DISTRICT OFFICE



PHILLIP D. ROOS
DIRECTOR

October 26, 2023

VIA EMAIL

Chris Scieszka, Environmental Engineer
DTE Energy
One Energy Plaza, 655 G.O.
Detroit, Michigan 48226

Dear Chris Scieszka:

SUBJECT: Approval; Closure by Coal Combustion Residual Removal Certification
St. Clair Power Plant Bottom Ash Basins, East China Township, Michigan
Waste Data System No.: 498056

On July 28, 2023, the Department of Environment, Great Lakes, and Energy (EGLE),
Materials Management Division (MMD), received the following closure certification:

- Construction Documentation report titled *St. Clair Power Plant Bottom Ash Basin, Coal Combustion Residual Closure*, prepared by DTE Electric Company, and dated June 27, 2023.

The MMD staff has reviewed the certification under Part 115, Solid Waste Management, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended. Based on this review, staff found that the certification is consistent with Part 115, the Part 115 administrative rules, and approved closure work plans and specifications for this facility.

If you have any questions regarding this letter, please contact me at 517-614-9712, or at WhitlowA@Michigan.gov.

Sincerely,

Alexander H. Whitlow
Environmental Engineer
Warren District Office
Materials Management Division
517-614-9712

cc: Jason Roggenbuck, DTE Energy
Deanna Moran, China Township Clerk
Greg Morrow, EGLE
Margie Ring, EGLE