REPORT

Former J.C. Weadock Generating Facility
Dry Ash Landfill
2023 Annual Landfill Inspection Report

West Olive, Michigan

Pursuant to 40 CFR 257.84

Submitted to:

Consumers Energy Company

1945 W. Parnall Road
Jackson, Michigan 49201

Submitted by:

WSP Michigan Inc.

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GL21465697.003

October 2023

Certification

Professional Engineer Certification Statement [40 CFR 257.84]

I hereby certify that, having reviewed the attached documentation and being familiar with the provisions of Title 40 of the Code of Federal Regulations Section 257.84 (40 CFR Part 257.84), I attest that this Annual Inspection Report is accurate and has been prepared in accordance with good engineering practices, including the consideration of applicable industry standards, and with the requirements of 40 CFR Part 257.84.

WSP Michigan Inc.

Signature

10/6/2023

Date of Report Certification

Samuel F Stafford
This item has been electronically signed and sealed by Samuel F. Stafford, PE using a Digitial Signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.
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Samuel F. Stafford, PE

Name

6201308939

Professional Engineer Certification Number

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1.0 INTRODUCTION

On April 17, 2015, the United States Environmental Protection Agency (EPA) issued the Coal Combustion Residual (CCR) Resource Conservation and Recovery Act (RCRA) Rule (40 CFR 257 Subpart D) ("CCR RCRA Rule") to regulate the beneficial use and disposal of CCR materials generated at coal-fired electrical power generating complexes. The CCR Rule requires owners or operators of existing CCR landfills to have those units inspected on an annual basis by a qualified professional engineer in accordance with 40 CFR 257.84(b). The annual qualified professional engineer inspections are required to be completed and the results documented in an inspection report.

WSP Michigan Inc. (WSP) was retained by Consumers Energy Company (CEC) to perform the annual inspection of the Dry Ash Landfill (Landfill) at the J.C. Weadock Generating Facility (JC Weadock). The intent of the inspection is to document, to the extent reasonable based on information provided by CEC and the limits of the visual inspection, that the design, construction, operation, and maintenance of the CCR unit is consistent with recognized and generally accepted good engineering standards. WSP reviewed available information regarding the status and condition of the CCR unit and performed a visual onsite inspection to identify signs of distress or malfunction of the CCR unit. The inspection included the following:

- Any changes in geometry of the structure since the previous annual inspection.
- Approximate volume of CCR contained in the unit at the time of inspection.
- Appearances of an actual or potential structural weakness of the CCR unit, in addition to any existing conditions that are disrupting or have the potential to disrupt the operation and safety of the CCR unit and appurtenant structures.
- Any other change(s) which may have affected the stability or operation of the Landfill since the previous inspection.

2.0 BACKGROUND AND DOCUMENT REVIEW SUMMARY

JC Weadock is located in Essexville, Michigan and is bounded by the Saginaw River to the west and Saginaw Bay to the north. Total remaining capacity of the landfill per Weadock Landfill 2022 Closure Plan, dated March 2022, is 1,555,113 cubic yards (CY) with approximately 301,500 CY consumed at the time of the inspection as estimated from disposal records. Dry ash was blown to a silo and conditioned to a desired moisture content to prevent fugitive dust and to aid in compaction. The dry ash from the silos was trucked from the D.E. Karn facility and placed in active areas of the JC Weadock Dry Ash Landfill. CCRs have also been transferred from the B.C. Cobb facility and from the Weadock bottom ash pond closure construction for disposal within the JC Weadock Dry Ash Landfill. The closure process for the facility has begun with placement of clay fill to meet closure grades.

In 2008, a soil bentonite slurry wall was constructed within the perimeter clay dike of the landfill and keyed into the underlying hydraulically confining glacial clay till layer. In 2018 a gap or "vent" of the soil bentonite slurry wall was closed.

The applicable available information reviewed for this assessment is summarized in Table 1 below.

Table 1: Summary of Background Document Review

Document	Date	Author
Weekly Inspection Reports	May 2022 – May 2023	Dry Ash Landfill Qualified Personnel
Weadock Landfill 2022 Closure Plan	March 2022	Golder Associates Inc.
JC Weadock Dry Ash Landfill 2021 Annual RCRA CCR Landfill Inspection Report	October 2021	Golder Associates Inc.
JC Weadock Dry Ash Landfill 2020 Annual RCRA CCR Landfill Inspection Report	October 2020	Golder Associates Inc.
JC Weadock Dry Ash Landfill 2019 Annual RCRA CCR Landfill Inspection Report	October 2019	Golder Associates Inc.
JC Weadock Dry Ash Landfill 2018 Annual RCRA CCR Landfill Inspection Report	October 2018	Golder Associates Inc.
JC Weadock Dry Ash Landfill 2017 Annual RCRA CCR Landfill Inspection Report	October 2017	Golder Associates Inc.
JC Weadock Dry Ash Landfill 2016 Annual RCRA CCR Landfill Inspection Report	October 2016	Golder Associates Inc.
JC Weadock Dry Ash Landfill 2015 Initial Annual RCRA CCR Landfill Inspection Report	January 2016	Golder Associates Inc.
Coal Combustion Waste Impoundment Round 7 - Dam Assessment Report, JC Weadock Fly Ash Dike	April 2011	Dewberry & Davis, LLC, Fairfax, Virginia
JC Weadock Revised Closure Plan	December 2011	AECOM Technical Services, Inc.
Surveillance Monitoring Programs (SMPs)	December 2010, Revised 2015	CEC

3.0 2023 VISUAL INSPECTION

The 2023 onsite visual inspection of the Landfill was performed by WSP on June 12, 2023. WSP's inspectors, Samuel Stafford, PE and Stephen Thumma, PE, were accompanied by two CEC representatives, as follows:

- Mr. George McKenzie, PE, CEC System Engineering Department
- Mr. Harold Register, JR, PE CEC Principal Engineer, Landfill Compliance

Provided in Appendix A is the inspection checklist form that provides both observations and recommendations as a result of the visual inspection and the following information as stipulated in 40 CFR 257.84(b):

- Any changes in geometry of the structure since the previous annual inspection.
  - None were observed
- Approximate volume of Coal Combustion Residuals (CCR) at the time of inspection
  - The volume of CCR at the time of inspection was approximately 2,461,663 cubic yards based on information from CEC.
- Appearances of an actual or potential structural weakness of the CCR unit, in addition to any existing conditions that are disrupting or have the potential to disrupt the operation and safety of the CCR unit and appurtenant structures
  - None were observed
- Any other change(s) which may have affected the stability or operation of the impounding structure since the previous inspection
  - None were observed

The checklist categorizes observed conditions of the impoundment or appurtenant structures as either acceptable, monitor/maintain, investigate, or repair, which are defined as follows:

- Acceptable: The condition was visually documented to be acceptable, requiring no action beyond periodic inspection in accordance with the SMP and typical maintenance.
- Monitor/Maintain: The condition was visually identified to exhibit the potential for or show existing degeneration that should either be monitored or maintained as detailed in the checklist.
  - Items identified in this category are not considered a deficiency or release as classified under 40 CFR 257.84(b)(5) requiring immediate action by CEC.
- Investigate: The limitations of the visual inspection did not allow for an opinion to be made on the condition of the item observed, and WSP recommends additional investigation to categorize the item.
- Repair: WSP recommends that items identified with a repair designation exhibited conditions that should initiate measures be taken to rectify the area of concern.
  - It should be noted that no items identified for repair were considered a deficiency or release as classified under 40 CFR 257.84(b)(5) requiring immediate action by CEC.

Based on a review of previous inspection reports listed in Table 1 compared to conditions noted during the inspection, the following changes were observed:

- Erosion and sloughing was observed at interior drainage ditch slopes.
- Minor erosion was observed in areas along exterior slopes.
- Unwanted vegetation observed along perimeter of Dry Ash Landfill.
- WSP observed animal burrows along interior and exterior dike slopes.
- There has been filling and regrading within the Dry Ash Landfill as it begins the closure process.

4.0 LIMITATIONS OF ASSESSMENT

WSP has conducted the site inspection and prepared this report for the Dry Ash Landfill at JC Weadock. The factual data, assessment, interpretations, and recommendations provided herein are based on the results of field observations from site inspections performed by WSP and review of previous site inspection reports provided to WSP by CEC and pertain to the specific project as described in this report and are not applicable to any other project or site location.

WSP has prepared this report in a manner consistent with that level of care and skill ordinarily exercised by members of the engineering and science professions currently practicing under similar conditions and has characterized the site conditions within the limitations of the scope of services as defined by CEC and subject to the time limits and physical constraints applicable to this report. No other warranty, expressed or implied, is made. Any change of site conditions, purpose, development plans, or operation may alter the validity of this report. WSP cannot be responsible for use of this report, or portions thereof, unless WSP is requested to review and, if necessary, revise the report.

5.0 CLOSING

This report has been prepared in general accordance with normally accepted civil engineering practices to fulfill the Resource Conservation and Recovery Act (RCRA) reporting requirements in accordance with 40 CFR 257.84(b)(2). WSP has reviewed the available information on the JC Weadock Dry Ash Landfill and performed an onsite visual inspection. WSP's assessment is limited to the information provided by CEC and to the aspects that could be inspected visually in a safe manner. WSP cannot attest to the condition of subsurface or submerged structures.

WSP Michigan Inc.

Samuel F. Stafford, PE
Lead Consultant

Matthew J. Wachholz, PE
VP Geotechnical Consultant

SFS/MJW/eag

https://golderassociates.sharepoint.com/sites/145646/project files/6 deliverables/2023/rcra reports/weadock/2023_jc weadock_dry ash landfill_inspection report_oct2023.docx

APPENDIX A

Visual Inspection Checklist

CCR LANDFILL VISUAL INSPECTION CHECKLIST

Facility Name: J.C. Weadock Dry Ash Landfill

Owner: Consumers Energy Company (CEC)

Purpose of Facility: Dry Ash Disposal

County, State: Bay County, Michigan

Inspected By: Samuel Stafford and Stephen Thumma **Inspection Date:** June 12, 2023

Weather: 65-degrees F and sunny.

ITEM	Acceptable	Monitor/Maintain	Investigate	Repair	REMARKS
1. General Conditions					
a. Current volume of CCR	NA				Volume: 301,500 cubic yards
b. Alterations	X				Active redistribution of ash with the landfill footprint.
c. Grass cover	X				
d. Settlement / misalignment / cracks	X				None observed.
e. Leachate Collection					NA
2. Landfill Slope					
a. Erosion – liner exposed		X			Erosion and sloughing of cover soil and CCR into perimeter ditch observed, see note 2.
b. Rodent burrows		X			Burrows observed, see note 2.
c. Vegetation	X				
d. Cracks/settlement	X				
e. Riprap/other erosion protection	X				
f. Slide, Slough, Scarp	X				
g. Benches	X				
h. Final Cover	X				

ITEM	Acceptable	Monitor/Maintain	Investigate	Repair	REMARKS
i. Downchutes	X				
3. Crest					
a. Soil condition	X				
b. Comparable to design width or previous inspection	X				
c. Vegetation	X				
d. Rodent burrows		X			Borrows observed, see note 2.
e. Exposed to heavy traffic	X				
f. Damage from vehicles/machinery		X			Minor rutting observed near interior ditch, see note 2.
4. Toe					
a. Vegetation	X				
b. Rodent burrows		X			Burrows observed, see note 2.
c. Settlement	X				None observed.
d. Drainage conditions	X				Standing water observed in the drainage ditches, see note 2.
e. Seepage	X				None observed.

Notes:

1) Total remaining permitted capacity of the landfill is 1,558,113 cubic yards (cys) with approximately 301,500 cys reported consumed at the time of inspection per CEC. These volumes do not include historically placed CCRs.

2) Features observed and documented in this checklist were not considered a deficiency or release as classified under 40 CFR 257.84(b)(5) and required no immediate action beyond periodic inspection in accordance with the SMP and typical maintenance.

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