

Consulting  
Engineers and  
Scientists

December 19, 2021  
Project 2103683

Mr. Eric Kovatch  
WEC Energy Group – Business Services  
333 W. Everett Street, A231  
Milwaukee, Wisconsin 53203

**Re: Landfill Inspection Report  
We Energies Presque Isle Power Plant Landfill No. 3  
Marquette Township, Michigan**

Dear Mr. Kovatch:

GEI Consultants of Michigan, P.C. (GEI) is pleased to provide this landfill inspection report for the We Energies Presque Isle Power Plant (PIPP) Landfill No. 3. The inspection was completed to comply with *40 CFR 257 Subpart D – Standards for the Disposal of Coal Combustion Residuals in Landfills and Surface Impoundments* and specifically with *§ 257.84(b) Annual inspections by a qualified professional engineer*.

***§ 257.84 Inspection Requirements for CCR Landfills***

*(b) Annual inspections by a qualified professional engineer.*

(1) Existing and new CCR landfills and any lateral expansion of a CCR landfill must be inspected on a periodic basis by a qualified professional engineer to ensure that the design, construction, operation, and maintenance of the CCR unit is consistent with recognized and generally accepted good engineering standards. The inspection must, at a minimum, include:

- (i) A review of available information regarding the status and condition of the CCR unit, including, but not limited to, files available in the operating record (e.g., the results of inspections by a qualified person and results of previous annual inspections); and
- (ii) A visual inspection of the CCR unit to identify signs of distress or malfunction of the CCR unit.

(2) *Inspection report.* The qualified professional engineer must prepare a report following each inspection that addresses the following:

- (i) Any changes in geometry of the structure since the previous annual inspection;
- (ii) The approximate volume of CCR contained in the unit at the time of the inspection;
- (iii) Any 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
- (iv) Any other change(s) which may have affected the stability or operation of the CCR unit since the previous annual inspection.

## Background

The landfill is located in the NW 1/2 of the SE 1/4 of Section 6, Township 48 North, Range 25 West, approximately 4 miles west of the power plant in Marquette Township, Marquette County, Michigan. The landfill is permitted by the Michigan Department of Environmental Quality (MDEQ) under Construction Permit No. 0400 dated February 27, 2002, and the current Operating License. Figure 1 – Site Location Figure, shows the location of the landfill relative to the power plant and the City of Marquette, Michigan. Cell 1 of Landfill No. 3 was constructed in the 2003 construction season and placed into service on October 8, 2005. Cell 2 of Landfill No. 3 was constructed during the 2007 construction season and placed into service on October 10, 2008. The perimeter slopes of Cell 1 were closed during the 2014 construction season and the remainder of the landfill was closed during the 2019 construction season. With the issuance of the Cell 2 closure construction documentation report approval from the Michigan Department of Environment, Great Lakes, and Energy on October 21, 2019, PIPP Landfill No. 3 began the 30-year post-closure care period.

GEI was retained to perform an annual inspection of the landfill in compliance with § 257.84(b) *Annual inspections by a qualified professional engineer*. The inspection was performed on November 30, 2021. Copies of the site location figure, landfill inspection forms, and inspection photo log are appended to this letter-report and constitute the entirety of the report.

## Site Inspections

The landfill site inspection was performed on November 30, 2021. The inspection included a meeting with landfill operation personnel to discuss the daily operation of the facility including storm water/contact water management, leachate hauling, and operation of the leachate collection and removal system; review of the leachate hauling and landfill operating records; observation of the existing site conditions including the access road and cell entrance, and the Landfill 3 final cover slopes.

Based on review of the site and discussions with the landfill operation personnel, post-closure landfill operations are running smoothly and consistently. Leachate hauling has been consistent with operators generally keeping the volume in the tank under 30,000 gallons. Leachate levels in the sumps are always being maintained with less than 1-foot of head on the liner. With the closure of the power plant, We Energies began transporting and disposing of leachate at the Marquette Area Wastewater Treatment Facility on April 23, 2019.

Following the meeting with the operation personnel, GEI performed a site walk and inspected the landfill. Overall, the landfill is in very good condition. The perimeter slopes of Cell 1 closed in 2014 and the Cell 2 perimeter slopes closed in 2019 are in good condition. The vegetation appeared to be well established with no observed bare spots, no significant erosion, no woody vegetation, no animal burrows, no signs of differential settlement, and no areas of instability.

The We Energies Landfill No. 3 is a double lined landfill with a primary leachate collection system and secondary leachate detection system. The leachate collection system is a network of perforated collection pipes running east-west across the landfill within a 12-inch sand drainage layer. The pipes drain to the leachate collection sumps along the east perimeter berm of the landfill. The sump in Cell 2 gravity drains to the sump in Cell 1 where it is extracted by sump pumps installed in sideslope riser pipes. The sump in Cell 1 has two extraction pumps that are individually controlled by pressure transducers installed inside each side slope riser pipe. The pumps are powered on when the leachate head level in the side slope riser reaches 36 inches and power off when the level reaches 18 inches. In the event of a pump failure a high-level alarm is

activated when the sump level reaches 54 inches of leachate head. In accordance with Part 115, Solid Waste Management of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended, We Energies is obligated to maintain the leachate head level to less than 12 inches on the base of the landfill, excluding the sump, which is reached if the leachate head level in the side slope risers reaches 62.4 inches of head.

The leak detection system consists of a geocomposite drainage layer between the primary composite liner system and a secondary geomembrane liner. A secondary sump with a side slope riser pipe and leachate extraction pump is installed in each cell. On the day of the inspection the secondary pumps, P-2-1 installed in Cell 1 and P-4-1 installed in Cell 2 had levels of 19.8 inches and 28.6 inches, respectively. Head level in the primary and secondary sumps are included on the inspection forms.

### Closing

On November 30, 2021, the annual inspection of the We Energies Landfill No. 3 was completed in compliance with § 257.84(b) *Annual inspections by a qualified professional engineer*. Overall, the landfill is in very good condition. The leachate system is functioning as designed and the landfill operators are keeping up with leachate hauling. Based on my observations and discussions with the landfill personnel the landfill is being operated in accordance with Construction Permit No. 0400 dated February 27, 2002; the current Operating License; the requirements of Part 115, Solid Waste Management of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended; and 40 CFR 257 Subpart D – Standards for the Disposal of Coal Combustion Residuals in Landfills and Surface Impoundments.

The inspection was completed by John, M. Trast, P.E. I am a licensed professional engineer in the State of Michigan in accordance with Article 20 of the Occupational Code, Public Act 299 of 1980, as amended. This document has been prepared in accordance with the Michigan Administrative Rules, Department of Licensing and Regulatory Affairs, Professional Engineers – General Rules, Part 3 – Standards of Practice and Professional Conduct; and that, to the best of my knowledge, all information contained in this document is correct and the document was prepared in compliance with all applicable requirements of Part 115 of PA 451, as amended and 40 CFR 257.

If you have any questions regarding this landfill inspection, please contact me at 920-455-8299.

Sincerely,

GEI CONSULTANTS OF MICHIGAN, P.C.



Andrew J. Schwoerer  
Staff Professional



John M. Trast, P.E. D.GE  
Vice President

### Attachments:

- Figure 1 - Site Location
- Landfill Inspection Photo Log
- Landfill Inspection Form 11/30/2021

JXT:cah

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WE ENERGIES  
MARQUETTE, MICHIGAN



PRESQUE ISLE POWER PLANT  
LANDFILL #3  
SITE LOCATION FIGURE

Project 1610536

November 17, 2016

Fig. 1

# WEC PIPP LF 3 Final Cover Inspection

Date: 11/30/2021

Project No.: 2003564

Client: We Energies



Photo No. 1: Toe of north slope of the PIPP Landfill No. 3, looking west.



Photo No. 2: Top of north slope, looking northwest

# WEC PIPP LF 3 Final Cover Inspection

Date: 11/30/2021

Project No.: 2003564

Client: We Energies



Photo No. 3: West slope of the PIPP Landfill No. 3 looking north.



Photo No. 4: Crest of the west slope at the PIPP Landfill No. 3, looking south.

# WEC PIPP LF 3 Final Cover Inspection

Date: 11/30/2021

Project No.: 2003564

Client: We Energies



Photo No. 5: Corner of the west and south slope at the PIPP Landfill No. 3, looking southwest.



Photo No. 6: South slope of the PIPP Landfill No. 3 looking east.

# WEC PIPP LF 3 Final Cover Inspection

Date: 11/30/2021

Project No.: 2003564

Client: We Energies



Photo No. 7: South slope of the PIPP Landfill No. 3 looking northeast.



Photo No. 8: South slope of the PIPP Landfill No. 3 looking west.



# WEC PIPP LF 3 Final Cover Inspection

Date: 11/30/2021

Project No.: 2003564

Client: We Energies



Photo No. 9: East slope of the PIPP Landfill No. 3 looking south.



Photo No. 10: East slope of the PIPP Landfill No. 3 looking northwest.

# WEC PIPP LF 3 Final Cover Inspection

Date: 11/30/2021

Project No.: 2003564

Client: We Energies



Photo No. 11: Top of the PIPP Landfill No. 3 looking west.



Photo No. 12: Leachate control box shed on the east side of the PIPP Landfill No. 3.

### PIPP ASH LANDFILL #3 - ANNUAL INSPECTION

**INSPECTOR:** John M. Trast, P.E.

**INSPECTION DATE/TIME:** 11/30/2021

#### WEATHER:

Temperature: 37° F  
 Conditions: Partly Cloudy  
 Wind: Moderate  
 Wind Direction: NW  
 Precipitation: None

#### LEACHATE COLLECTION SYSTEM:

##### Load-out Facility:

High level alarms: No  
 Low level alarms: No  
 Leak alarms: No  
 Tank Level: ---  
 Tank Volume: 31310 gallons  
 Pump: Available  
 Pad Condition: Good

##### Sump:

Pump #1-1: Available 35.7 in Primary LCS Sump  
 Pump #1-2: Available 33.0 in Primary LCS Sump  
 Pump #2-1: Available 19.8 in Cell 1 Secondary  
 Pump #4-1: Available 28.6 in Cell 2 Secondary  
 Control Panel: Available

Note: 62.4" in P1-1 or P1-2 equates to 12" of head on base liner

Comments: Leachate volume in the tank is being managed by the operators to generally keep the volume less than 30,000 gallons (total capacity is 100,000 gallons). Leachate levels in the sumps are being maintained in compliance with the operating license requirements (no alarms) of less than 1-foot of head on the liner.

#### STABILITY/EROSION OF FINAL COVERS & WASTE SLOPES:

Final Covers:

Waste Slopes:

Comments: The final cover slopes appear stable with no observed instability, no significant erosion, no woody vegetation, no animal burrows, or concerns regarding the final cover slopes. Everything appeared to be in good condition with no observed instability or significant erosion.

**Note: Check mark indicates slope appears stable and no significant erosion.**

#### LANDFILL OPERATIONS:

##### Fugitive Dust Control:

Tracking Pads:

Cattle Guards:

Access Road Clean:

Landfill Surfaces Vegetated:

Airbourne Dust Visible: No

Sign of Recent Dust Deposition: No

##### Stormwater Management

Exterior Ditches:

Interior Ditches:

Catch Basin:

Culverts:

Comments: The landfill was permanently closed upon receipt of the construction documentation report approval from the Michigan Department of Environment, Great Lakes, and Energy (EGLE) on October 21, 2019, beginning the 30-year post closure care period.

**Note: Check mark indicates that the features are acceptable.**