

2023 Annual Landfill Inspection Report

Landfill

**Rockport Plant
Indiana Michigan Power Company
Rockport, Indiana**

September 2023

Prepared for: Indiana Michigan Power Company – Rockport Plant

Prepared by: American Electric Power Service Corporation

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Columbus, OH 43215



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2023 Annual Landfill Inspection Report


Rockport Plant

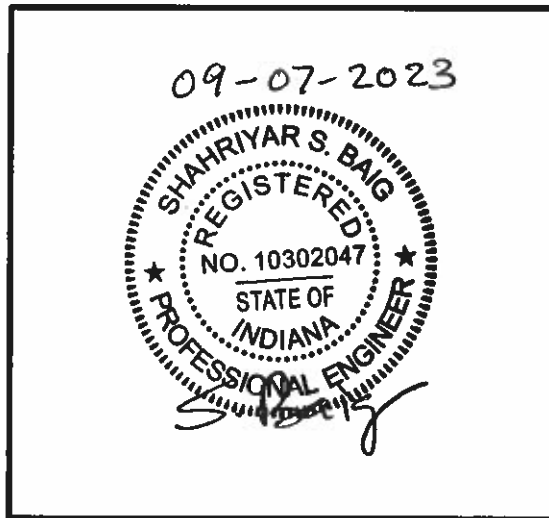
Landfill

Document Number: GERS-23-022

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I certify to the best of my knowledge, information and belief the information contained in this report meets the requirements of 40 CFR § 257.84(b).

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1.0 INTRODUCTION

This report was prepared by AEP- Geotechnical Engineering Services (GES) section, in part, to fulfill requirements of 40 CFR 257.84 and to provide the Rockport Plant an evaluation of the facility.

Mr. Brian Palmer performed the 2023 inspection of the Landfill at the Rockport Plant. This report is a summary of the inspection and an assessment of the general condition of the facility. Mr. Larry Hofius, the landfill supervisor for the Plant, was the facility contact. The inspection was performed on August 1, 2023. Weather conditions during the inspection had temperatures in the upper 70°F to mid-80°F, sunny skies and dry ground conditions. There was 0.94 inches of rainfall recorded over the seven days prior to the inspection.

2.0 DESCRIPTION OF LANDFILL

The overall features of the landfill were categorized into the following components as a means of organizing the inspection and reporting:

- Closed Landfill Area
- 2015 Landfill Construction Area (Cells 1A, 1B, 2, and 3)
- 2016 Landfill Construction Area (Cell 5 and 4A)
- Inactive Landfill Areas (Cells 4B, 6, and 7)
- Leachate Ponds
- Storm Water Drainage Ditches

These features, including the approximate limits of each area, are shown on the Figure 1.

The Closed Landfill Area is located on the north and east sides of the landfill as shown on Figure 1. This area of the landfill was constructed between 1985 and 1987 and was used for disposal of Type II ash. The area was closed and final cover was placed between 2000 and 2007. The final cover consists of twenty-four (24) inch thick compacted clay cover and a six (6) inch thick topsoil cover to support vegetation.

The 2015 Landfill Construction Area (Cells 1A, 1B, 2 and 3). The constructions of these lined cells were completed in 2015 in order to dispose of the Type I Dry Sorbent Injection Ash. Waste placement in the western portion (Cells 1B, 2, & 3) is operationally complete and temporary cover has been installed over the area. Active waste placement is currently in Cell 1A and moving north.

The 2016 Landfill Construction Area (Cell 5 and 4A) was completed in 2016. A portion of this cell was built over the slope of the previously filled Type II landfill area and a perimeter berm construction along the eastern edge of Cell 5 is tied into the existing landfill cap. A soil and vegetative cover was placed over the entire area in 2017. The Southern portion of Cell 5 (referenced as Cell 5S) has had the soil and vegetative cover removed and a separator berm constructed to make area ready for active waste placement.

Inactive Landfill Areas (Cell 4B, 6, and 7) consist of a Perimeter berm and Type II soil liner construction that was completed for these cells during the period from 2012 to 2014 and the area is reserved for future composite liner construction. A layer of intermediate cover soils is in place over part of the Type II soil liner area and is generally vegetated.

3.0 REVIEW OF AVAILABLE INFORMATION (257.84(b)(1)(i))

A review of available information regarding the status and condition of the Landfill which include files available in the operating record, such as design and construction information, previous 7 day inspection reports, and previous annual inspections has been conducted.

4.0 INSPECTION (257.84(b)(1)(ii))

4.1 CHANGES IN GEOMETRY SINCE LAST INSPECTION (257.84(b)(2)(i))

No modifications have been made to the geometry of the Landfill since the 2022 annual inspection. The geometry of the landfill has remained essential unchanged, except for the changes in topography of the active landfill area due to placement of ash.

4.2 VOLUME (257.84(b)(2)(ii))

The total volume of ash disposed at the landfill up to the 2023 inspection date of August 1, 2023 was estimated to be 2,914,030 tons of Type I ash and 5,647,488 tons of Type II ash.

4.3 DEFINITIONS OF VISUAL OBSERVATIONS AND DEFICIENCIES

This summary of the visual observations uses terms to describe the general appearance or condition of an observed item, activity or structure. The meaning of these terms is as follows:

- Good:** A condition or activity that is generally better or slightly better than what is minimally expected or anticipated from a design or maintenance point of view.
- Fair/Satisfactory:** A condition or activity that generally meets what is minimally expected or anticipated from a design or maintenance point of view.
- Poor:** A condition or activity that is generally below what is minimally expected or anticipated from a design or maintenance point of view.
- Minor:** A reference to an observed item (e.g., erosion, seepage, vegetation, etc.) where the current maintenance condition is below what is normal or desired, but which is not currently causing concern from a structure safety or stability point of view.
- Significant:** A reference to an observed item (e.g. erosion, seepage, vegetation, etc.) where the current maintenance program has neglected to improve the condition. Usually conditions that have been identified in the previous inspections, but have not been corrected.
- Excessive:** A reference to an observed item (e.g., erosion, seepage, vegetation, etc.) where the current maintenance condition is above or worse than what it is normal or desired, or which may have affected the ability of the observer to properly evaluate the structure or particular area of interest or which may be a concern from a structure safety or stability point of view.

This document also uses the definition of a “deficiency” as referenced in the CCR rule section §257.84(b)(5) Inspection Requirements for CCR Landfills. This definition has been assembled using the CCR rule preamble as well as guidance from MSHA, “Qualifications for Impoundment Inspection” CI-31, 2004. These guidance documents further elaborate on the definition of deficiency. Items not identified as a deficiency are considered routine maintenance items or items to be monitored.

A “deficiency” is some evidence that a landfill has developed a problem that could impact the structural integrity of the landfill. There are four general categories of deficiencies. These four categories are described below:

1. Uncontrolled Seepage (Leachate Outbreak)
Leachate outbreak is the uncontrolled release of leachate from the landfill.
2. Displacement of the Embankment
Displacement of the embankment is large scale movement of part of the landfill or perimeter berm. Common signs of displacement are cracks, scarps, bulges, depressions, sinkholes and slides.
3. Blockage of Control Features
Blockage of Control Features is the restriction of flow at spillways, decant or pipe spillways, or drains.
4. Erosion
Erosion is the gradual movement of surface material by water, wind or ice. Erosion is considered a deficiency when it is more than a minor routine maintenance item.

4.4 VISUAL INSPECTION (257.84(b)(1)(ii))

A visual inspection of the Landfill was conducted to identify any signs of distress or malfunction of the landfill and appurtenant structures. Specific items inspected included all structural elements of the landfill perimeter berms, temporary and final covers, drainage features, leachate ponds, open cells, and appurtenances such as chimney drains etc.

Overall the facility is in good condition. The landfill is functioning as intended with no signs of potential structural weakness or conditions which are disrupting to the safe operation of the landfill. Inspection photos are included in Attachment A. Additional pictures taken during the inspection can be made available upon request. A map presenting locations of the inspection observations is included in Attachment A.

LEACHATE PONDS

1. The small crack in the concrete liner of the West Pond previously reported was located just above the leachate outlet pipes entering the pond from the south. There appears to be no change in width of the crack from the 2022 inspection.
2. The West pond concrete lined portion was operating with about 6 feet of freeboard. The concrete lined section in general is in good condition with no signs of damage (except for small crack noted above).
3. The LLDPE lined portion of the West Pond appeared to be in good condition with no signs of issues with the liner. The pond was operating with about 6-ft of freeboard.
4. The 002 Pond is out of service and had been pumped mostly empty for maintenance. The LLDPE liner in leachate pond 002 appeared to be in good condition. As the 002 pond liner leaks noted in the 2022 inspection report were repaired in October of 2022.
5. The riprap armor on the exterior slopes of 002 Pond appeared in good condition.
6. Cracks in the above grade concrete thrust blocks for the eastern influent lines into Pond 002 were reviewed and did appear generally similar as noted in 2022.
7. The North Pond was generally in good condition. At the time of the inspection both cells were filled and operating with about 6 feet of freeboard.

8. The concrete lined cell of the North Pond did not appear to have any signs of damage, cracks or spalling. There were no signs of blockage of the inlet and outlet piping. The fence surrounding the leachate pond was in good condition.
9. The liner patch in the North Pond noted in the 2022 inspection was repaired by the plant, and no issues were noted during the inspection.

2015 CONSTRUCTION AREA (CELL 1A, 1B, 2, & 3)

1. The 10-foot tall soil containment berm constructed along the northern edge of Cell 1A in 2021 has been removed and a new containment berm constructed in the southern portion of Cell 5 (see 2016 Construction Area).
2. During the inspection, ash was being placed in the active disposal areas.
3. The chimney drains appear to be functioning as designed and there was some pooling of water around the drains and appeared to be related to topography/grade.
4. The temporary soil cover has been placed on the surface of Cells 1B, 2 & 3 with the area seeded and vegetation generally established.
5. The temporary cover addressed issues with overtopping in Cell 2 and all ash issue identified during the 2022 inspection have been corrected and contained within the working area or with temporary cover.
6. While vegetation is generally established in the temporary cover in Cells 1B, 2, & 3 some areas still need work to finish stabilization with additional seeding and fixing erosion of temporary cover.

2016 CONSTRUCTION AREA (CELL 4A & 5)

1. A new containment berm constructed in the southern portion of Cell 5 (referenced as Cell 5S) and the soil and vegetative cover removed to prepare the area for active waste placement. Standing water was noted along the berm towards the area of waste placement.
2. The chimney drains in the Cell 5S appear functional and ready for waste placement.
3. Cell 4A & 5 had temporary grass cover that was in good condition. There were no signs of settlement, movement or distress in this area.

CLOSED LANDFILL AREAS

1. The area of erosion rill and rodent borrows identified during last year's inspection along the riprap channel adjacent to the landfill access road has been repaired.
2. The closed landfill area was observed to have a thick grass cover over the entire capped area that had recently been mowed. There were no signs of settlement, signs of movement or distress of the landfill area. The closed landfill area was in good condition and well maintained.

INACTIVE LANDFILL AREAS (CELL 4B, 6 & 7)

1. The inactive landfill cells 4B, 6 and 7 were in good condition. The vegetative cover was well established and in good condition. With no apparent signs of erosion or seepage.

STORM WATER DRAINAGE DITCHES

1. The perimeter ditches to the West and South were in good condition with no signs of erosion or blockage and appeared to be functioning as designed.

4.5 CHANGES THAT EFFECT STABILITY OR OPERATION (257.84(b)(2)(iv))

Based on interviews with plant personnel and field observations there were no changes to the landfill since the last annual inspection that would affect the stability of the landfill.

5.0 SUMMARY OF FINDINGS

5.1 GENERAL OBSERVATIONS

The following general observations were identified during the visual inspection:

1. In general, the landfill is functioning as designed and the active cells, inactive cells, closed areas, leachate ponds and ditches are in good condition. Improvements to the facility have been completed over the past several years, including efforts to improve the temporary grass cover, new pond liner installation in leachate pond 002, and the leachate seepage repair to address a previous deficiency.

Continue to performing regular maintenance and inspections as required. Specific maintenance items have been noted and are described in Section 5.2.

5.2 MAINTENANCE ITEMS

The following maintenance items were identified during the visual inspection, see inspection map for locations. Contact GES for specific recommendations regarding repairs:

1. Several areas of erosion or poor vegetation were noted in the temporary cover over Cells 1B, 2, & 3. Continue monitoring and repairing these areas.
2. Install a suitable sealant in the crack in the concrete lined section of the west pond, located above the leachate discharge pipe.

5.3 ITEMS TO MONITOR

The following items are specifically called out continued monitoring.

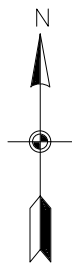
1. Monitor the cracked thrust block on the leachate influent lines on the east side of pond 002 for any additional movement or distress.
2. Continue monitoring and repairing the grass cover in the in the inactive landfill areas.
3. Continue monitoring the liner system in the various leachate ponds and make repairs as appropriate

5.4 DEFICIENCIES (257.84(b)(2)(iii))

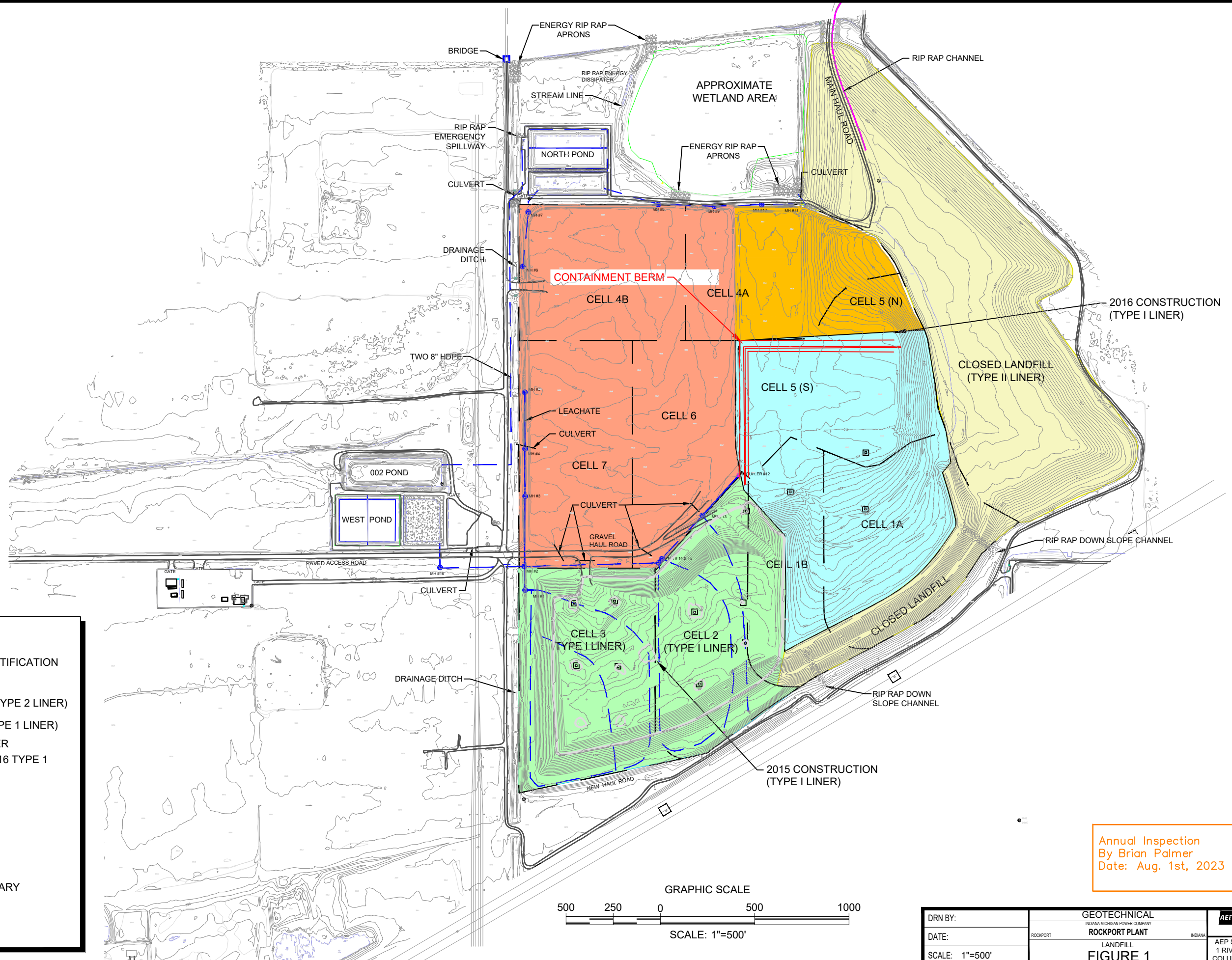
There were no signs of structural weakness or disruptive conditions that were observed at the time of the inspection that would require additional investigation or remedial action.

Based on the review of the data there were no signs of actual or potential structural weakness or adverse conditions. A deficiency is defined as either 1) uncontrolled seepage (leachate outbreak), 2) displacement of the embankment, 3) blockage of control features, or 4) erosion, more than minor maintenance. If any of these conditions occur before the next annual inspection contact AEP Geotechnical Engineering immediately.

Figures

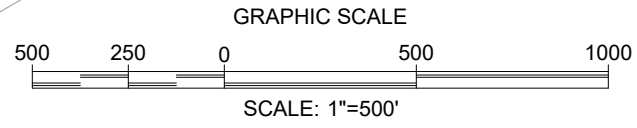


HORIZONTAL DATUM NAD27
 INDIANA WEST ZONE
 VERTICAL DATUM NGVD29



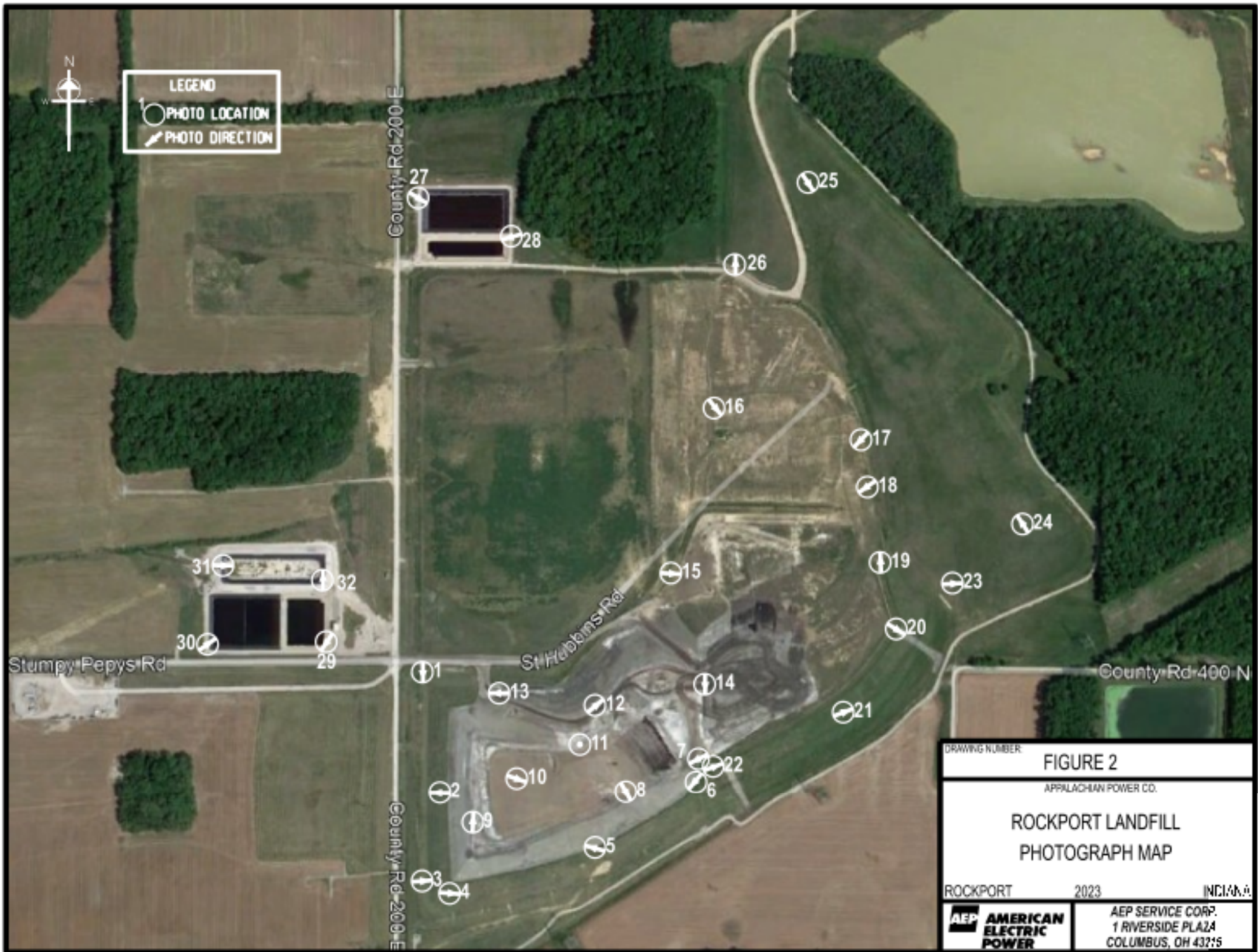
LEGEND:

	TOPOGRAPHIC CONTOURS
	ASBUILT SURFACE FOR CERTIFICATION
	CLOSED LANDFILL AREA
	INACTIVE DISPOSAL AREA (TYPE 2 LINER)
	ACTIVE DISPOSAL AREA (TYPE 1 LINER)
	AREA OF TEMPORARY COVER
	APPROXIMATE LIMITS OF 2016 TYPE 1 LINER CONSTRUCTION
	RIP RAP
	CONCRETE
	SURFACE WATER STREAM OR DRAINAGE CHANNEL
	CULVERT PIPE
	LEACHATE PIPE
	APPROXIMATE CELL BOUNDARY
	CONTROL POINT
	CHIMNEY DRAIN
	LEACHATE MANHOLE



Annual Inspection
 By Brian Palmer
 Date: Aug. 1st, 2023

DRN BY:	GEOTECHNICAL	 AEP SERVICE CORP. 1 RIVERSIDE PLAZA COLUMBUS, OH 43215
DATE:	INDIANA MICHIGAN POWER COMPANY ROCKPORT PLANT	
SCALE: 1"=500'	LANDFILL FIGURE 1	



LEGEND

○ PHOTO LOCATION

○ PHOTO DIRECTION

DRAWING NUMBER: FIGURE 2		
APPALACHIAN POWER CO.		
ROCKPORT LANDFILL PHOTOGRAPH MAP		
ROCKPORT	2023	INDIANA
AMERICAN ELECTRIC POWER	AEP SERVICE CORP. 1 RIVERSIDE PLAZA COLUMBUS, OH 43215	

PLOT TIME: HOUR:MINUTE BY: LOGSHEET

ATTACHMENT A

Photos

AEP GES Landfill Inspection

Plant Name:

Inspector:

Unit:

Date:

Photo #:

Notes:



Photo #:

Notes:



AEP GES Landfill Inspection

Plant Name:

Inspector:

Unit:

Date:

Photo #:

Notes:



Photo #:

Notes:



AEP GES Landfill Inspection

Plant Name:

Inspector:

Unit:

Date:

Photo #:

Notes: Erosion repair areas on upper part of south slope of Cell 2 temporary cover



Photo #:

Notes: General condition of temporary cover on cell 1B south slope



AEP GES Landfill Inspection

Plant Name:

Inspector:

Unit:

Date:

Photo #:

Notes: General condition of cell 1B temporary cover on upper area. Area recently seeded and Grass still high to allow vegetation to establish



Photo #:

Notes: General condition of cell 2 south slope. Note spots with limited vegetation on the surface of the lower berm.



AEP GES Landfill Inspection

Plant Name:

Inspector:

Unit:

Date:

Photo #:

Notes:



Photo #:

Notes:



AEP GES Landfill Inspection

Plant Name:

Inspector:

Unit:

Date:

Photo #:

Notes: Erosion around mulch log on temporary cover in cell 2



Photo #:

Notes: General condition of temporary cover on north slope of cells 1B & 2.



AEP GES Landfill Inspection

Plant Name:

Inspector:

Unit:

Date:

Photo #:

Notes:



Photo #:

Notes:



AEP GES Landfill Inspection

Plant Name:

Inspector:

Unit:

Date:

Photo #:

Notes:



Photo #:

Notes:



AEP GES Landfill Inspection

Plant Name:

Inspector:

Unit:

Date:

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AEP GES Landfill Inspection

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AEP GES Landfill Inspection

Plant Name:

Inspector:

Unit:

Date:

Photo #:

Notes:



Photo #:

Notes:



AEP GES Landfill Inspection

Plant Name:

Inspector:

Unit:

Date:

Photo #:

Notes: West leachate settling pond inlet. Note crack in concrete above pipe. Appears similar to previous inspections



Photo #:

Notes: General condition of west leachate pond



AEP GES Landfill Inspection

Plant Name:

Inspector:

Unit:

Date:

Photo #:

Notes:



Photo #:

Notes:

