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East and West Bottom Ash Ponds 2024 Annual Dam and Dike Inspection Report

Rockport Plant, Rockport, Indiana

Submitted to:

American Electric Power Service Corporation
1 Riverside Plaza
Columbus, OH 43215

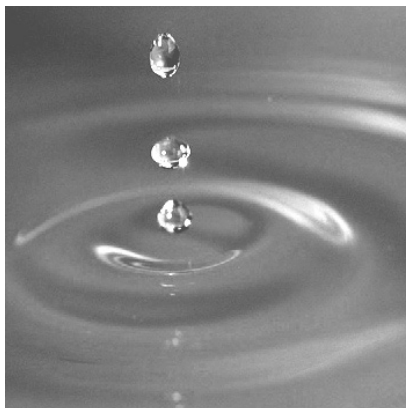
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2024 Annual Inspection Report



East and West Bottom Ash Ponds Rockport Power Plant AEP Document ID: GEVR-24-016

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September 3, 2024

Date



I certify, to the best of my knowledge, that the information provided in this report satisfies the requirements of 40 CFR 257.83(b).

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1. Introduction

GEI Consultants, Inc. was retained by AEP to implement the 2024 Dam Inspection and Maintenance Program (DIMP) at AEP facilities. As part of the program, GEI's Pedro Amaya, P.E. performed the 2024 inspection of the East and West Bottom Ash Ponds at the Rockport Plant in part, to fulfill requirements of 40 CFR 257.83 for the CCR impoundment and to provide the Rockport Plant an evaluation of the units. Mr. Larry Hofius is the AEP facility contact. This report was prepared by Pedro Amaya and Jeff Piaskowski of GEI and serves as a summary of the inspection and an assessment of the general conditions of the East and West Bottom Ash Ponds at the Rockport Power Generating Plant.

The inspection was performed on June 5, 2024, in general accordance with the Mining Safety and Health Administration (MSHA) Dam Inspection Guidelines. Weather conditions were cloudy with mild temperatures (74°F - 78°F), a few showers were present during the inspection. Approximately 3-inches of precipitation was recorded at the plant in the 7 days prior to the inspection.

The Rockport Power Generating Plant is located near Rockport, Indiana as shown on Figure 1 – Site Location Map. The facility arrangement is provided on Figure 2 – Facility Plan. The East and West Bottom Ash Ponds and their appurtenances are shown on Figure 3 – Site Plan.

2. Description of Impoundments

The East and West Bottom Ash Ponds are existing CCR surface impoundments as defined in 40 CFR 257. In accordance with 40 CFR 257.83, an annual inspection must be completed by a qualified professional engineer to ensure the design, construction, operation, and maintenance of the unit is consistent with generally accepted good engineering standards.

The East and West Bottom Ash Ponds are generally below grade with only the west dike of the West Bottom Ash Pond extending above grade such that the normal pool elevation is maintained above ground level. The exterior slopes are approximately 2.5:1 (horizontal:vertical) with approximate 2:1 interior slopes.

2.1 East Bottom Ash Pond

The East Bottom Ash Pond is an incised pond with the surrounding ground at elevations above 399 feet msl. The splitter dike separating the East Bottom Ash Pond and the West Bottom Ash Pond is approximately 2,000-feet-long and has a maximum height of 22 feet, as measured from the floor of the East Bottom Ash Pond to the top of the splitter dike. The splitter dike was constructed with compacted cohesive soil with a 2:1 side slope. The bottom elevation of the East Bottom Ash Pond is at elevation 377 feet msl with a minimum operating pool elevation of 391 feet msl which yields a storage capacity of 337 acre-feet.

In 2022 and 2023, the CCR materials were removed from the East Bottom Ash Pond. After removal of the CCR, an additional 12-inches of underlying material was removed to ensure removal of potentially contaminated soils.

In 2023 as part of the East Bottom Ash Pond retrofit, the wooded surface skimming structure was demolished, the low water discharge structure with stop logs was demolished, and the 30-inch-diameter low water discharge pipe was abandoned with grout. The East Bottom Ash Pond was retrofitted with a 40-mil LLDPE geomembrane, a geosynthetic clay liner (GCL), and a 10 oz/sy nonwoven geotextile. At the north end of the East Bottom Ash Pond, a splitter dike was installed to create a forebay for CCR storage. The forebay has a Fabriform® reinforced concrete grout layer over the 40-mil LLDPE liner. During overflow conditions, the retrofitted East Bottom Ash Pond discharges to the East Wastewater Pond.

2.2 West Bottom Ash Pond

The West Bottom Ash Pond dike is approximately 2,000 feet-long and has a maximum height of 13 feet as measured from the floor at the interior toe to the top of the dike. The dike has a design crest width of 30 feet and was constructed with compacted soil. The top of the dike is at elevation 399 feet msl with the natural ground surface beneath the dikes at about elevation 390 feet. The embankment fill exterior side slopes are approximately 2.5:1 and transition to 3:1. The interior side slopes are 2:1. The floor elevation of the West Bottom Ash Pond is 386 feet msl with a minimum operating pool elevation of 394 feet msl which yields a storage capacity of 211 acre-feet. All CCR and miscellaneous wastewater flows have been directed away from the West Bottom Ash Pond. Closure of the West Bottom Ash Pond by removal of CCR is on-going.

3. Review of Available Information (257.83(b)(1)(i))

In addition to the annual visual inspection, GEI reviewed available information regarding the status and condition of the East Bottom Ash Pond and West Bottom Ash Pond, including files available in the operating record. Available information consists of design and construction information, previous structural stability assessments, previous 7-day inspection reports, 30-day inspection reports, and previous annual inspection reports. Based on the findings of the current visual inspection and the review of the available data, it is concluded that there were no signs of actual or potential structural weakness or adverse conditions, and that the CCR unit is performing as intended in the design documents.

4. Inspection (257.83(b)(1)(ii))

4.1 Changes in Geometry Since Last Inspection (257.83(b)(2)(i))

Since the last annual inspection, There has been no changes in the geometry of the bottom ash ponds.

4.2 Instrumentation (257.83(b)(2)(i))

There is no instrumentation for the East Bottom Ash Pond or West Bottom Ash Pond.

4.3 Impoundment Characteristics (257.83(b)(2)(iii, iv, v))

Table 1 is a summary of the minimum, maximum, and present depth and elevation of the impounded water & CCR since the previous annual inspection; the storage capacity of the impounding structure at the time of the inspection; and the approximate volume of the impounded water and CCR at the time of the inspection.

Table 1: Impoundment Characteristics: Bottom Ash Ponds		
	West Bottom Ash Pond	East Bottom Ash Pond
Approximate Minimum depth (elevation) of impounded water since last annual inspection	0-ft Closure in progress	14 ft. (391)
Approximate Maximum depth (elevation) of impounded water since last annual inspection	5-ft (391 ft msl) Closure in progress	18.6 ft. (395.6 ft msl)
Approximate Present depth of impounded water at the time of the inspection	0-ft Closure in progress	18.61 ft.
Approximate Minimum depth (elevation) of CCR since last annual inspection	0-ft Closure in progress	0 ft. (NA)
Approximate Maximum depth (elevation) of CCR since last annual inspection	5-ft (391 ft msl) Closure in progress	2.5 ft. (381 ft msl)
Approximate Present depth (elevation) of CCR at the time of the inspection	Varies Closure in progress	0.5 ft. (N/A)
Storage capacity of impounding structure at the time of the inspection	352 ac-ft Closure in progress	500 ac-ft.
Approximate volume of impounded water at the time of the inspection	0ac-ft Closure in progress	390 ac-ft.
Approximate volume of CCR at the time of the inspection	170 ac-ft (274,000 CY)	4 ac-ft

4.4 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, cracks, concrete surface 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, cracks, concrete surface etc.) where the current maintenance program has neglected to improve the condition. Usually, conditions that have been identified in previous inspections, but have not been corrected.
- Excessive:** A reference to an observed item (e.g. erosion, seepage, vegetation, cracks, concrete surface etc.) where the current maintenance condition is below or worse than what is normal or desired, and which may have affected the ability of the observer to properly evaluate the structure or area being observed 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 defined by deficiency are considered maintenance or items to be monitored.

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

1. Uncontrolled Seepage

Uncontrolled seepage is an uncontrolled release from the unit.

2. Displacement of the Embankment

Displacement of the embankment is large scale movement of part of the pond embankment. 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.

4.5 Visual Inspection (257.83(b)(2)(i))

A visual inspection of the East and West Bottom Ash Ponds was conducted to identify any signs of distress or malfunction of the impoundment dams and appurtenant structures. The following structural elements were included in the annual inspection: inboard and outboard slopes, crest, and toe.

Overall, these units are in good condition. The impoundments are functioning as intended with no signs of potential structural weakness or conditions, which would disrupt the safe operation of the impoundments. Details of the visual inspection are presented below. Photographs taken during the inspection are included in Appendix A - Photolog. Each photograph that was captured during the inspection was tagged as either a general site observation, as an item to be monitored, or as an item to be addressed. The site observations are presented on Figure 3 – Site Plan. It should be noted that the inspection did not identify any items to be monitored or addressed.

4.5.1 East Bottom Ash Pond

1. The sluiced ash and other effluents were entering the forebay portion of the pond to the north. The interior slopes showed no signs of distress such as sloughing, bulges or erosion. The interior slopes are lined with a composite liner system with the forebay having a grouted revetement as shown in Photographs No. 1 and No. 3.
2. No evidence of seepage though the splitter dike separating the East Bottom Ash Pond and East Wastewater Pond.

3. The primary discharge structure was in good condition and normally submerged components could not be inspected.
4. The access road located at the crest of the pond appeared in good and stable condition with no signs of distress such as settlement, cracking, or ruts.

4.5.2 West Bottom Ash Pond

The West Bottom Ash Pond is inactive. It is currently de-watered and being closed by removal as shown in Photograph No. 2. The pond contents were placed in rows to facilitate drying before hauling and placement at the existing landfill.

4.5.3 Changes that Effect Stability or Operation (257.83(b)(2)(vii))

Based on interviews with plant personnel and field observations there were no changes to the East or West Bottom Ash Ponds since the last annual inspection that would affect the stability of the impounding structures.

5. Summary of Findings

5.1 General Observations

The following general observations were identified during the visual inspection:

- The outboard slopes, crest, inboard slopes, and splitter dikes were generally in good condition. The crest did not contain any ruts, cracks, depressions or other signs of instability.

5.2 Maintenance Considerations

The following considerations are provided to help maintain the CCR units, allowing them to function as their designs intended:

- Continue with the vegetation maintenance & mowing efforts at the facility.
- Repair any damage to the synthetic liner that may occur as a result of human or animal activity.

5.3 Items to be Monitored

The inspection did not identify any items to be monitored.

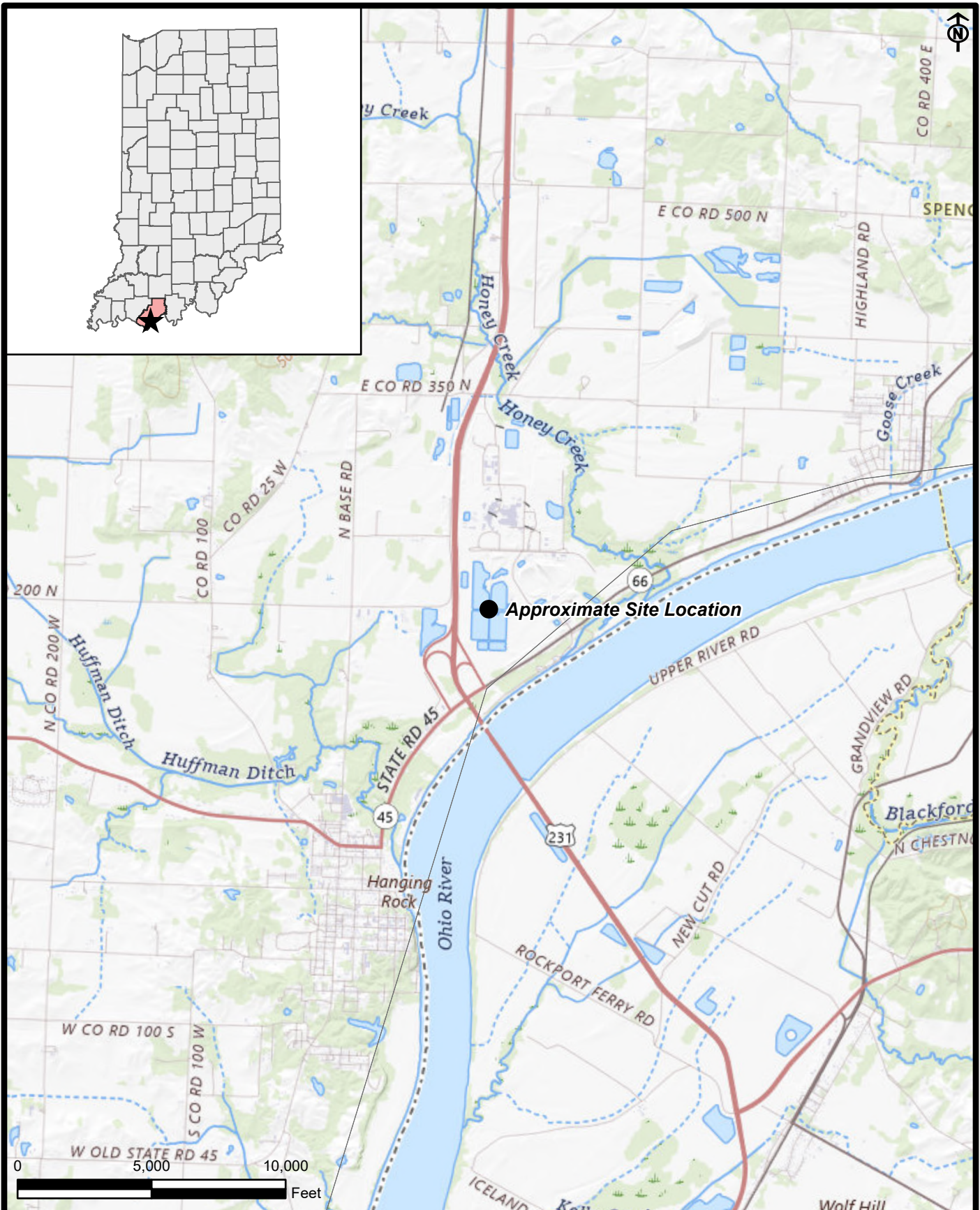
5.4 Items to be Addressed

The inspection did not identify any items to be addressed.

5.5 Deficiencies (257.83(b)(2)(vi))

The East & West Bottom Ash Ponds had 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. There were no deficiencies noted during this inspection or during any of the periodic 7-day or 30-day inspections. A deficiency is defined as: 1) uncontrolled seepage, 2) displacement of the embankment, 3) blockage of control features, or 4) erosion, more than that requiring minor maintenance. If you have any questions with regard to this report, please contact AEP-Geotechnical Engineering Brian Palmer (Phone:614-716-3382, email: bgpalmer@aep.com) or Bryan Brunton (Phone:614-477-2659, email: bwbrunton@aep.com)

Figure 1 – Site Location Map



2024 East and West Bottom Ash Ponds Inspection
 Rockport Power Plant
 Rockport, Indiana

American Electric Power Service Corporation
 Columbus, OH 43215



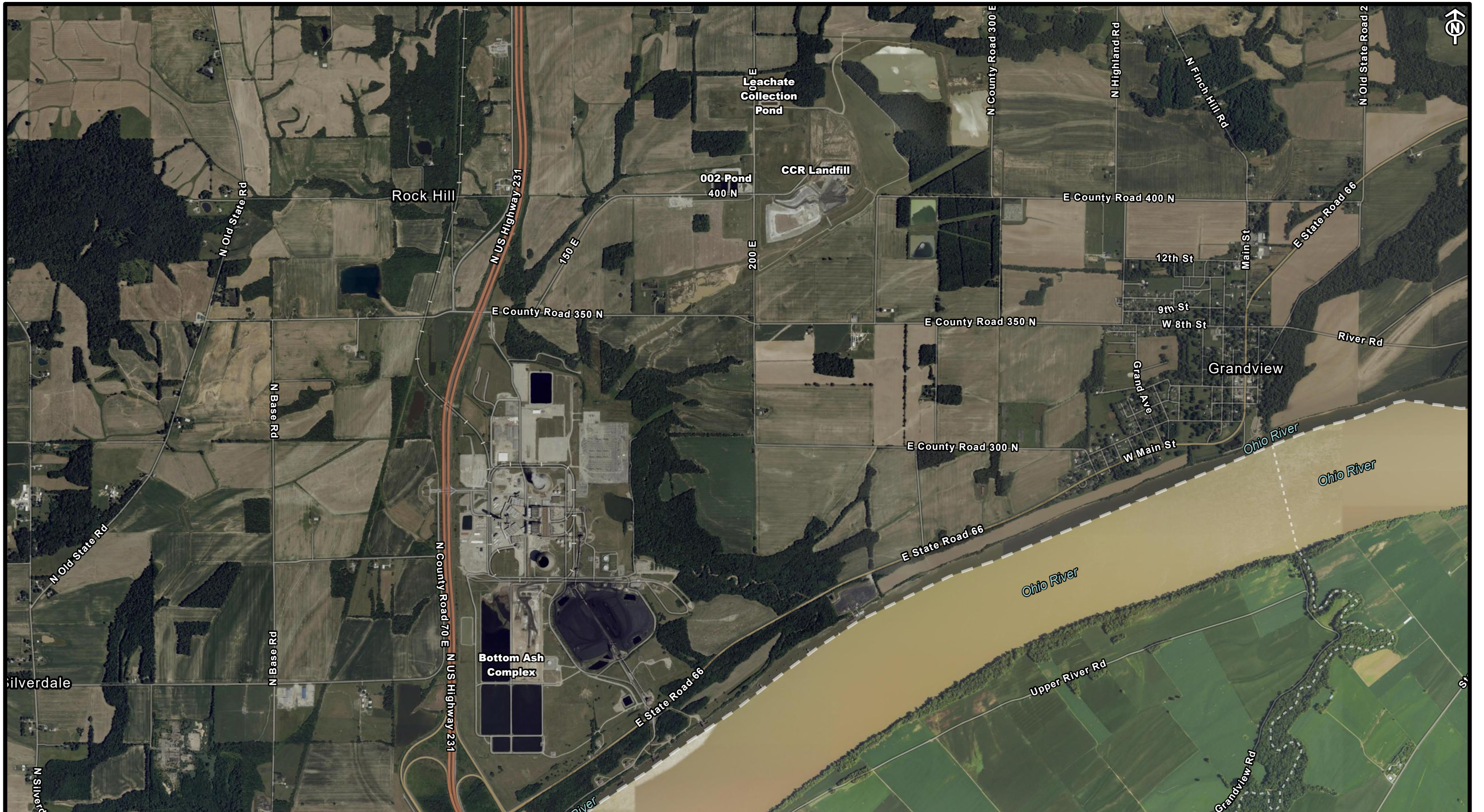
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SITE LOCATION DIAGRAM

August 2024

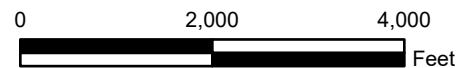
Fig. 1

Figure 2 – Facility Plan



NOTES:

1. Aerial image obtained from USDA NAIP. Image captured spring of 2021.
2. Site conditions may change over time, accuracy is not guaranteed.



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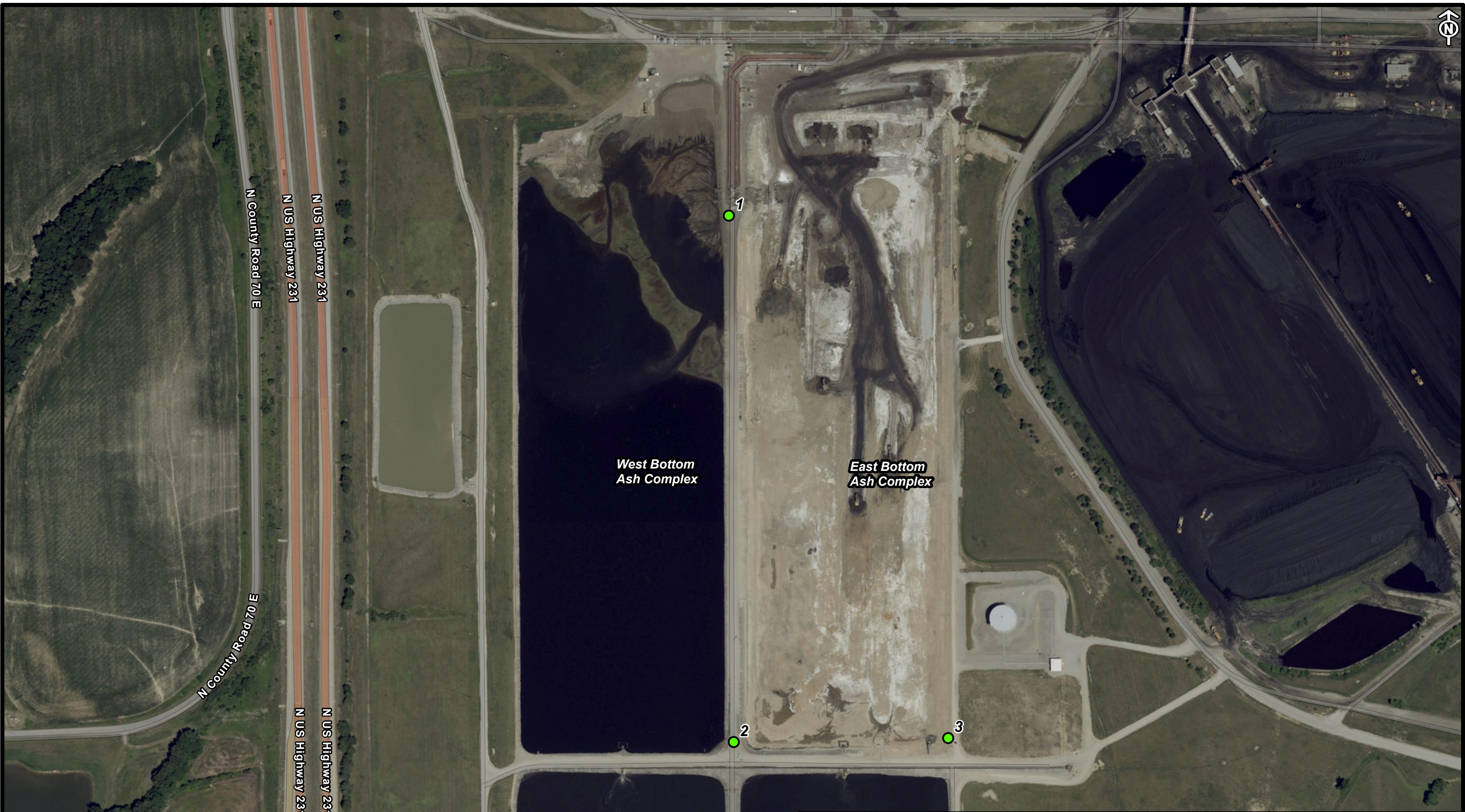
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FACILITY PLAN


June 2024

Fig. 2

Figure 3 – Site Plan



LEGEND:

 General Observation

NOTES:

1. Aerial image obtained from USDA NAIP. Image captured spring of 2021.

2. Points shown represent site conditions during time of inspection. Conditions may change overtime, accuracy is not guaranteed. Map should not be used for measurement.



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SITE PLAN

August 2024



Fig. 3

Appendix A - Photolog

Photographic Log



Project: East & West Bottom Ash Ponds Inspection
Client: American Electric Power **GEI Project:** 2305686


PHOTOGRAPH NO: 1	DATE: June 5, 2024 1:17 PM	LATITUDE: 37.9015863	LONGITUDE: -87.0978508
DIRECTION: South	SITE LOCATION: ROCKPORT, INDIANA		
DESCRIPTION: West area of East pond, Upstream Slope of Inboard Dike. Looking South. General Photo, Typical Conditions. Note Stockpiling of Material as Closure by removal of West Pond is implemented.			
PHOTO BY: GEI CONSULTANTS, INC.			
PHOTOGRAPH NO: 2	DATE: June 5, 2024 1:28 PM	LATITUDE: 37.8990752	LONGITUDE: -87.1034664
DIRECTION: North	SITE LOCATION: ROCKPORT, INDIANA		
DESCRIPTION: West Pond being closed by Removal. Looking North. General Photo, Typical Conditions. No Poned Water at time of inspection.			
PHOTO BY: GEI CONSULTANTS, INC.			

Photographic Log



Project: East & West Bottom Ash Ponds Inspection
Client: American Electric Power

GEI Project: 2305686

PHOTOGRAPH NO: 3	DATE: June 5, 2024 2:12 PM	LATITUDE: 37.9162358	LONGITUDE: -87.03412719
DIRECTION: North	SITE LOCATION: ROCKPORT, INDIANA		
DESCRIPTION: Upstream Slope of East Bottom Ash Pond, Eastern Dike. Looking North. Synthetic Cover, Typical Conditions.	 A photograph showing the upstream slope of an ash pond. The foreground is dominated by a dark, wrinkled synthetic liner (likely polyethylene) that runs along the edge of a gravelly dike. To the left of the dike is a body of water. In the background, industrial structures including several tall, cylindrical cooling towers and various pipes and walkways are visible under a clear sky.		
PHOTO BY: GEI CONSULTANTS, INC.			