



INDIANA-KENTUCKY ELECTRIC CORPORATION

3932 U. S. Route 23
P. O. Box 468
Piketon, Ohio 45661
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WRITER'S DIRECT DIAL NO:
740-289-7267

December 16, 2016

Ms. Carol Comer
Commissioner
Indiana Department of Environmental Management
100 N. Senate Avenue
Mail Code 50-01
Indianapolis, IN 46204-2251

**Re: Indiana-Kentucky Electric Corporation
Clifty Creek Station
Notification of CCR Rule Information Posting**

Dear Ms. Comer:

As required by 40 CFR 257.106(g), the Indiana-Kentucky Electric Corporation (IKEC) is providing notification to the Commissioner (State Director) of the Indiana Department of Environmental Management that the Clifty Creek Station's annual CCR surface impoundment inspection, required by 40 CFR 257.83, was placed in the facility's Operating Record, and has been placed on the company's publically accessible internet site.

This information can be viewed on OVEC's publically accessible internet site at:

<http://www.ovec.com/CCRCompliance.php>

If you have any questions, or require any additional information, please call me at (740) 289-7267.

Sincerely,

A handwritten signature in black ink that reads "Gabriel S. Coriell".

Gabriel S. Coriell
Environmental Services Manager

GSC:klr

2016 ANNUAL DAM AND DIKE INSPECTION REPORT

**West Boiler Slag Pond
&
Landfill Runoff Collection Pond**

**CLIFTY CREEK PLANT
Indiana-Kentucky Electric Corporation
MADISON, INDIANA**

November, 2016

Prepared for: Indiana-Kentucky Electric Corporation
3932 U.S. Route 23
P.O. Box 468
Piketon, Ohio 45661

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



GERS-16-150

**Dam & Dike Inspection Report
West Boiler Slag Pond &
Landfill Runoff Collection Pond**

GERS-16-150

REVISION 0

CLIFTY CREEK PLANT

MADISON, INDIANA

INSPECTION DATE October 13, 2016

PREPARED BY

Mohammad A. Ajlouni
Mohammad A. Ajlouni, Ph.D., P.E.

DATE

11/16/2016

REVIEWED BY

Daniel W. Pizzino
Daniel W. Pizzino, P.E.

DATE

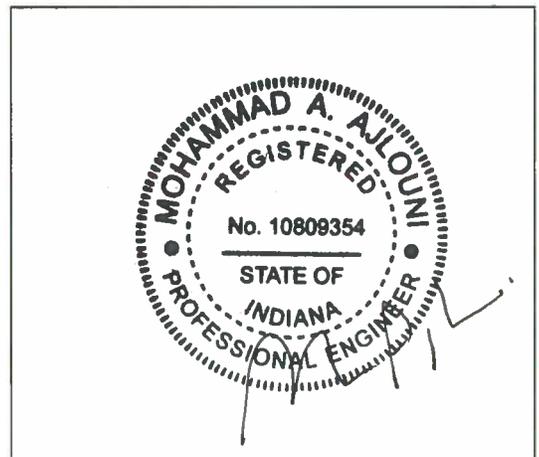
11/18/2016

APPROVED BY

Gary F. Zych
Gary F. Zych, P.E.
Manager - Geotechnical Engineering

DATE

11/21/2016



**PROFESSIONAL ENGINEER
SEAL & SIGNATURE**

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Annual Dam and Dike Inspection Report (2016)
Clifty Creek Station

1.0 INTRODUCTION

This report was prepared by AEP- Geotechnical Engineering Services (GES) section, in part, to fulfill requirements of 40 CFR 257.83 and the Indiana Department of Natural Resource (IDNR), Division of Water and to provide Indiana-Kentucky Electric Corporation (IKEC) and Clifty Creek Station with an evaluation of the facility.

American Electric Power Service Corporation's Civil Engineering Division administers the Clifty Creek Station Dam Inspection and Maintenance Program (DIMP). As part of the DIMP, staff from the Geotechnical Engineering Services Section annually conducts dam and dike inspections. This report contains the inspection findings, observations, photographic descriptions, conclusions, and maintenance recommendations. This inspection report addresses the West Boiler Slag Pond (Previously known as West Bottom Ash Pond), and Landfill Runoff Collection Pond (Previously known as Fly Ash Pond) at the Clifty Creek Station. The East Bottom Ash Pond (EBAP) is no longer active for ash storage and waste water treatment. The EBAP was drained, backfilled and closed converted to a surface water collection pond in the 2014.

Mr. Danny Hunt, Plant Engineer, Clifty Creek Station provided onsite coordination for inspection activities. The inspection was performed on October 13, 2016 by Mohammad Ajlouni of AEP Geotechnical Engineering. Also Dalton Barnes of IKEC was onsite for the inspection. Weather conditions were sunny with temperatures in upper 60s F to low 70s F, with good visibility.

2.0 DESCRIPTIONS OF IMPOUNDMENTS

2.1 WEST BOILER SLAG POND

The West Boiler Slag Pond (WPSP) (Figure 1) is located southwest of the station. It is formed by natural grade to the north, east, and west and a dam on the south that runs along the bank of the Ohio River. The West Boiler Slag Pond serves as a settling basin for sluiced bottom ash produced at the station and receives stormwater runoff from approximately 510 acres (Stantec, 2010a). The West Boiler Slag Pond is used for the storage of bottom ash generated from all six generating Units. It consists of a single dike that is approximately 2,000 feet long and is approximately 35 feet high. The pond contains two primary areas: the eastern portion near the sluice pipes that is actively dredged and a western portion with minimal deposition or dredging activities. A vegetation delta separates the two as a natural filtering zone. The pond discharges to the Ohio River through a principal spillway at the southern edge of the impoundment.

2.2 LANDFILL RUNOFF COLLECTION POND

The Landfill Runoff Collection Pond (LRCP) is located at the southern edge of the station. It is bordered by the station's coal combustion residuals (CCR) landfill to the north, natural grade to the east and west, and by a dam to the south that runs along the bank of the Ohio River.

The LRCP dam is a cross valley dam located on a no-name tributary to the Ohio River. The dam is approximately 1,025 feet long and has a maximum height of 75 feet. Currently, the facility functions as the stormwater and leachate collection pond for the CCR landfill, and discharges to the Ohio River through a NPDES-permitted outfall.

Approximately 508 acres of both landfill contact water and stormwater runoff drain to the FAP/LRCP. Upon the completion of the CCR landfill, the area draining to the FAP/LRCP will be reduced to approximately 443 acres.

3.0 REVIEW OF AVAILABLE INFORMATION (257.83(b)(1)(i))

A review of available information regarding the status and condition of the West Boiler Slag Pond and the Landfill Runoff Collection Pond, which include files available in the operating record, such as design and construction information, previous periodic structural stability assessments, previous 7 day inspection reports, and previous annual inspections has been conducted. Based on the review of the data there were no signs of actual or potential structural weakness or adverse conditions.

4.0 INSPECTION (257.83(b)(1)(ii))

4.1 BOILER SLAG POND

4.1.1 CHANGES IN GEOMETRY SINCE LAST INSPECTION (257.83(b)(2)(i))

No modifications have been made to the geometry of the Boiler Slag Pond since the 2015 annual inspection. The geometry of the impoundment has remained essentially unchanged.

4.1.2 INSTRUMENTATION (257.83(b)(2)(ii))

The location and type of instrumentation is shown on Figure 1. The results of the measurements of various piezometers since September 2015 are shown in Figure 2. The maximum recorded readings of each instrument since the previous annual inspection is shown in Table 1.

Table 1 WBSP Maximum recorded instruments reading since the previous annual inspection

INSTRUMENTATION DATA			
West Boiler Slag Pond			
Instrument	Type	Maximum Reading since last annual inspection	Date of Reading
PZ-1 (B-1)	Piezometer	Dry	N/A
PZ-3 (B-3)	Piezometer	435.8	3/15/2016
PZ-4 (B-4)	Piezometer	428.0	2/26/2016
PZ-5 (B-5)	Piezometer	431.0	5/27/2016

A review of the data contained on the WBSP static water elevation plot showed that all piezometers exhibit consistent water elevations. PZ-1 is a piezometer located at the crest of the constructed dike (shown as B-1 on location plan) which was dry for readings in 2016. PZ-2 is a piezometer located along a bench near the downstream toe of the constructed dike (shown as B-2 on location plan) which was damaged and abandoned. PZ-3 is a piezometer located at the crest of the constructed dike (shown as B-3 on location plan). PZ-4 is a piezometer located along a bench near the downstream toe of the constructed dike (shown as B-4 on location plan). PZ-5 is a piezometer located at the crest of the constructed dike (B-5 on location plan) and was dry for most of the past 12 months readings.

4.1.3 IMPOUNDMENT CHARACTERISTICS (257.83(b)(2)(iii, iv, v))

Below 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 2 Summary of Relevant Storage Information WBAP

IMPOUNDMENT CHARACTERISTICS	
West Boiler Slag Pond	
Approximate Minimum depth (Elevation) of impounded water since last annual inspection	14 ft. (447) ft.
Approximate Maximum depth (Elevation) of impounded water since last annual inspection	15 ft. (448) ft.
Approximate Present depth (Elevation) of impounded water since last annual inspection	14 ft. (447) ft.
Approximate Minimum depth (Elevation) of CCR since last annual inspection	7.5 ft. (440) ft.
Approximate Maximum depth (Elevation) of CCR since last annual inspection (ft.)	7.5 ft. (440 ft.)
Approximate Present depth (Elevation) of CCR since last annual inspection	7.5 ft. (440 ft.)
Storage Capacity of impounding structure at the time of the inspection	1,950,000 c.y.
Approximate volume of impounded water at the time of the inspection	837,000 c.y.
Approximate volume of CCR at the time of the inspection	782,000 c.y.

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4.1.4 VISUAL INSPECTION (257.83(b)(2)(i))

A visual inspection of the West Boiler Slag Pond was conducted to identify any signs of distress or malfunction of the impoundment and appurtenant structures. The inspection also included hydraulic structures underlying the base of the dike. Specific items inspected included all structural elements of the dam such as inboard and outboard slopes, crest, and toe; as well as appurtenances such as the outlet structure at the West Boiler Slag Pond, and pipe discharge structure.

– See Appendix A for Photographs and photographs location plan

In general, the interior and exterior slopes of the dike appear to be in fair and stable condition. No significant change to the exterior slope was noted from the previous inspection. No significant settlement or misalignment was observed. Seeps were not observed during the inspection. No animal burrows were observed during the inspection.

1. Photograph No. 1 illustrates a typical overview of the dike crest. The crest appears to be in good and stable condition. Signs of settlement, misalignment and cracking were not observed.
2. Photograph No. 2 and Photograph No. 3 illustrate the condition of the interior slopes at the settling end of the pond and the present extent of boiler slag buildup. The interior slope of the east dike at this end of the pond appeared to be in fair and stable condition. Photograph No. 3 shows an area of significant erosion on the interior slope.
3. Photograph No. 4 shows a location where the use of the remotely controlled mower, appear to have caused disturbance to the inboard slopes at areas where the soil is more granular (bottom ash).
4. Photograph No. 5 provides an overview of the extent of the filtering vegetation within the clear water end of the pond. It was noted that the propagation of that filtering vegetation has not progressed to any significant extent since the last inspection.
5. Photograph 6 through Photograph 9 show the general condition of the crest and the interior slope of the west end of the south dike.
6. Photograph No. 10 shows the overflow structure and the interior slopes of the dike. Localized areas of overgrown vegetation is present.
7. Photograph No. 11 and Photograph No. 12 show the excessive vegetation along the exterior slope at the northeast end of the dike.
8. Photograph No. 13, Photograph No. 14 and Photograph No. 15 show the general condition of the crest and the exterior slope of the west end of the south dike. No wet areas were noted during this inspection. The slope appeared in good and stable condition.
9. The overflow discharge structure walkway, railings, metal decking, and visible concrete were found to be in good, functional condition. Photographs No. 16, No. 17, and No.18 illustrate the access metal walkway, metal deck, spare stop logs and interior of the overflow discharge structure.
10. Photograph No. 19 shows the accumulation of significant wood debris carried by the river during flooding events above the discharge pipe.

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11. Photograph No. 20 Photograph No. 21 and Photograph No. 22 show the typical condition of the discharge pipe and outlet channel. Significant wood debris carried by the river during flooding events. Erosion at the confluence of the channel and the river was consistent with the conditions observed in the past years. The channel and outlet pipe were observed to be in good condition and were unobstructed and flowing steadily.

Overall the facility is in good condition. The impoundment is functioning as intended with no signs of potential structural weakness or conditions which are disrupting to the safe operation of the impoundment. Additional pictures taken during the inspection can be made available upon request.

4.1.5 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 West Boiler Slag Pond since the last annual inspection that would affect the stability or operation of the impounding structure.

4.2 LANDFILL RUNOFF COLLECTION POND

4.2.1 CHANGES IN GEOMETRY SINCE LAST INSPECTION (257.83(b)(2)(i))

No modifications have been made to the geometry of the Landfill Runoff Collection Pond since the 2015 annual inspection. The geometry of the impoundment has remained essential unchanged.

4.2.2 INSTRUMENTATION (257.83(b)(2)(ii))

The location and type of instrumentation is shown on Figure 3. The results of the measurements of various piezometers since September 2015 are shown in Figure 4. The maximum recorded readings of each instrument since the previous annual inspection is shown in Table 3 below.

Table 3 LRCP Maximum recorded instruments reading since the previous annual inspection

INSTRUMENTATION DATA			
Landfill Runoff Collection Pond			
Instrument	Type	Maximum Reading since last annual inspection	Date of reading
CF-9405	Piezometer	443.59	3/15/2016
CF-9406	Piezometer	443.45	3/15/2016
CF-9407	Piezometer	454.91	2/26/2016
SP-84-1	Piezometer	471.8	3/29/1901
SP-84-2	Piezometer	446.28	5/27/2016
SP-84-4	Piezometer	N/A	3/20/1901
SP-84-5	Piezometer	441.76	5/27/2016
SP-84-6	Piezometer	462.58	12/17/2015
SP-84-7	Piezometer	452.89	2/26/2016
SP-84-8A	Piezometer	455.03	3/15/2016

There are piezometers and monitoring wells installed in and around the LRCP dam. Plan views showing the location of those piezometers and monitoring wells can be found in Appendix C along with plots of the historical static water levels for each location.

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A review of the LRCP static water elevation plot indicates that two of the piezometers (SP-84-1 and SP-84-6) located along the crest of the dam historically exhibit consistent water elevations. Further review of the static water elevation plot indicates that the static water levels for the other piezometers and monitoring wells generally fluctuate as a result of the fluctuations in the pool and the river elevations.

4.2.3 IMPOUNDMENT CHARACTERISTICS (257.83(b)(2)(iii, iv, v))

Below 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 2 Summary of Relevant Storage Information LRCP

IMPOUNDMENT CHARACTERISTICS	
Landfill Runoff Collection Pond	
Approximate Minimum depth (Elevation) of impounded water since last annual inspection	12 ft. (487) ft.
Approximate Maximum depth (Elevation) of impounded water since last annual inspection	12 ft. (487) ft.
Approximate Present depth (Elevation) of impounded water since last annual inspection	12 ft. (488) ft.
Approximate Minimum depth (Elevation) of CCR since last annual inspection	45 ft. (475) ft.
Approximate Maximum depth (Elevation) of CCR since last annual inspection (ft.)	45 ft. (475) ft.
Approximate Present depth (Elevation) of CCR since last annual inspection	45 ft. (475) ft.
Storage Capacity of impounding structure at the time of the inspection	930,000 c.y.
Approximate volume of impounded water at the time of the inspection	553,000 c.y.
Approximate volume of CCR at the time of the inspection	3,150,000 c.y.

4.2.4 VISUAL INSPECTION (257.83(B)(2)(I))

A visual inspection of the Landfill Runoff Collection Pond was conducted to identify any signs of distress or malfunction of the impoundment and appurtenant structures. The inspection also included hydraulic structures underlying the base of the dike. Specific items inspected included all structural elements of the dam such as inboard and outboard slopes, crest, and toe; as well as appurtenances such as the outlet structure at the Landfill Runoff Collection Pond, and pipe discharge structure.

– See Appendix B for Photographs and photographs location plan

Overall, the exterior slope is well vegetated and in stable condition. There were no signs of new sloughing, depressions or areas of wetness and no seeps were apparent. Control of surface vegetation was considered satisfactory. The spillway outlet and discharge channel appear to have no obstructions or increased vegetation growth, however, flow was minimal at the time of the inspection.

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1. Photographs Nos. 1, 2 and 3 show the generally good condition of the crest of the dam. Signs of misalignment and settlement were not observed. Minor surface cracks in the pavement were observed. Those cracks are attributed to the age of the pavement and the effects from weathering.
2. Photographs Nos. 4, 5 and 6 provide overviews of the interior slope of the dam above the operating pool. Vegetation control is lacking, however, erosion due to wave action was not observed. Overall the slope was found to be in good and stable condition.
3. Photographs No's. 7 through 11 are all overviews of various areas of the exterior face of the dam as further described with each photograph. Throughout, vegetation control is acceptable. No visible change was observed from previous inspections. In general, the exterior slope appeared to be in good and stable condition.
4. Photograph No.12 is an overview of the principal spillway decant structure. Vegetation control was observed to be good. The decant structure appeared to be functioning properly and was free of obstructions. Photograph No.13 Recently Added Pipe to allow for treatment of discharged water.
5. Photographs Nos. 14 and 15 are overviews of the principal spillway outlet channel. The channel is not unobstructed with minimal flow at the time of the inspection.
6. Photograph No.16 shows the previously observed sloughing/slip near the left abutment. Permit for fix was submitted to IDNR for Approval.

Overall the facility is in good condition. The impoundment is functioning as intended with no signs of potential structural weakness or conditions which are disrupting to the safe operation of the impoundment.

4.2.5 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 Landfill Runoff Collection Pond since the last annual inspection that would affect the stability or operation of the impounding structure.

5.0 SUMMARY OF FINDINGS

5.1 MAINTENANCE ITEMS

The following maintenance items were identified during the visual inspection:

West Boiler Slag Pond

- As shown in photograph No. 3 shows an area of significant erosion on the interior slope. Even though the erosion is in an incised area of the pond and do not pose a stability issue to the pond, it is recommended that the should be filled in and regraded.
- The downstream slope of the WBSP, adjacent to the outfall located at the Ohio River below the intermediate bench covered with trees (See photos #19 through 21). The trees logs and other debris should be removed from the outfall access area.
- An evaluation of the use of the remotely controlled mower, purchased by the plant indicates that the anchors in the tracks are apparently disturbing the inboard slopes at areas (photo #4) where soil is more granular (bottom ash). Weed waking or other mowing techniques is recommended for these areas.
- Vegetation height was moderate at local areas on the inboard slopes of the WBSP (photo #10). These areas should be weed waked to prevent damage to the existing riprap in these areas.

Landfill Runoff Collection Pond

- Vegetation height was moderate to high on the inboard slopes of the LRCP and should be mowed regularly.
- Fix design of the previously observed sloughing/slip near the left abutment should be implemented once the IDNR construction permit is granted.

5.2 ITEMS TO MONITOR

West Boiler Slag Pond

- There are no items to monitor.

Landfill Runoff Collection Pond

- There are no items to monitor.

5.3 DEFICIENCIES (257.83(b)(2)(vi))

There were no deficiencies or 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 any of the periodic 7-day or 30-day inspections. If any of these conditions occur before the next annual inspection contact AEP Geotechnical Engineering immediately.

If you have any questions with regard to this report, please contact Mohammad Ajlouni at 614-716-2939 (Audinet: 200-2939) or Gary Zych at 614-716-2917 (Audinet: 200-2917).

Annual Dam and Dike Inspection Report (2016)
Clifty Creek Station

FIGURES

Annual Dam and Dike Inspection Report (2016)
Clifty Creek Station

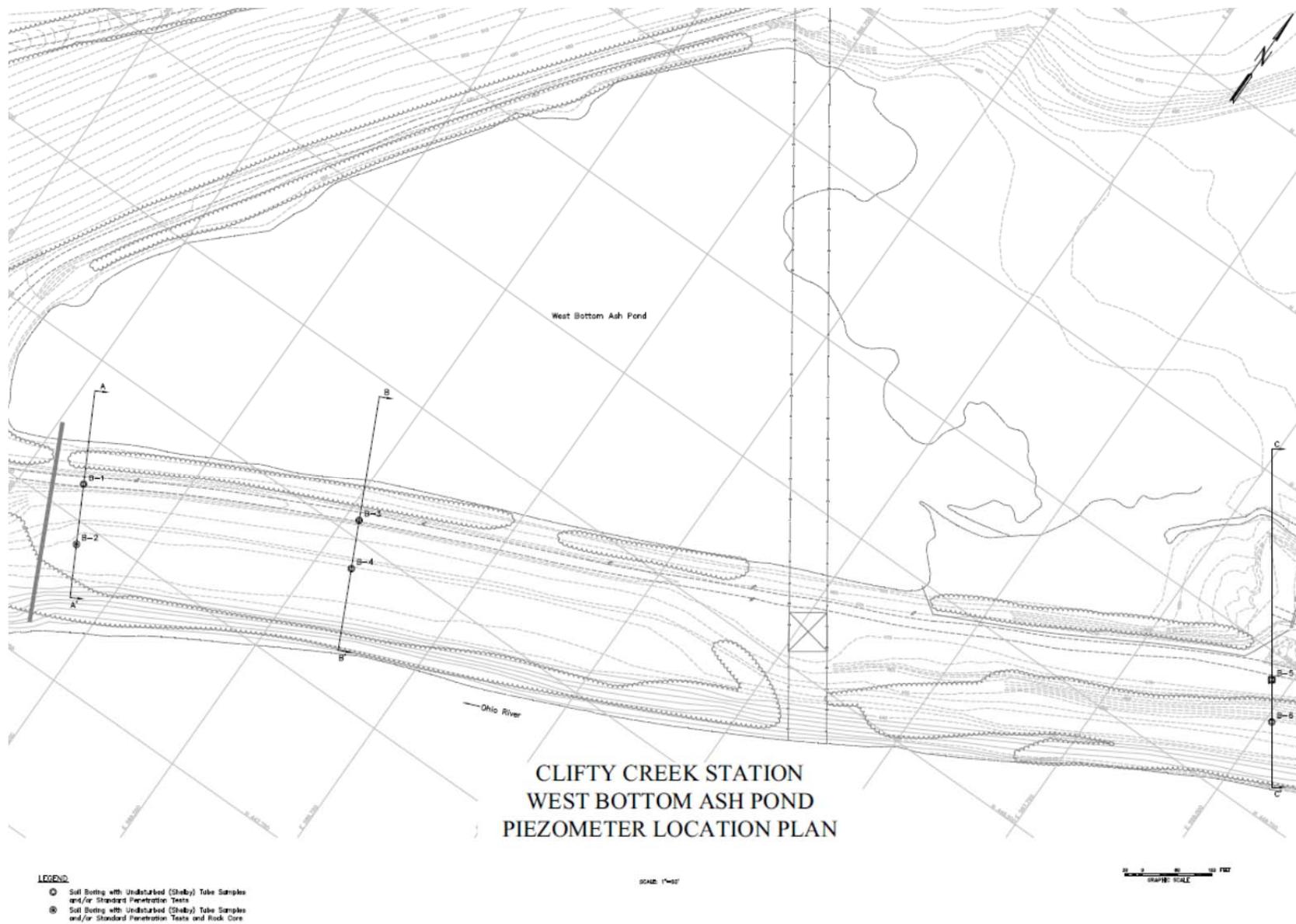


FIGURE 1. WEST BOILER SLAG POND INSTRUMENTS LOCATION PLAN

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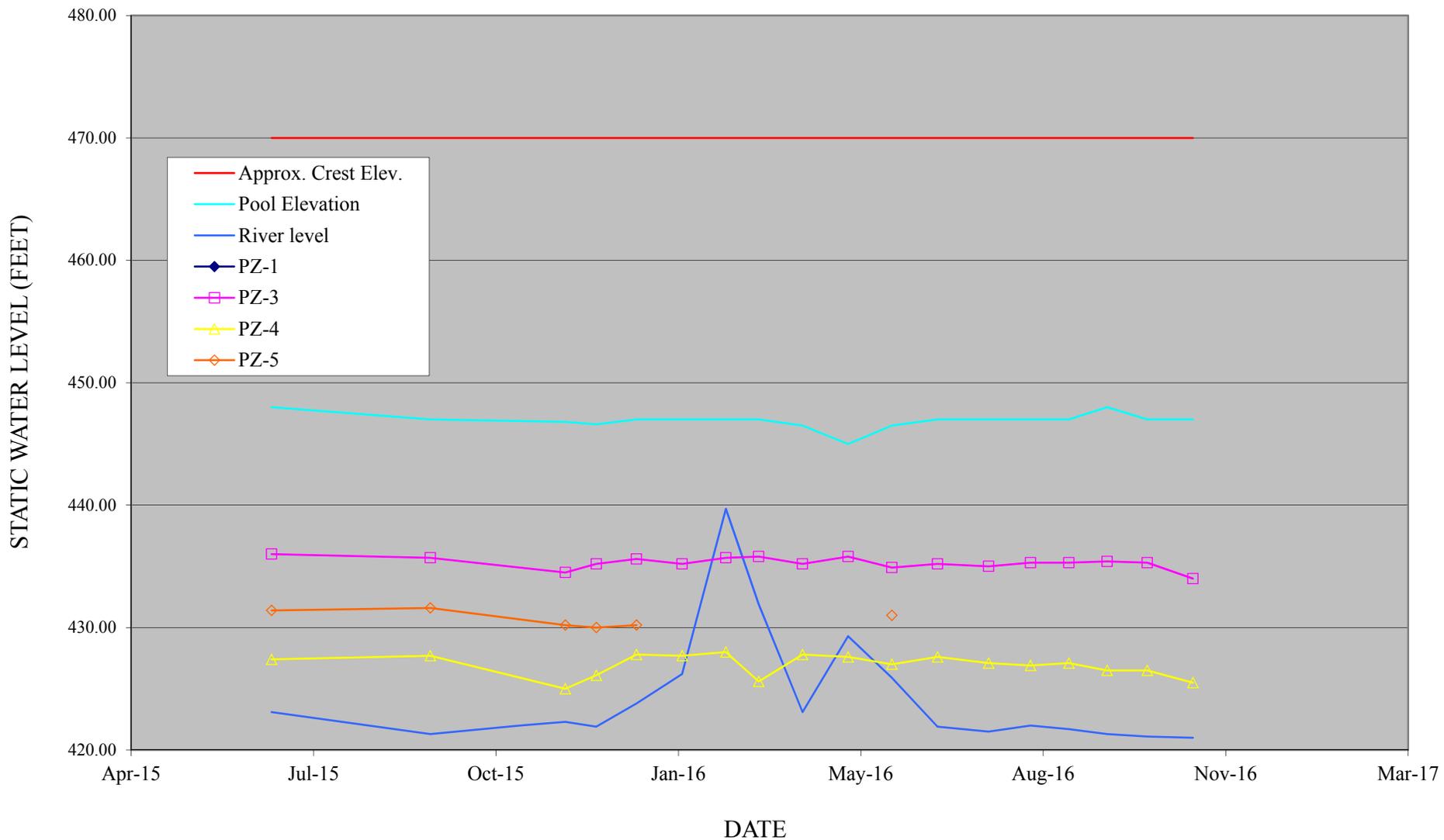


FIGURE 2. WEST BOILER SLAG POND GROUNDWATER LEVEL MEASUREMENTS

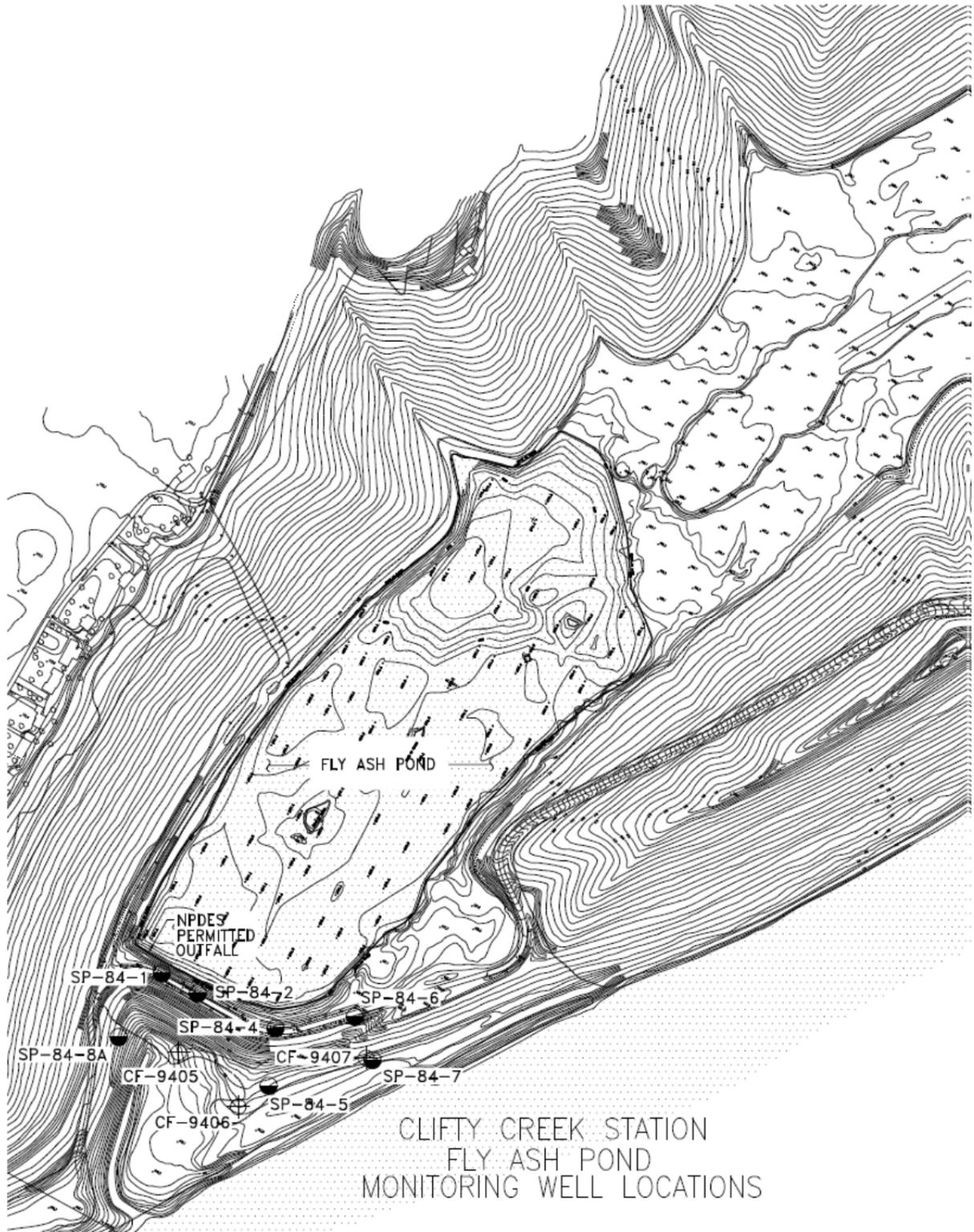


FIGURE 3. LANDFILL RUNOFF COLLECTION POND INSTRUMENTS LOCATION PLAN

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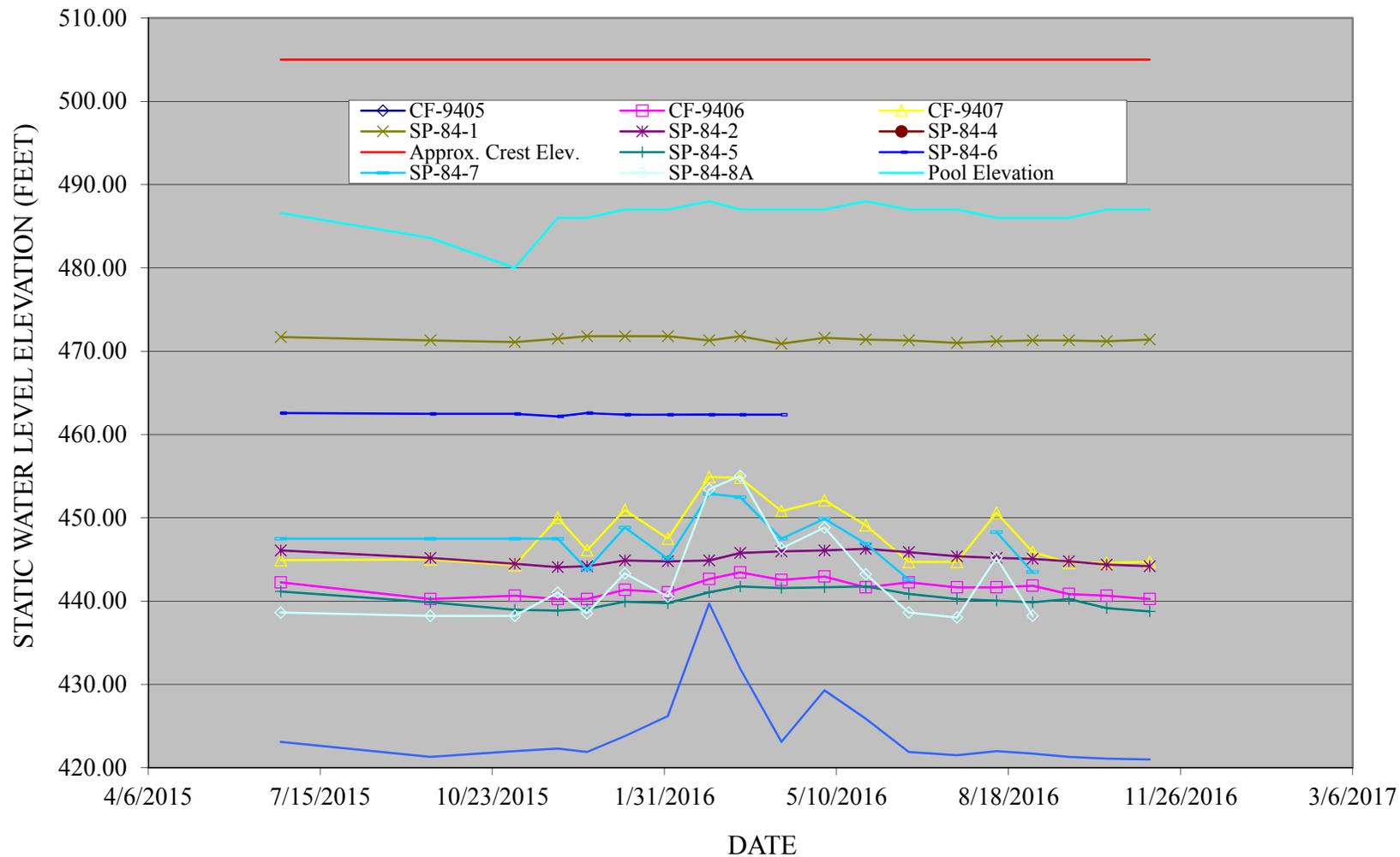


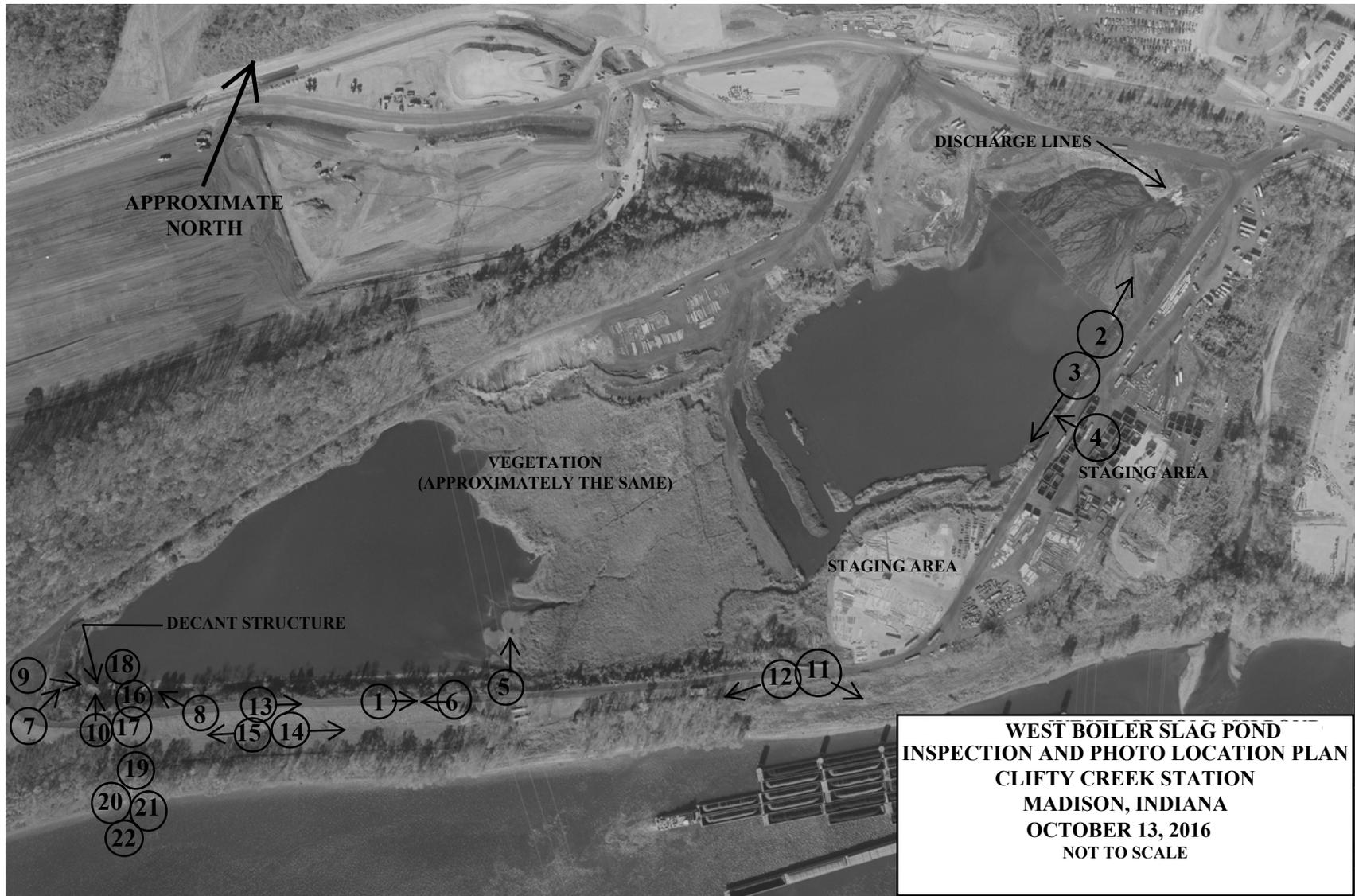
FIGURE 4. LANDFILL RUNOFF COLLECTION POND GROUNDWATER LEVEL MEASUREMENTS

Annual Dam and Dike Inspection Report (2016)
Clifty Creek Station

APPENDICIES

APPENDIX A

**WEST BOILER SLAG POND
DIKE INSPECTION PHOTOGRAPHS**



**APPENDIX A
CLIFTY CREEK WEST BOTTOM ASH POND
DIKE INSPECTION PHOTOGRAPHS**



Photo No. 1

West Bottom Ash Pond Dike
From Crest Looking Northeast

Overview of Crest



Photo No. 2

West Bottom Ash Pond Dike –
Interior Slope at North End
Looking Toward Discharge Lines



Photo No. 3

West Bottom Ash Pond Dike –
Interior Slope at North End
Looking South

Significant Erosion Caused By
Stormwater Runoff From
Roadway backfilled with concrete
debris

**APPENDIX A
CLIFTY CREEK WEST BOILER SLAG POND
DIKE INSPECTION PHOTOGRAPHS**



Photo No. 4

West Boiler Slag Pond – Near South End of Interior Slope

Area where some surface disturbance caused by the remotely controlled mower



Photo No. 5

West Boiler Slag Pond Interior Adjacent To Transmission Tower Looking North Across Pond

General Overview of Vegetation Propagation



Photo No. 6

West Boiler Slag Pond Dike – Interior Slope From Near Transmission Tower Looking Southwest From Crest

**APPENDIX A
CLIFTY CREEK WEST BOTTOM ASH POND
DIKE INSPECTION PHOTOGRAPHS**



Photo No. 7

West Bottom Ash Pond Dike –
Interior Slope Looking Northeast
From Crest.

Overview of General Condition



Photo No. 8

West Bottom Ash Pond Dike –
Interior Slope Looking West From
toe of slope

Overview of General Condition



Photo No. 9

West Bottom Ash Pond Dike –
Interior Slope Looking Northeast
From Crest

Overview of General Condition

**APPENDIX A
CLIFTY CREEK WEST BOTTOM ASH POND
DIKE INSPECTION PHOTOGRAPHS**



Photo No. 10

West Bottom Ash Pond Dike –
Interior Slope Looking Northwest
From Crest

Overview of General Condition
Local Vegetation growth



Photo No. 11

West Bottom Ash Pond Dike –
Exterior Slope From Crest
Looking East

Overview of Excessive Vegetation



Photo No. 12

West Bottom Ash Pond Dike –
Exterior Slope From Crest
Looking Southwest

Overview of Excessive Vegetation

**APPENDIX A
CLIFTY CREEK WEST BOTTOM ASH POND
DIKE INSPECTION PHOTOGRAPHS**



Photo No. 13

West Bottom Ash Pond Dike –
Crest From Top Looking
Northeast

General Condition



Photo No. 14

West Bottom Ash Pond Dike –
Exterior Slope From Toe Looking
East

Overview of Vegetation and
General Condition



Photo No. 15

West Bottom Ash Pond Dike
Exterior Slope From Toe Looking
Southwest

Overview of Vegetation and
General Condition

**APPENDIX A
CLIFTY CREEK WEST BOTTOM ASH POND
DIKE INSPECTION PHOTOGRAPHS**



Photo No. 16

West Bottom Ash Pond Principal Spillway Access Stairs and Decant Structure

Overview of General Condition



Photo No. 17

West Bottom Ash Pond Principal Spillway Access Stairs and Decant Structure

Spare stop logs stacked next to the overflow structure.



Photo No.18

West Bottom Ash Pond Principal Spillway Access Stairs and Decant Structure

Interior of the overflow discharge structure

**APPENDIX A
CLIFTY CREEK WEST BOTTOM ASH POND
DIKE INSPECTION PHOTOGRAPHS**



Photo No. 19

West Bottom Ash Pond Principal Spillway Pipe Upstream of the Outlet Channel.

Significant wood debris carried by the river during flooding events



Photo No. 20

West Bottom Ash Pond Principal Spillway Pipe Discharge

General Condition of End of Pipe and Outlet Channel

Significant wood debris carried by the river during flooding events



Photo No. 21

West Bottom Ash Pond Principal Spillway Pipe Discharge

General Condition of End of Pipe and Outlet Channel – Looking Toward River

Significant wood debris carried by the river during flooding events

**APPENDIX A
CLIFTY CREEK WEST BOTTOM ASH POND
DIKE INSPECTION PHOTOGRAPHS**



Photo No. 22

West Bottom Ash Pond Principal
Spillway Outlet Channel at
Confluence with Ohio River

Current Condition of Non-
Vegetated Slopes – No Significant
Change Since Last Inspection

APPENDIX B

**LANDFILL RUNOFF COLLECTION POND
INSPECTION PHOTOGRAPHS**

**Landfill Runoff Collection Pond
INSPECTION AND PHOTO LOCATION PLAN
CLIFTY CREEK STATION
MADISON, INDIANA
OCTOBER 13, 2016
NOT TO SCALE**

↑
**APPROXIMATE
NORTH**



OHIO RIVER

**APPENDIX B
CLIFTY CREEK FLY ASH POND
DAM INSPECTION PHOTOGRAPHS**



Photo No. 1

Fly Ash Pond Dam From Crest
Looking Northeast Across
Saddle Dam

General Overview



Photo No. 2

Fly Ash Pond Dam From Crest
Looking Southwest

General Overview



Photo No. 3

Fly Ash Pond Dam From Crest
Looking East

General Overview

**APPENDIX B
CLIFTY CREEK FLY ASH POND
DAM INSPECTION PHOTOGRAPHS**



Photo No. 4

Fly Ash Pond Dam From Crest
Looking North

Overview of Current Operating
Pool and Vegetation Conditions
on Interior Slope Adjacent to
Saddle Dam



Photo No. 5

Fly Ash Pond Dam From Up
Stream Slope

Overview of Current Operating
Pool and Vegetation Conditions
on Interior Slope.

Significant vegetation Growth
along the Upstream of Dam



Photo No. 6

Fly Ash Pond Dam From Up
Stream Slope

Overview of Vegetation and
General Conditions

**APPENDIX B
CLIFTY CREEK FLY ASH POND
DAM INSPECTION PHOTOGRAPHS**

	<p>Photo No. 7</p> <p>Fly Ash Pond Dam From Roadway Leading to Crest Looking Northeast</p> <p>Overview of Vegetation Management and General Condition</p>
	<p>Photo No. 8</p> <p>Fly Ash Pond Dam From Toe Slope Looking Southwest</p> <p>Overview of Vegetation and General Conditions</p>
	<p>Photo No. 9</p> <p>Fly Ash Pond Dam Adjacent To Toe of Slope Looking East</p> <p>Overview of Vegetation and General Conditions</p>

**APPENDIX B
CLIFTY CREEK FLY ASH POND
DAM INSPECTION PHOTOGRAPHS**



Photo No. 10

Fly Ash Pond Dam Adjacent To
Toe of Slope Looking Southwest

Overview of Vegetation and
General Conditions



Photo No. 11

Fly Ash Pond Dam From Top of
Slope In Right Groin Looking
East

Overview of Vegetation and
General Conditions



Photo No. 12

Fly Ash Pond Principal Spillway
Structure

General Overview

**APPENDIX B
CLIFTY CREEK FLY ASH POND
DAM INSPECTION PHOTOGRAPHS**

	<p>Photo No. 13</p> <p>Fly Ash Pond Principal Spillway Structure</p> <p>Recently Added Pipe To allow for treatment of discharged water.</p>
	<p>Photo No. 14</p> <p>Fly Ash Pond Principal Spillway Outlet</p> <p>General Overview –Backwater has been minimized since last inspection.</p>
	<p>Photo No. 15</p> <p>Fly Ash Pond Principal Spillway Outlet Channel Looking Downstream</p> <p>General Overview</p>

**APPENDIX B
CLIFTY CREEK FLY ASH POND
DAM INSPECTION PHOTOGRAPHS**



Photo No. 16

Fly Ash Pond Dam From
Bottom of Saddle Dam/Rock
Ridge Interface

Localized Sloughing and Slips
(Permit for fix is submitted to
IDNR for Approval)