Annual Inspection Report for Coal Combustion Residuals Surface Impoundments

City Water, Light & Power
Ash Impoundments
Springfield, Sangamon County, Illinois

January 2025

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APPENDICES

1. INTRODUCTION

City Water, Light and Power (CWLP) ash and lime ponds are coal combustion residuals (CCR) surface impoundments. An annual inspection was conducted as required by 40 CFR Part 257.83. This inspection included three items:

257.83(b)(1)(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., CCR unit design and construction information required by §§ 257.73(c)(1) and 257.74(c)(1), previous periodic structural stability assessments required under §§ 257.73(d) and 257.74(d), the results of inspections by a qualified person, and results of previous annual inspections);*

257.83(b)(1)(ii) *A visual inspection of the CCR unit to identify signs of distress or malfunction of the CCR unit and appurtenant structures; and*

257.83(b)(1)(iii) *A visual inspection of any hydraulic structures underlying the base of the CCR unit for structural integrity and continued safe and reliable operation.*

The following documents were reviewed:

- Weekly and monthly inspection results (October 2015 – December 2024)
- Historical Aerial Photographs and Contour Maps (April 1995 – April 2024)
- Construction grading plan for the Dallman Ash Pond (August 1976)
- (Lakeside) Ash Pond Embankment Modification Drawings (August 1987)

The visual inspections was performed on December 19, 2024 and January 21, 2025. This report includes the results of the annual inspection (see Appendix B), as well as all information required under 40 CFR Part 257.84(b)(2).

2. BACKGROUND

CWLP operates a series of ash and lime ponds east of the power plant complex in Springfield, Illinois. The ponds are operated under National Pollutant Discharge Elimination System (NPDES) Permit Number IL0024767.

The approximately 35.0 acre Lakeside Ash Pond (LAP) is primarily a diked embankment with some incising along the east perimeter and was placed into service prior to 1958. It was separated into four lime ponds, and a forty foot wide channel at the west border, that received sluiced Lakeside Ash. LAP ceased receiving ash in 2009. Until September 2023, two of lime ponds were active and two inactive. The channel at the west border, received Lakeside Ash until 2009 and from November 2022 until April 2023 it received sludge blowdown from the Generating Facilities Wastewater Treatment Plant. As of September 2023, LAP ceased receiving all flows and materials.

The second impoundment, the Dallman Ash Pond (DAP), which is a diked embankment, was

placed into service in approximately 1976 and is approximately 34.5 acres. Fly ash and bottom ash were sluiced to the Dallman Ash Pond with raw lake water. With the closure of the Dallman Generating Units 31, 32, and 33, the pond no longer receives ash.

Storm runoff collected by both the DAP and LAP flow into opposite sides of a Clarification Pond before being discharged to Sugar Creek at Outfall 004.

3. GEOMETRY OF THE STRUCTURES

The most recent change made to the CCR surface impoundment was a vertical expansion to the Lakeside Ash Pond system in 1988. The vertical expansion consists of berms built on top and inside of the existing embankments in such a way that the toe of the outer slope of the expansion berms match up with the top of the inner slope of the existing embankments. The vertical expansion berms are approximately ten feet in height.

A site map drawing containing an aerial photograph and approximate boundaries for all of the CWLP CCR Units, including the ash and lime ponds, is provided in Appendix A.

This report documents the annual inspection required under 40 CFR 257.83(b)(4)(ii). There are no apparent structural movements or deformations, nor is there any apparent reduction of the structural integrity of the facility.

4. INSTRUMENTATION

In May of 2024, four piezometers were installed in both CCR Units. Monthly potentiometric readings are recorded for the groundwater at each piezometer.

5. POND DEPTHS AND ELEVATIONS

On January 21, 2025, Lakeside Ash Pond and Lime Ponds had a measured water surface elevation of 556.30 feet. The Lakeside Ash Pond and Lime Ponds have typical depths ranging from 0-30 feet.

On January 21, 2025, the Dallman Ash Pond had a measured water surface elevation of 550.73 feet. The Dallman Ash Pond has typical depths ranging from 0 – 20 feet.

6. STORAGE CAPACITIES

The Lakeside Ash Pond and Lime Ponds have a combined approximate storage capacity of 1,330,000 cubic yards. The Dallman Ash Pond has an approximate storage capacity of 1,500,000 cubic yards.

7. VOLUMES

The Lakeside Ash Pond and Lime Ponds have a combined approximate impounded water volume of 900 cubic yards, and an approximate impounded CCR volume of 1,144,900 cubic yards. The Dallman Ash Pond has an approximate impounded water volume of 1,400 cubic yards, and an approximate impounded CCR volume of 1,175,820 cubic yards.

8. STRUCTURAL CONDITION OF CCR UNITS

Visual inspections of the CCR units are performed on a weekly basis in accordance with 40 CFR 257.83(a)(1)(i) for the purpose of identifying appearances of actual or potential structural weaknesses and other conditions which are disrupting or have the potential to disrupt the operation or safety of the CCR units or appurtenant structures.

In reports from the previous years, it was noted that signs of erosion had been periodically observed on the north and west outer berms of the Dallman Ash Pond in the forms of ruts and gullies that typically range from 6 – 24 inches deep. The erosion appeared to be caused by storm water flow collecting at points along the top of the berm before flowing down the outer slope in concentrated streams. Erosion of similar severity was discussed in the 2011 Site Assessment Final Report, which recommended that the erosion be repaired on an as-needed basis. In the fall of 2017, the tops of the berms of the Dallman Ash Ponds were regarded with a cross slope of approximately 1/4" per foot inward towards the ponds. This has allowed the rain water to be contained in the ponds and to not cause erosion on the slopes.

As previously reported, indications of seepage have been observed on outer berms of the Lakeside Ash Pond and lime ponds, between the top of the original pond berms and the vertical expansion berms. These range from staining or dampness to areas with noticeable drainage. Signs of seepage have been observed along the west berm, as well as isolated portions on the east and west portions of the north berm of the Lakeside Ash Pond. This seepage is discussed in the 2011 Site Assessment Final Report. During the fall of 2017, two 8" diameter perforated dual wall HDPE drain pipes were installed underneath the toe of the slope of the vertical extension. The water from these drain tiles outlets into the Clarification Pond. In July and August of 2019, lime removal was executed in the cannel on the west side of the Lakeside Ash Pond. Shortly after, the seepage was again visible at the vertical expansion joint. After a few weeks, the berm self-sealed. Only once during 2020 was seepage observed at the vertical expansion joint. In 2021, seepage was visible for a few weeks when the west lime pond was put into service. In the Summer of 2022 and again in the Winter of 2023, the north berm of the Lakeside Ash Pond was cleared of all brush and woody plants; multiple animal dens were filled and compacted. A couple of those were required to be refilled and recompacted. Two animal dens were also filled and compacted along this berm in January 2024. In 2024, similar minor events involving animal dens and seepage occurred. The dens were destroyed and filled and the seepage was directed to the Clarification Pond. The seepage only occurred after heavy spring rains.

No other visual indications of actual or potential structural weaknesses and other conditions that are disrupting or have the potential to disrupt the operation or safety of the CCR unit or appurtenant structures have been observed for the CCR units during any of the weekly inspections over the past year. Based on the review of historical aerial photographs, there were no observed indications of mass movement on any of the constructed berms for either unit.

9. OTHER CHANGES

In July of 2021, CWLP suspended the operation of Dallman Unit 33 and started the process of permanent plant retirement. CWLP no longer sluices fly ash and bottom ash to the Dallman Ash Pond.

In May of 2022, the discharge for the sump that collects surface water from the flood plain between the Lakeside Ash Pond and the Sugar Creek was diverted from the Dallman Ash Pond to report directly to the Clarification Pond.

In August of 2022, the leachate piping from Landfill #2 was diverted to from the Dallman Ash Pond to report directly to the Clarification Pond.

In November of 2022, the Generating Facilities Wastewater Treatment Plant clarifier blowdown was diverted from the Dallman Ash Pond to report directly to the southwest corner of the Lakeside Ash Pond.

In April of 2023, the Generating Facilities Wastewater Treatment Plant clarifier blowdown was diverted from the southwest corner of the Lakeside Ash Pond to the Water Purification Plant Sludge Tank, which flows to the new Lime Ponds.

In September of 2023, the lime sludge from the Water Purification Plant was rerouted to a new facility. At that time, the Lakeside Ash Pond ceased receiving all waste streams and materials.

In July of 2024, a dual run of 24-inch diameter pipe was installed, next to the existing run, to help drain the Dallman Ash Pond into the Clarification Pond. In October of 2024, a dual run of 24-inch diameter pipe was installed in the haul road in the middle of the Dallman Ash Pond. Both runs were installed to accommodate a 1,000 year storm.

10. STATEMENT

This annual inspection of the CWLP CCR surface impoundments was completed in accordance with the requirements under 40 CFR Part 257.83.

William E. Antonacci

William E. Antonacci, P.E.

1-22-25

Date

WILLIAM E. ANTONACCI
062-057915
LICENSED
PROFESSIONAL
ENGINEER
STATE OF ILLINOIS

APPENDIX A

Site Map

J:\S\Springfield CWLP\CWLP\dwg\PONDS.dwg Tab: FIG 2 Last Saved: January 13, 2016, by Mike Nguyen Plotted: Wednesday, January 13, 2016 9:25:34 AM

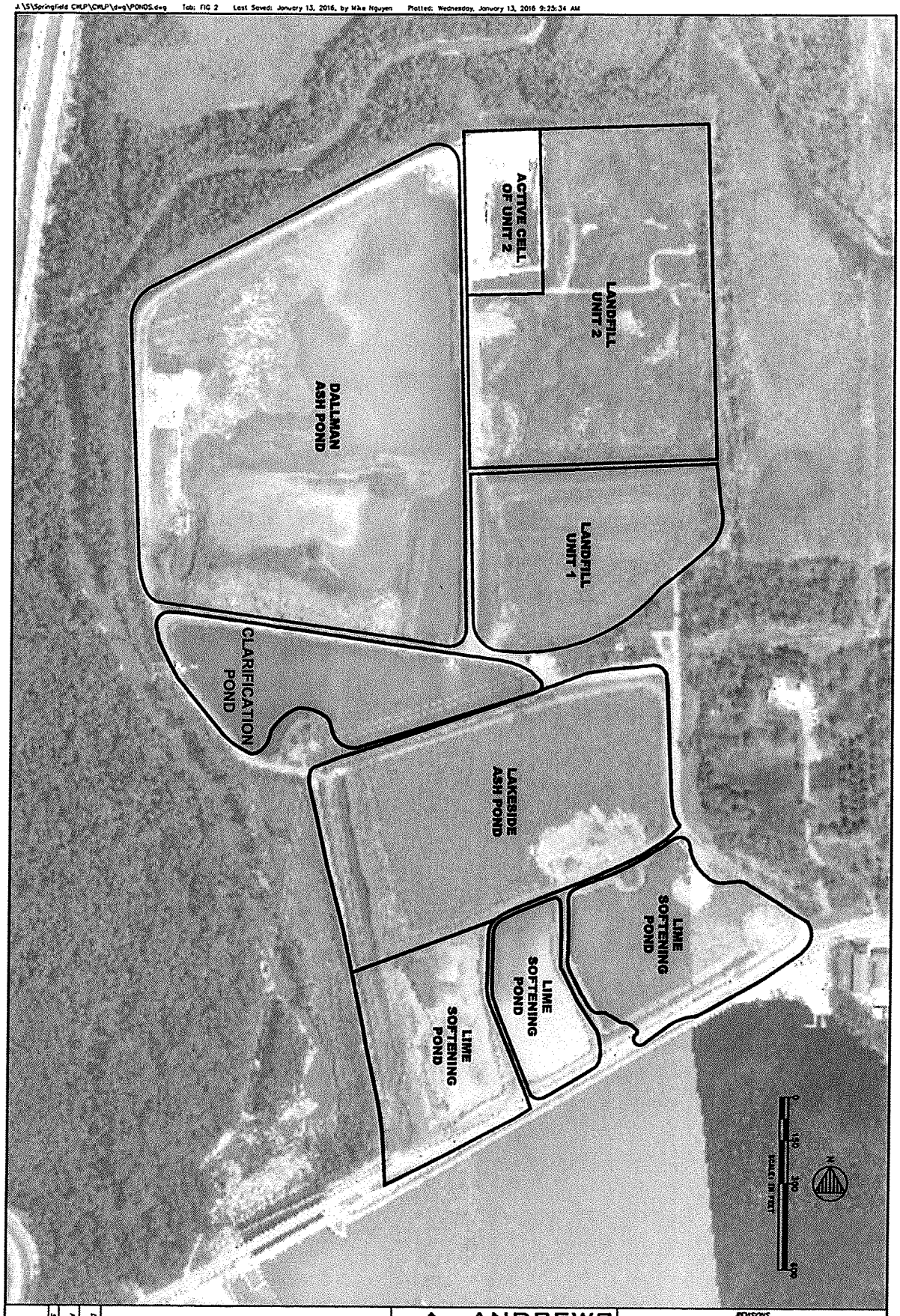

FIG. 1

CWLP COAL RESIDUAL COMBUSTION UNITS

PLANS PREPARED FOR

CITY, WATER, LIGHT & POWER

SPRINGFIELD, SANGAMON COUNTY, ILLINOIS

DATE: JANUARY 2016

PROJECT ID: 150077.0011

SHEET NUMBER:

ANDREWS ENGINEERING, INC.
3300 GINGER CREEK DRIVE
SPRINGFIELD, ILLINOIS 62711-7233
PH (217) 787-2334 FAX (217) 787-9495
PONTIAC, IL • LOMBARD, IL • INDIANAPOLIS, IN • WARRENTON, MO
PROFESSIONAL DESIGN ENGINEERING AND LAND SURVEYING FIRM #184.001541

APPROVED BY: PMV | DESIGNED BY: PMV | DRAWN BY: MPN

REVISIONS			
NO.	DATE	DESCRIPTION	BY

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APPENDIX B

Annual Inspection Report

City Water, Light, and Power
Coal Combustion Residual Units

35 IAC 845 Annual Inspection Form

Date December 19, 2024 Time 9:00 AM

Inspector(s) / Position: BILL ANTONACCI

Site Conditions:

Sky: CLOUDY Ground Moisture: SATURATED Temperature: 32°F Precipitation: TRACE

Berms – Landfill Unit 2:

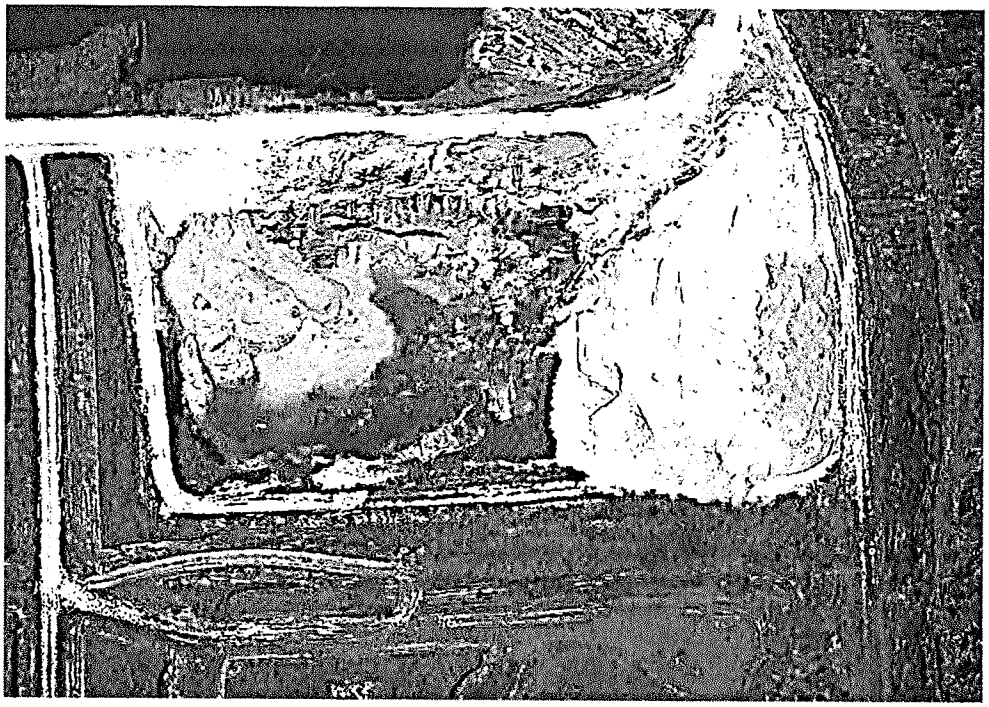
Conditions Limiting Visibility:

- ☐ Snow Cover
- ☒ Vegetation
- ☐ Other _____
- ☐ None

Observations:

- ☐ Erosion / Gullies
- ☐ Cracking / Sloughing
- ☐ Seeps / Damp Areas
- ☐ Signs of Creep
- ☐ Failed/eroded vegetation >100sq ft.
- ☐ Sudden drop in impoundment level
- ☐ Actual or potential structural weakness
- ☐ Improper operation of overtopping control
- ☐ Visible release
- ☒ No observed problems

Describe findings. Identify locations on attached map. Attach additional pages if necessary.



City Water, Light, and Power
Coal Combustion Residual Units

35 IAC 845 Annual Inspection Form

Berms – Dallman Ash Pond

Conditions Limiting Visibility:

- ☐ Snow Cover
- ☒ Vegetation
- ☐ Other _____
- ☐ None

Observations:

- ☐ Erosion / Gullies
- ☐ Cracking / Sloughing
- ☐ Seeps / Damp Areas
- ☐ Signs of Creep
- ☐ Failed/eroded vegetation >100sq ft.
- ☐ Sudden drop in impoundment level
- ☐ Actual or potential structural weakness
- ☐ Improper operation of overtopping control
- ☐ Visible release
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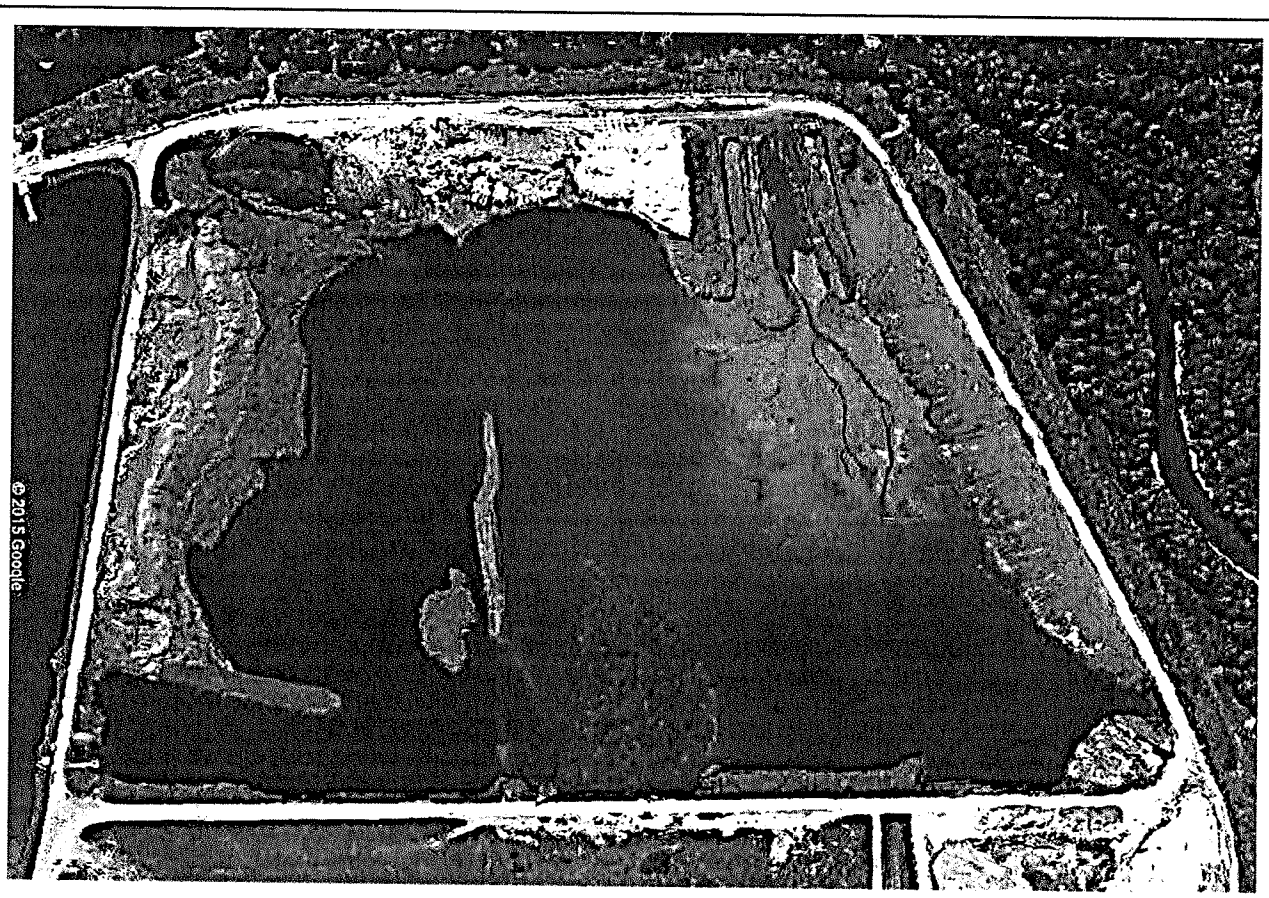
Describe findings. Identify locations on attached map. Attach additional pages if necessary.



City Water, Light, and Power
Coal Combustion Residual Units

35 IAC 845 Annual Inspection Form

Berms – Lakeside Ash Pond

Conditions Limiting Visibility:

- ☐ Snow Cover
- ☒ Vegetation
- ☐ Other _____
- ☐ None

Observations:

- ☐ Erosion / Gullies
- ☐ Cracking / Sloughing
- ☐ Seeps / Damp Areas
- ☐ Signs of Creep
- ☐ Failed/eroded vegetation >100sq ft.
- ☐ Sudden drop in impoundment level
- ☐ Actual or potential structural weakness
- ☐ Improper operation of overtopping control
- ☐ Visible release
- ☒ No observed problems

Describe findings. Identify locations on attached map. Attach additional pages if necessary.

City Water, Light, and Power
Coal Combustion Residual Units

35 IAC 845 Annual Inspection Form

Berms – Lime Softening Ponds

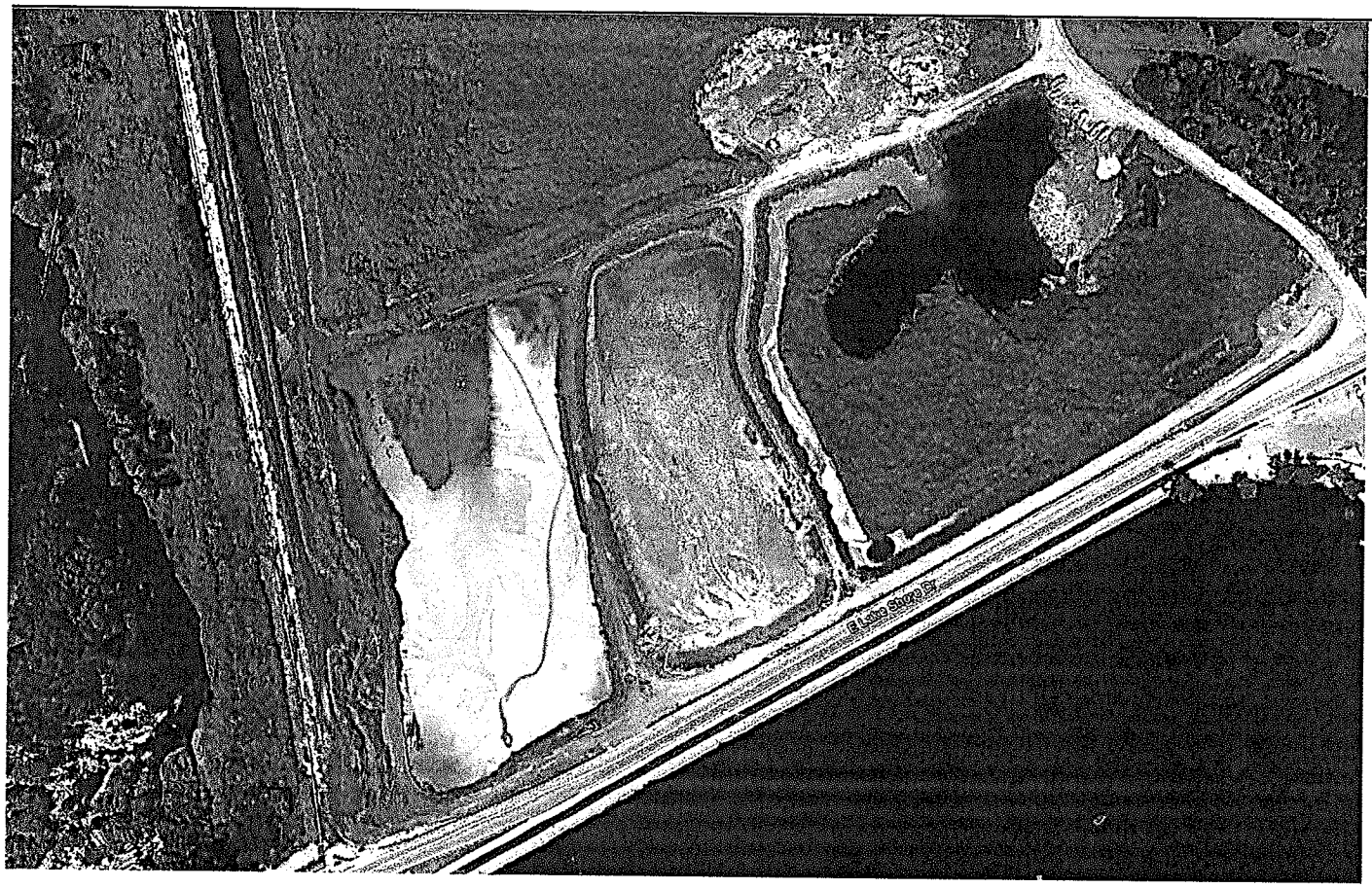
Conditions Limiting Visibility:

- ☐ Snow Cover
- ☒ Vegetation
- ☐ Other _____
- ☐ None

Observations:

- ☐ Erosion / Gullies
- ☐ Cracking / Sloughing
- ☐ Seeps / Damp Areas
- ☐ Signs of Creep
- ☐ Failed/eroded vegetation >100sq ft.
- ☐ Sudden drop in impoundment level
- ☐ Actual or potential structural weakness
- ☐ Improper operation of overtopping control
- ☐ Visible release
- ☒ No observed problems

Describe findings. Identify locations on attached map. Attach additional pages if necessary.



City Water, Light, and Power
Coal Combustion Residual Units

35 IAC 845 Annual Inspection Form

Areas of Previous Repair(s):

Location: LAKESIDE ASH POND - NORTH BERM FAR EAST SIDE

Description of Repair: Seepage occurs after spring rains. The seepage is contained in a ditch at the toe of the berm. The water then reports to the Clarification Pond. There were five or six rain events that caused seepage.

Effectiveness of Repair:

- ☐ Problem completely remedied
- ☒ Problem partially remedied (explain below):
- ☐ Problem not remedied (explain below):

The water is contained. Due to the minimal quantity the seepage has not worsened in 8 years. With Lakeside Ash Pond no longer receiving flows from the plant, the seepage flows have greatly decreased

- ☐ Progression of trouble into new area (explain):

Areas of Previous Repair(s):

Location: LAKESIDE ASH POND - NORTH BERM WEST HALF

Description of Repair: Animal dens are completely filled with clay and compacted. There were approximately five instances/ locations.

Effectiveness of Repair:

- ☒ Problem completely remedied
- ☐ Problem partially remedied (explain below):
- ☐ Problem not remedied (explain below):

- ☐ Progression of trouble into new area (explain):

City Water, Light, and Power
Coal Combustion Residual Units

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Additional Notes: