



Dynegy Midwest Generation, LLC  
1500 Eastport Plaza Dr.  
Collinsville, IL 62234

January 30, 2024

Illinois Environmental Protection Agency  
1021 North Grand Avenue East  
P.O. Box 19276  
Springfield, IL 62794-9276

**Re: Hennepin Ash Pond No. 2 and No. 4 (IEPA ID: W1550100002-04, 07) 2023 Annual Consolidated Report**

Dear Mr. LeCrone:

In accordance with 35 IAC § 845.550, Dynegy Midwest Generation, LLC (DMG) is submitting the annual consolidated report for the Hennepin Ash Pond No. 2 and No. 4 (IEPA ID: W1550100002-04, 07), as enclosed.

Sincerely,

A handwritten signature in blue ink that reads "Dianna Tickner".

Dianna Tickner  
Sr. Director Decommissioning & Demolition

Enclosures

Annual Consolidated Report  
Dynergy Midwest Generation, LLC  
Hennepin Power Plant  
Ash Pond No. 2 and No. 4; IEPA ID **W1550100002-04, 07**

In accordance with 35 IAC § 845.550, Dynergy Midwest Generation, LLC (DMG) has prepared the annual consolidated report. The report is provided in two sections as follows:

Section 1

1) Annual CCR fugitive dust control report (Section 845.500(c))

Section 2

2) Annual inspection report (Section 845.540(b)), including:

- A) Annual hazard potential classification certification
- B) Annual structural stability assessment certification
- C) Annual safety factor assessment certification
- D) Inflow design flood control system plan certification

Section 3

3) Annual Groundwater Monitoring and Corrective Action Report (Section 845.610(e))

Section 1

Annual CCR Fugitive Dust Control Report

# **Annual CCR Fugitive Dust Control Report**

**for**

## **Hennepin Power Plant**

*Prepared for:*



**Luminant**

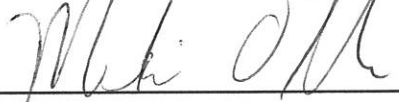
**Dynegy Midwest Generation, LLC**

**Hennepin Power Plant  
13498 East 800<sup>th</sup> Street  
Hennepin, IL 61327**

November 2023

**Hennepin Power Plant  
ANNUAL CCR FUGITIVE DUST CONTROL REPORT**

Reporting Year: 4<sup>th</sup> Quarter 2022 through 3<sup>rd</sup> Quarter 2023

Completed by:  Plant Environmental Supervisor  
Name Title

This Annual CCR Fugitive Dust Control Report has been prepared for the Hennepin Power Plant in accordance with 40 CFR 257.80(c) and 35 I.A.C. 845.500. Section 1 provides a description of the actions taken to control CCR fugitive dust at the facility during the reporting year, including a summary of any corrective measures taken. Section 2 provides a record of citizen complaints received concerning CCR fugitive dust at the facility during the reporting year, including a summary of any corrective measures taken.

**Section 1 Actions Taken to Control CCR Fugitive Dust**

In accordance with the Hennepin Power Plant CCR Fugitive Dust Control Plan (Plan), the following measures were used to control CCR fugitive dust from becoming airborne at the facility during the reporting year:

| CCR Activity                                  | Actions Taken to Control CCR Fugitive Dust  |
|---|---|
| Management of CCR in the facility's CCR units | CCR to be emplaced in the landfill will be conditioned before emplacement.  |
|   | Water dry CCR material from periodic cleanout / maintenance of CCR handling or CCR dust control systems as it is added into the CCR surface impoundments, as necessary. |
|   | Wet management of CCR bottom ash in CCR surface impoundments.   |
|   | Water areas of exposed CCR in CCR units, as necessary.  |
|   | Naturally occurring grass vegetation in areas of exposed CCR in CCR surface impoundments.   |
|   | Apply chemical dust suppressant on areas of exposed CCR in CCR units, as necessary.   |
|   | Wet sluice CCR fly ash and CCR bottom ash to CCR surface impoundments.  |

**Hennepin Power Plant  
ANNUAL CCR FUGITIVE DUST CONTROL REPORT**

| CCR Activity                          | Actions Taken to Control CCR Fugitive Dust   |
|---------------------------------------|--|
| Handling of CCR at the facility       | Pneumatically convey dry CCR fly ash and FGD ash to storage silos in an enclosed system.             |
|                                       | CCR to be emplaced in the landfill will be conditioned before emplacement.                           |
|                                       | Load CCR transport trucks from the CCR fly ash silos in a partially enclosed area.                   |
|                                       | Load CCR transport trucks from the CCR fly ash silos using vented spouts.                            |
|                                       | Load FGD ash transport trucks from the FGD ash silo using a pug mill or vented spouts, as necessary. |
|                                       | Perform housekeeping, as necessary, in the fly ash loading area.                                     |
|                                       | Operate fly ash handling system in accordance with good operating practices.                         |
|                                       | Maintain and repair as necessary dust controls on the fly ash handling system.                       |
| Transportation of CCR at the facility | CCR to be emplaced in the landfill is conditioned before emplacement.                                |
|                                       | Limit the speed of vehicles to no more than 15 mph on facility roads.                                |
|                                       | Sweep or rinse off the outside of the trucks transporting CCR, as necessary.                         |
|                                       | Remove CCR, as necessary, deposited on facility road surfaces during transport.                      |

Based on a review of the Plan and inspections associated with CCR fugitive dust control performed in the reporting year, the control measures identified in the Plan as implemented at the facility effectively minimized CCR from becoming airborne at the facility. No revisions or additions to control measures identified in the Plan were needed in this report. The Hennepin Power Plant ceased to operate and ceased to be a generating unit effective November 1, 2019.

No material changes occurred in the reporting year in site conditions potentially resulting in CCR fugitive dust becoming airborne at the facility that warrant an amendment of the Plan. The plan was amended to reflect administrative changes and adjustments to site condition controls.

**Section 2 Record of Citizen Complaints**

No citizen complaints were received regarding CCR fugitive dust at Hennepin Power Plant in the reporting year.

## **Section 2**

Annual inspection report (Section 845.540(b)), including:

A) Annual hazard potential classification certification, if applicable (Section 845.440)

B) Annual structural stability assessment certification, if applicable (Section 845.450)

C) Annual safety factor assessment certification, if applicable (Section 845.460)

D) Inflow design flood control system plan certification (Section 845.510(c))

**ANNUAL INSPECTION BY A QUALIFIED PROFESSIONAL ENGINEER**

35 IAC § 845.540

(b)(1) The CCR surface impoundment must be inspected on an annual basis by a qualified professional engineer to ensure that the design, construction, operation, and maintenance of the CCR surface impoundment is consistent with recognized and generally accepted engineering standards. The inspection must, at a minimum, include:

- A) A review of available information regarding the status and condition of the CCR surface impoundment, including files available in the operating record (e.g., CCR surface impoundment design and construction information required by Sections 845.220(a)(1) and 845.230(d)(2)(A), previous structural stability assessments required under Section 845.450, the results of inspections by a qualified person, and results of previous annual inspections);
- B) A visual inspection of the CCR surface impoundment to identify signs of distress or malfunction of the CCR surface impoundment and appurtenant structures;
- C) A visual inspection of any hydraulic structures underlying the base of the CCR surface impoundment or passing through the dike of the CCR surface impoundment for structural integrity and continued safe and reliable operation;
- D) The annual hazard potential classification certification, if applicable (see Section 845.440);
- E) The annual structural stability assessment certification, if applicable (see Section 845.450);
- F) The annual safety factor assessment certification, if applicable (see Section 845.460); and
- G) The inflow design flood control system plan certification (see Section 845.510(c)).

**SITE INFORMATION**

|  |  |
|--|--|
| Site Name / Address / Date of Inspection | Hennepin Power Station<br>Putnam County, Illinois 62327<br>10/3/2023   |
| Operator Name / Address                  | Luminant Generation Company LLC<br>6555 Sierra Drive, Irving, TX 75039 |
| CCR unit                                 | Ash Pond 2   |

**INSPECTION REPORT 35 IAC § 845.540**

|   |  |
|---|--|
| (b)(1)(D) The annual hazard potential classification certification, if applicable (see Section 845.440).  | Based on a review of the CCR unit's annual hazard potential classification, the unit is classified as a Class II CCR surface impoundment.  |
| (b)(2)(A) Any changes in geometry of the structure since the previous annual inspection.  | As part of the capping and closure of the West Ash Pond and West Polishing Pond, Ash Pond 2 was regraded to promote positive stormwater drainage. As a result of this regrading Ash Pond 2 will not impound water.   |
| (b)(2)(B) The location and type of existing instrumentation and the maximum recorded readings of each instrument since the previous annual inspection   | See the attached.  |
| b)(2)(C) The approximate minimum, maximum, and present depth and elevation of the impounded water and CCR since the previous annual inspection;   | See the attached.  |
| b)(2)(D) The storage capacity of the impounding structure at the time of the inspection   | Due to regrading, the impoundment will no longer impound any additional water or material.   |
| (b)(2)(E) The approximate volume of the impounded water and CCR contained in the unit at the time of the inspection.  | Approximately 435 acre-feet of capped CCR.   |
| (b)(2)(F) 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 | Based on a review of the CCR unit's records and visual observation during the on-site inspection, there was no appearance of an actual or potential structural weakness of the CCR unit, nor an existing condition that is disrupting or would disrupt the operation and safety of the unit. |



INSPECTION REPORT 35 IAC § 845.540

|   |  |
|---|--|
| (b)(2)(G) Any other changes that may have affected the stability or operation of the impounding structure since the previous annual inspection. | Based on a review of the CCR unit's records and visual observation during the on-site inspection, no other changes which may have affected the stability or operation of the CCR unit have taken place since the previous annual inspection. |
| (b)(1)(G) The inflow design flood control system plan certification (see Section 845.510(c))  | As part of the capping and closure of the West Ash Pond and West Polishing Pond, Ash Pond 2 was regraded to promote positive stormwater drainage. As a result of this regrading Ash Pond 2 will not impound water.                           |

**35 IAC § 845.540 - Annual inspection by a qualified professional engineer.**

I, James Knutelski, P.E., certify under penalty of law that the information submitted in this report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the laws of the state of Illinois. The information submitted, is to the best of my knowledge and belief, true, accurate and complete. Based on the annual inspection, the design, construction, operation, and maintenance of the CCR Unit is consistent with recognized and generally accepted good engineering standards. Based on a review of the records for the CCR unit and a visual inspection of the unit to document no material changes to the unit, the hazard potential classification was conducted in accordance with the requirements of Section 845.440, the structural stability assessment was conducted in accordance with the requirements of Section 845.450, the safety factor assessment was conducted in accordance with the requirements of Section 845.460, and the inflow design flood control system plan assessment was conducted in accordance with the requirements of Section 845.510.



James Knutelski, PE  
Illinois PE No. 062-054206, Expires: 11/30/2025  
Date: 01/07/2024

Site Name: Hennepin Power Station

CCR Unit: Ash Pond 2

| 35 IAC § 845.540 (b)(2)(B) |            |  |
|----------------------------|------------|--|
| Instrument ID #            | Type       | Maximum recorded reading since previous annual inspection (ft) |
| P004                       | Piezometer | 445.42'  |
| P005                       | Piezometer | 445.17'  |

| 35 IAC § 845.540 (b)(2)(C)    |                |         |         |            |         |         |
|-------------------------------|----------------|---------|---------|------------|---------|---------|
| Approximate Depth / Elevation |                |         |         |            |         |         |
| Since previous inspection:    | Elevation (ft) |         |         | Depth (ft) |         |         |
|                               | Minimum        | Present | Maximum | Minimum    | Present | Maximum |
| Impounded Water               |                |         |         |            | 0       |         |
| CCR                           | 494            |         | 497     | 43         |         | 46      |

### **Section 3**

Annual Groundwater Monitoring and Corrective Action Report (Section 845.610(e))

Prepared for  
**Dynegy Midwest Generation, LLC**

Date  
**January 31, 2024**

Project No.  
**1940103649-009**

**2023 35 I.A.C. § 845 ANNUAL  
GROUNDWATER MONITORING AND  
CORRECTIVE ACTION REPORT  
ASH POND NO. 2 AND ASH POND NO. 4  
HENNEPIN POWER PLANT  
HENNEPIN, ILLINOIS**

**IEPA ID NO. W1550100002-04 AND  
W1550100002-07**

**2023 35 I.A.C. § 845 ANNUAL GROUNDWATER  
MONITORING AND CORRECTIVE ACTION REPORT  
HENNEPIN POWER PLANT ASH POND NO. 2 AND ASH  
POND NO. 4**

Project name **Hennepin Power Plant Ash Pond No. 2 and Ash Pond No. 4**  
Project no. **1940103649-009**  
Recipient **Dynegy Midwest Generation, LLC**  
Document type **Annual Groundwater Monitoring and Corrective Action Report**  
Version **FINAL**  
Date **January 31, 2024**  
Prepared by **Jeff R. Kampman**  
Checked by **Lauren D. Cook**  
Approved by **Eric J. Tlachac, PE**  
Description **Annual Report Required by 35 I.A.C. § 845**

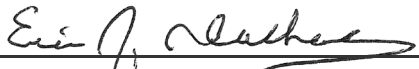
Ramboll  
234 W. Florida Street  
Fifth Floor  
Milwaukee, WI 53204  
USA

T 414-837-3607  
F 414-837-3608  
<https://ramboll.com>



---

**Jeff R. Kampman**  
Senior Project Scientist



---

**Eric J. Tlachac, PE**  
Senior Managing Engineer

## CONTENTS

|  |           |
|--|-----------|
| <b>EXECUTIVE SUMMARY</b>   | <b>3</b>  |
| <b>1. Introduction</b>   | <b>4</b>  |
| <b>2. Monitoring and Corrective Action Program Status</b>          | <b>6</b>  |
| <b>3. Key Actions Completed in 2023</b>                            | <b>7</b>  |
| 3.1 Sample and Analysis Summary                                    | 7         |
| 3.2 Exceedances of GWPS  | 9         |
| 3.3 Exceedances of Background                                      | 9         |
| <b>4. Problems Encountered and Actions to Resolve the Problems</b> | <b>10</b> |
| <b>5. Key Activities Planned for 2024</b>                          | <b>11</b> |
| <b>6. References</b>   | <b>12</b> |

### TABLES (IN TEXT)

|         |   |
|---------|---|
| Table A | 35 I.A.C. § 845 Monitoring Program Summary for 2023 |
|---------|---|

### TABLES (ATTACHED)

|         |  |
|---------|--|
| Table 1 | Field Parameters and Analytical Results – Quarter 2, 2023<br>Field Parameters and Analytical Results – Quarter 3, 2023     |
| Table 2 | Comparison of Statistical Results to GWPS – Quarter 2, 2023<br>Comparison of Statistical Results to GWPS – Quarter 3, 2023 |

### FIGURES

|           |   |
|-----------|---|
| Figure 1  | Monitoring Well Location Map                              |
| Figure 2  | GWPS Exceedance Map Uppermost Aquifer, Quarters 2-3, 2023 |
| Figure 3  | Potentiometric Surface Map, April 30, 2023                |
| Figure 4  | Potentiometric Surface Map, May 30, 2023                  |
| Figure 5  | Potentiometric Surface Map, June 21, 2023                 |
| Figure 6  | Potentiometric Surface Map, July 21, 2023                 |
| Figure 7  | Potentiometric Surface Map, August 21, 2023               |
| Figure 8  | Potentiometric Surface Map, September 30, 2023            |
| Figure 9  | Potentiometric Surface Map, October 31, 2023              |
| Figure 10 | Potentiometric Surface Map, November 11, 2023             |
| Figure 11 | Potentiometric Surface Map, December 21, 2023             |

### ATTACHMENTS

|              |  |
|--------------|--|
| Attachment A | Groundwater Elevation Data   |
| Attachment B | Comparison of Statistical Results to Background – Quarter 2, 2023<br>Comparison of Statistical Results to Background – Quarter 3, 2023 |

## ACRONYMS AND ABBREVIATIONS

|           |  |
|-----------|--|
| 35 I.A.C. | Title 35 of the Illinois Administrative Code |
| AP2/AP4   | Ash Pond No. 2 and Ash Pond No. 4            |
| CCA       | compliance commitment agreement              |
| CCR       | coal combustion residuals                    |
| CMA       | assessment of corrective measures            |
| DMG       | Dynegy Midwest Generation, LLC               |
| E001      | Quarter 2, 2023 sampling event               |
| E002      | Quarter 3, 2023 sampling event               |
| E003      | Quarter 4, 2023 sampling event               |
| GWPS      | groundwater protection standard              |
| HPP       | Hennepin Power Plant                         |
| ID        | identification                               |
| IEPA      | Illinois Environmental Protection Agency     |
| NID       | National Inventory of Dams                   |
| No.       | number                                       |
| Ramboll   | Ramboll Americas Engineering Solutions, Inc. |
| SI        | surface impoundment                          |
| SSI       | statistically significant increase           |

## EXECUTIVE SUMMARY

This report has been prepared to provide the information required by Title 35 of the Illinois Administrative Code (35 I.A.C.) § 845.610(e) (*Annual Groundwater Monitoring and Corrective Action Report*) for Ash Pond No. 2 and Ash Pond No. 4 (AP2/AP4) located at Hennepin Power Plant (HPP) near Hennepin, Illinois. AP2/AP4 is recognized by coal combustion residuals (CCR) unit identification (ID) number (No.) 802/805, Illinois Environmental Protection Agency (IEPA) ID No. W1550100002-04 and W1550100002-07, and National Inventory of Dams (NID) No. IL50663.

AP2/AP4 was closed in accordance with the Closure and Post Closure Care Plan submitted to IEPA in February 2018. IEPA approved the Closure and Post-Closure Care Plan on March 5, 2020.

As required by 35 I.A.C. § 845, an operating permit application for AP2/AP4 was submitted by Dynegy Midwest Generation, LLC (DMG) to IEPA by October 31, 2021 in accordance with the requirements specified in 35 I.A.C. § 845.230(d) and is pending approval. DMG entered into a compliance commitment agreement (CCA) with IEPA on December 28, 2022. As specified in the CCA, groundwater monitoring in accordance with the proposed groundwater monitoring plan and sampling methodologies provided in the operating permit application for AP2/AP4 commenced in the second quarter of 2023. All available groundwater monitoring data collected in 2023 is summarized in **Table 1** (field parameters and analytical results) and **Attachment A** (groundwater elevation data)<sup>1</sup>. After AP2/AP4 has been issued an approved operating permit, groundwater monitoring shall be conducted in accordance with that operating permit.

In accordance with 35 I.A.C. § 845.610(b)(3)(C) and the statistical analysis plan submitted with the operating permit application (Appendix A of the Groundwater Monitoring Plan [Ramboll Americas Engineering Solutions, Inc. (Ramboll), 2021]), statistically derived values for constituent concentrations observed at compliance monitoring wells were compared with the groundwater protection standards (GWPSs) described in 35 I.A.C. § 845.600 to determine exceedances of the GWPS (**Table 2**). No GWPS exceedances were determined in 2023 <sup>2</sup>, therefore an assessment of corrective measures (CMA) has not been initiated for AP2/AP4. In accordance with 35 I.A.C. § 845.610(b)(3)(B), statistically derived values for constituent concentrations observed at compliance monitoring wells were also evaluated quarterly for statistical exceedances over background levels (**Attachment B**).

<sup>1</sup> Analytical data received after December 31, 2023 will be reported in the Quarter 4, 2023 Groundwater Monitoring Data and Detected Exceedances Report.

<sup>2</sup> GWPS exceedances determined after January 31, 2024 will be reported in the Quarter 4, 2023 Groundwater Monitoring Data and Detected Exceedances Report.



## 1. INTRODUCTION

This report has been prepared by Ramboll Americas Engineering Solutions, Inc. (Ramboll) on behalf of DMG, to provide the information required by 35 I.A.C. § 845.610(e) for AP2/AP4 located at HPP near Hennepin, Illinois. The owner or operator of a CCR SI must prepare and submit to IEPA by January 31<sup>st</sup> of each year an Annual Groundwater Monitoring and Corrective Action Report for the preceding calendar year as part of the Annual Consolidated Report required by 35 I.A.C. § 845.550. The Annual Groundwater Monitoring and Corrective Action Report shall document the status of the groundwater monitoring and corrective action plan for the CCR SI (**Section 2**), summarize key actions completed, including the status of permit applications and Agency approvals (**Section 3**), describe any problems encountered and actions to resolve the problems (**Section 4**), and project key activities for the upcoming year (**Section 5**).

At a minimum, the annual report must contain the following information, to the extent available:

- A. A map, aerial image, or diagram showing the CCR surface impoundment (SI) and all background (or upgradient) and [downgradient] compliance monitoring wells, including the well identification numbers, that are part of the groundwater monitoring program for the CCR SI (**Figure 1**), and a visual delineation of any exceedances of the [groundwater protection standard] GWPS (**Figure 2**).
- B. Identification of any monitoring wells that were installed or decommissioned during the preceding year, along with a narrative description of why those actions were taken (**Section 3**, paragraph 1).
- C. A potentiometric surface map for each groundwater elevation sampling event required by 35 I.A.C. § 845.650(b)(2) (**Figures 3 through 11**).
- D. In addition to all the monitoring data obtained under 35 I.A.C. §§ 845.600-680, a summary including the number of groundwater samples that were collected for analysis for each background and [downgradient] compliance well, and the dates the samples were collected (**Section 3.1** and **Table A**).
- E. A narrative discussion of any statistically significant increases (SSIs) over background levels for the constituents listed in 35 I.A.C. § 845.600 (**Section 3.3** and **Attachment B**).
- F. Other information required to be included in the annual report as specified in 35 I.A.C. §§ 845.600-680.

A section at the beginning of the annual report that provides an overview of the current status of the groundwater monitoring program and corrective action plan for the CCR SI (see **Executive Summary**). At a minimum, the summary must:

- A. Specify whether groundwater monitoring data shows an SSI over background concentrations for one or more constituents listed in 35 I.A.C. § 845.600.
- B. Identify those constituents having an SSI over background concentrations and the names of the monitoring wells associated with the SSI(s).
- C. Specify whether there have been any exceedances of the GWPS for one or more constituents listed in 35 I.A.C. § 845.600.

- D. Identify those constituents with exceedances of the GWPS in 35 I.A.C. § 845.600 and the names of the monitoring wells associated with the exceedance.
- E. Provide the date when the assessment of corrective measures was initiated for the CCR SI.
- F. Provide the date when the assessment of corrective measures was completed for the CCR SI.
- G. Specify whether a remedy was selected under 35 I.A.C. § 845.670 during the current annual reporting period, and if so, the date of remedy selection.
- H. Specify whether remedial activities were initiated or are ongoing under 35 I.A.C. § 845.780 during the current annual reporting period.

This report provides the required information for AP2/AP4 for calendar year 2023.

## 2. MONITORING AND CORRECTIVE ACTION PROGRAM STATUS

AP2/AP4 was closed in accordance with the Closure and Post Closure Care Plan submitted to IEPA in February 2018. IEPA approved the Closure and Post-Closure Care Plan on March 5, 2020.

An operating permit application for AP2/AP4 was submitted by DMG to IEPA by October 31, 2021 in accordance with the requirements specified in 35 I.A.C. § 845.230(d) and is pending approval. DMG entered into a CCA with IEPA on December 28, 2022. As specified in the CCA, groundwater monitoring in accordance with the proposed groundwater monitoring plan and sampling methodologies provided in the operating permit application for AP2/AP4 commenced in the second quarter of 2023. After AP2/AP4 has been issued an approved operating permit, groundwater monitoring shall be conducted in accordance with that operating permit. As specified in the CCA, groundwater sampling requirements that apply to the CCR SI under other existing permit programs will become void upon issuance of an approved operating permit pursuant to 35 I.A.C § 845. In addition, and in accordance with the CCA, groundwater monitoring performed under Section 1.5 of the approved Closure and Post-Closure Care Plan ceased with commencement of quarterly groundwater monitoring under 35 I.A.C § 845.

As noted in the **Executive Summary** and **Section 3.2**, no GWPS exceedances were determined for AP2/AP4 in 2023.

### 3. KEY ACTIONS COMPLETED IN 2023

The proposed 35 I.A.C. § 845 monitoring system is presented in **Figure 1**. No wells were installed or decommissioned in 2023.

Monitoring well inspections and redevelopment of the monitoring wells that were not sampled in 2022 were also completed prior to initiating groundwater monitoring in the second quarter of 2023.

Pressure transducers equipped with data loggers were deployed in monitoring system monitoring wells for measurement of monthly water level elevations as required by 35 I.A.C. § 845.650(b)(2). **Attachment A** summarizes the groundwater elevation data collected in 2023. Potentiometric surfaces for April through December 2023 are included in **Figures 3 through 11**.

A summary of the samples collected in 2023 is included in **Section 3.1**. Narrative discussions of exceedances of GWPSs and background are included in **Section 3.2** and **Section 3.3**, respectively. Statistical procedures used to evaluate groundwater results are provided in Appendix A of the Groundwater Monitoring Plan provided in the operating permit application (Ramboll, 2021).

#### 3.1 Sample and Analysis Summary

One groundwater sample was collected from each background and compliance well during each quarterly monitoring event beginning in the second quarter of 2023. All samples were collected and analyzed in accordance with the Groundwater Monitoring Plan provided in the operating permit application (Ramboll, 2021). A summary of the samples collected from background and compliance monitoring wells in 2023 is included in **Table A** on the following page. **Table 1** is a summary of the field parameters and analytical results from the 2023 sampling events. Laboratory analytical reports and field data sheets were provided in the quarterly Groundwater Monitoring Data and Detected Exceedances Reports for Quarter 2 and Quarter 3 (Ramboll, 2023a; Ramboll, 2023b); therefore, these reports are not attached to this annual report to avoid reproduction of lengthy data transmittals that have been previously provided in hardcopy. Analytical data received after December 31, 2023 will be reported in the Quarter 4, 2023 Groundwater Monitoring Data and Detected Exceedances Report.

**Table A. 35 I.A.C. § 845 Monitoring Program Summary for 2023**

| <b>Event ID</b> | <b>Sampling Dates <sup>1, 2, 3</sup></b> | <b>Analytical Data Receipt Date <sup>4</sup></b> | <b>Exceedance Determination Date</b> | <b>ASD Completion Date</b> | <b>Required CMA Initiation Date</b> |
|-----------------|--|--|--------------------------------------|----------------------------|-------------------------------------|
| E001            | May 31 - June 1, 2023                    | July 13, 2023                                    | September 11, 2023                   | NA                         | NA                                  |
| E002            | August 23 - 24, and 28, 2023             | November 16, 2023                                | January 15, 2024                     | NA                         | NA                                  |
| E003            | November 16 - 17, and 20, 2023           | January 4, 2024                                  | TBD                                  | TBD                        | TBD                                 |

**Notes:**

ASD: Alternative Source Demonstration

NA: not applicable

TBD: to be determined in 2024

<sup>1</sup> All samples were analyzed for the parameters listed in 35 I.A.C. § 845.600, calcium, and turbidity.

<sup>2</sup> The following background wells were sampled for each event: 07, 08, and 08D

<sup>3</sup> The following compliance wells were sampled for each event: 03R, 18D, 18S, and 45S

<sup>4</sup> Analytical data received after December 31, 2023 and GWPS exceedances determined after January 31, 2024 will be reported in the Quarter 4, 2023 Groundwater Monitoring Data and Detected Exceedances Report.

### **3.2 Exceedances of GWPS**

In accordance with 35 I.A.C. § 845.610(b)(3)(C), the statistically derived values identified as Statistical Results in **Table 2** were compared with the GWPSs described in 35 I.A.C. § 845.600 to determine exceedances of the GWPS. No statistical exceedances of the GWPSs were determined as shown on **Figure 2**<sup>3</sup>.

### **3.3 Exceedances of Background**

In accordance with 35 I.A.C. § 845.610(b)(3)(B), groundwater monitoring data were evaluated quarterly for exceedances over background levels for the constituents listed in 35 I.A.C. § 845.600. **Attachment B** shows the statistically derived values identified as Statistical Results compared to background levels.

<sup>3</sup> GWPS exceedances determined after January 31, 2024 will be reported in the Quarter 4, 2023 Groundwater Monitoring Data and Detected Exceedances Report.

## **4. PROBLEMS ENCOUNTERED AND ACTIONS TO RESOLVE THE PROBLEMS**

Groundwater monitoring commenced in the second quarter of 2023. Groundwater samples were collected and analyzed in accordance with the Groundwater Monitoring Plan provided in the operating permit application (Ramboll, 2021) and all data were accepted. After AP2/AP4 has been issued an approved operating permit, groundwater monitoring shall be conducted in accordance with that operating permit.

Due to malfunctioning pressure transducers, data gaps exist in monthly water level elevations prior to the fourth quarter. Monthly depth to water measurements were collected manually in the fourth quarter. Pressure transducers were refurbished and were redeployed in January 2024.

## 5. KEY ACTIVITIES PLANNED FOR 2024

The following key activities are planned for 2024:

- Continuation of groundwater monitoring in accordance with the proposed groundwater monitoring plan and sampling methodologies provided in the operating permit application for AP2/AP4. After AP2/AP4 has been issued an approved operating permit, groundwater monitoring shall be conducted in accordance with that operating permit. Groundwater monitoring will include:
  - Monthly groundwater elevations
  - Quarterly groundwater sampling
- Complete evaluation of analytical data from the compliance wells to determine whether exceedances above GWPSs have occurred.
- If a GWPS exceedance is identified, potential alternative sources (*i.e.*, a source other than the CCR unit caused the GWPS exceedance or that the exceedance resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality) will be evaluated.
  - If an alternative source is identified to be the cause of the GWPS exceedance, a written demonstration will be completed within 60 days of determination and included in the 2024 Annual Groundwater Monitoring and Corrective Action Report.
  - If an alternative source(s) is not identified to be the cause of the GWPS exceedance, the applicable requirements of 35 I.A.C. § 845.660 (*i.e.*, assessment of corrective measures) will be met.



## 6. REFERENCES

Illinois Administrative Code, Title 35, Subtitle G, Chapter I, Subchapter J, *Part 845: Standards for The Disposal Of Coal Combustion Residuals In Surface Impoundments*, effective April 21, 2021.

Ramboll Americas Engineering Solutions, Inc. (Ramboll), 2021. *Addendum to the Groundwater Monitoring Plan*. Hennepin Power Plant, Ash Pond No. 2 and Ash Pond No. 4, Hennepin, Illinois. Dynegy Midwest Generation, LLC. October 25, 2021.

Ramboll Americas Engineering Solutions, Inc. (Ramboll), 2023a. 35 I.A.C. § 845.610(B)(3)(D) Groundwater Monitoring Data and Detected Exceedances, 2023 Quarter 2, Ash Ponds No. 2 and No. 4, Hennepin Power Plant, Hennepin, Illinois. September 11, 2023.

Ramboll Americas Engineering Solutions, Inc. (Ramboll), 2023b. 35 I.A.C. § 845.610(B)(3)(D) Groundwater Monitoring Data and Detected Exceedances, 2023 Quarter 3, Ash Ponds No. 2 and No. 4, Hennepin Power Plant, Hennepin, Illinois. January 15, 2024.

## **TABLES**

**TABLE 1.**  
**FIELD PARAMETERS AND ANALYTICAL RESULTS - QUARTER 2, 2023**

845 QUARTERLY REPORT  
 HENNEPIN POWER PLANT  
 ASH POND NO. 2 AND ASH POND NO. 4  
 HENNEPIN, IL

| Well ID | Well Type  | Event | Date       | Parameter                          | Result     | Unit         |
|---------|------------|-------|------------|------------------------------------|------------|--------------|
| 07      | Background | E001  | 06/01/2023 | Antimony, total                    | 0.0004 U   | mg/L         |
| 07      | Background | E001  | 06/01/2023 | Arsenic, total                     | 0.0087 U   | mg/L         |
| 07      | Background | E001  | 06/01/2023 | Barium, total                      | 0.124      | mg/L         |
| 07      | Background | E001  | 06/01/2023 | Beryllium, total                   | 0.0002 U   | mg/L         |
| 07      | Background | E001  | 06/01/2023 | Boron, total                       | 0.0701     | mg/L         |
| 07      | Background | E001  | 06/01/2023 | Cadmium, total                     | 0.0005 U   | mg/L         |
| 07      | Background | E001  | 06/01/2023 | Calcium, total                     | 144        | mg/L         |
| 07      | Background | E001  | 06/01/2023 | Chloride, total                    | 68.0       | mg/L         |
| 07      | Background | E001  | 06/01/2023 | Chromium, total                    | 0.0028 U   | mg/L         |
| 07      | Background | E001  | 06/01/2023 | Cobalt, total                      | 0.0875     | mg/L         |
| 07      | Background | E001  | 06/01/2023 | Dissolved Oxygen                   | 2.60       | mg/L         |
| 07      | Background | E001  | 06/01/2023 | Fluoride, total                    | 0.100      | mg/L         |
| 07      | Background | E001  | 06/01/2023 | Lead, total                        | 0.004 U    | mg/L         |
| 07      | Background | E001  | 06/01/2023 | Lithium, total                     | 0.0038 U   | mg/L         |
| 07      | Background | E001  | 06/01/2023 | Mercury, total                     | 0.00006 U  | mg/L         |
| 07      | Background | E001  | 06/01/2023 | Molybdenum, total                  | 0.0037 U   | mg/L         |
| 07      | Background | E001  | 06/01/2023 | Oxidation Reduction Potential      | 155        | mV           |
| 07      | Background | E001  | 06/01/2023 | pH (field)                         | 6.7        | SU           |
| 07      | Background | E001  | 06/01/2023 | Radium 226 + Radium 228, total     | 0.203      | pCi/L        |
| 07      | Background | E001  | 06/01/2023 | Selenium, total                    | 0.0006 U   | mg/L         |
| 07      | Background | E001  | 06/01/2023 | Specific Conductance @ 25C (field) | 1,210      | micromhos/cm |
| 07      | Background | E001  | 06/01/2023 | Sulfate, total                     | 109        | mg/L         |
| 07      | Background | E001  | 06/01/2023 | Temperature                        | 11.8       | degrees C    |
| 07      | Background | E001  | 06/01/2023 | Thallium, total                    | 0.001 U    | mg/L         |
| 07      | Background | E001  | 06/01/2023 | Total Dissolved Solids             | 730        | mg/L         |
| 07      | Background | E001  | 06/01/2023 | Turbidity, field                   | 1 U        | NTU          |
| 08      | Background | E001  | 06/01/2023 | Antimony, total                    | 0.0004 U   | mg/L         |
| 08      | Background | E001  | 06/01/2023 | Arsenic, total                     | 0.0087 U   | mg/L         |
| 08      | Background | E001  | 06/01/2023 | Barium, total                      | 0.0883     | mg/L         |
| 08      | Background | E001  | 06/01/2023 | Beryllium, total                   | 0.0002 U   | mg/L         |
| 08      | Background | E001  | 06/01/2023 | Boron, total                       | 0.121      | mg/L         |
| 08      | Background | E001  | 06/01/2023 | Cadmium, total                     | 0.0005 U   | mg/L         |
| 08      | Background | E001  | 06/01/2023 | Calcium, total                     | 0.035 U    | mg/L         |
| 08      | Background | E001  | 06/01/2023 | Chloride, total                    | 149        | mg/L         |
| 08      | Background | E001  | 06/01/2023 | Chromium, total                    | 0.0028 U   | mg/L         |
| 08      | Background | E001  | 06/01/2023 | Cobalt, total                      | 0.00320    | mg/L         |
| 08      | Background | E001  | 06/01/2023 | Dissolved Oxygen                   | 2.59       | mg/L         |
| 08      | Background | E001  | 06/01/2023 | Fluoride, total                    | 0.09 J     | mg/L         |
| 08      | Background | E001  | 06/01/2023 | Lead, total                        | 0.004 U    | mg/L         |
| 08      | Background | E001  | 06/01/2023 | Lithium, total                     | 0.00900 J+ | mg/L         |
| 08      | Background | E001  | 06/01/2023 | Mercury, total                     | 0.00006 U  | mg/L         |
| 08      | Background | E001  | 06/01/2023 | Molybdenum, total                  | 0.0037 U   | mg/L         |
| 08      | Background | E001  | 06/01/2023 | Oxidation Reduction Potential      | 168        | mV           |
| 08      | Background | E001  | 06/01/2023 | pH (field)                         | 6.5        | SU           |
| 08      | Background | E001  | 06/01/2023 | Radium 226 + Radium 228, total     | 0.598 J    | pCi/L        |
| 08      | Background | E001  | 06/01/2023 | Selenium, total                    | 0.0006 U   | mg/L         |

**TABLE 1.**  
**FIELD PARAMETERS AND ANALYTICAL RESULTS - QUARTER 2, 2023**

845 QUARTERLY REPORT  
 HENNEPIN POWER PLANT  
 ASH POND NO. 2 AND ASH POND NO. 4  
 HENNEPIN, IL

| Well ID | Well Type  | Event | Date       | Parameter                          | Result    | Unit         |
|---------|------------|-------|------------|------------------------------------|-----------|--------------|
| 08      | Background | E001  | 06/01/2023 | Specific Conductance @ 25C (field) | 1,620     | micromhos/cm |
| 08      | Background | E001  | 06/01/2023 | Sulfate, total                     | 134 J     | mg/L         |
| 08      | Background | E001  | 06/01/2023 | Temperature                        | 13.3      | degrees C    |
| 08      | Background | E001  | 06/01/2023 | Thallium, total                    | 0.001 U   | mg/L         |
| 08      | Background | E001  | 06/01/2023 | Total Dissolved Solids             | 902       | mg/L         |
| 08      | Background | E001  | 06/01/2023 | Turbidity, field                   | 1 U       | NTU          |
| 08D     | Background | E001  | 05/31/2023 | Antimony, total                    | 0.0004 U  | mg/L         |
| 08D     | Background | E001  | 05/31/2023 | Arsenic, total                     | 0.0087 U  | mg/L         |
| 08D     | Background | E001  | 05/31/2023 | Barium, total                      | 0.108     | mg/L         |
| 08D     | Background | E001  | 05/31/2023 | Beryllium, total                   | 0.0003 J  | mg/L         |
| 08D     | Background | E001  | 05/31/2023 | Boron, total                       | 0.0842    | mg/L         |
| 08D     | Background | E001  | 05/31/2023 | Cadmium, total                     | 0.0005 U  | mg/L         |
| 08D     | Background | E001  | 05/31/2023 | Calcium, total                     | 200       | mg/L         |
| 08D     | Background | E001  | 05/31/2023 | Chloride, total                    | 285       | mg/L         |
| 08D     | Background | E001  | 05/31/2023 | Chromium, total                    | 0.0028 U  | mg/L         |
| 08D     | Background | E001  | 05/31/2023 | Cobalt, total                      | 0.00460   | mg/L         |
| 08D     | Background | E001  | 05/31/2023 | Dissolved Oxygen                   | 1.55      | mg/L         |
| 08D     | Background | E001  | 05/31/2023 | Fluoride, total                    | 0.08 J    | mg/L         |
| 08D     | Background | E001  | 05/31/2023 | Lead, total                        | 0.004 U   | mg/L         |
| 08D     | Background | E001  | 05/31/2023 | Lithium, total                     | 0.0114 J+ | mg/L         |
| 08D     | Background | E001  | 05/31/2023 | Mercury, total                     | 0.00006 U | mg/L         |
| 08D     | Background | E001  | 05/31/2023 | Molybdenum, total                  | 0.0037 U  | mg/L         |
| 08D     | Background | E001  | 05/31/2023 | Oxidation Reduction Potential      | 77.0      | mV           |
| 08D     | Background | E001  | 05/31/2023 | pH (field)                         | 6.6       | SU           |
| 08D     | Background | E001  | 05/31/2023 | Radium 226 + Radium 228, total     | 2.10 J+   | pCi/L        |
| 08D     | Background | E001  | 05/31/2023 | Selenium, total                    | 0.0006 U  | mg/L         |
| 08D     | Background | E001  | 05/31/2023 | Specific Conductance @ 25C (field) | 2,250     | micromhos/cm |
| 08D     | Background | E001  | 05/31/2023 | Sulfate, total                     | 198       | mg/L         |
| 08D     | Background | E001  | 05/31/2023 | Temperature                        | 13.8      | degrees C    |
| 08D     | Background | E001  | 05/31/2023 | Thallium, total                    | 0.001 U   | mg/L         |
| 08D     | Background | E001  | 05/31/2023 | Total Dissolved Solids             | 1,290     | mg/L         |
| 08D     | Background | E001  | 05/31/2023 | Turbidity, field                   | 1 U       | NTU          |
| 03R     | Compliance | E001  | 05/31/2023 | Antimony, total                    | 0.0004 U  | mg/L         |
| 03R     | Compliance | E001  | 05/31/2023 | Arsenic, total                     | 0.0087 U  | mg/L         |
| 03R     | Compliance | E001  | 05/31/2023 | Barium, total                      | 0.0667    | mg/L         |
| 03R     | Compliance | E001  | 05/31/2023 | Beryllium, total                   | 0.0002 U  | mg/L         |
| 03R     | Compliance | E001  | 05/31/2023 | Boron, total                       | 0.609     | mg/L         |
| 03R     | Compliance | E001  | 05/31/2023 | Cadmium, total                     | 0.0005 U  | mg/L         |
| 03R     | Compliance | E001  | 05/31/2023 | Calcium, total                     | 88.2      | mg/L         |
| 03R     | Compliance | E001  | 05/31/2023 | Chloride, total                    | 87.0      | mg/L         |
| 03R     | Compliance | E001  | 05/31/2023 | Chromium, total                    | 0.0028 U  | mg/L         |
| 03R     | Compliance | E001  | 05/31/2023 | Cobalt, total                      | 0.0005 J  | mg/L         |
| 03R     | Compliance | E001  | 05/31/2023 | Dissolved Oxygen                   | 0.780     | mg/L         |
| 03R     | Compliance | E001  | 05/31/2023 | Fluoride, total                    | 0.220     | mg/L         |
| 03R     | Compliance | E001  | 05/31/2023 | Lead, total                        | 0.004 U   | mg/L         |
| 03R     | Compliance | E001  | 05/31/2023 | Lithium, total                     | 0.0248 J+ | mg/L         |

**TABLE 1.**  
**FIELD PARAMETERS AND ANALYTICAL RESULTS - QUARTER 2, 2023**

845 QUARTERLY REPORT  
 HENNEPIN POWER PLANT  
 ASH POND NO. 2 AND ASH POND NO. 4  
 HENNEPIN, IL

| Well ID | Well Type  | Event | Date       | Parameter                          | Result    | Unit         |
|---------|------------|-------|------------|------------------------------------|-----------|--------------|
| 03R     | Compliance | E001  | 05/31/2023 | Mercury, total                     | 0.00006 U | mg/L         |
| 03R     | Compliance | E001  | 05/31/2023 | Molybdenum, total                  | 0.104     | mg/L         |
| 03R     | Compliance | E001  | 05/31/2023 | Oxidation Reduction Potential      | 116       | mV           |
| 03R     | Compliance | E001  | 05/31/2023 | pH (field)                         | 7.3       | SU           |
| 03R     | Compliance | E001  | 05/31/2023 | Radium 226 + Radium 228, total     | 0.807 J+  | pCi/L        |
| 03R     | Compliance | E001  | 05/31/2023 | Selenium, total                    | 0.0122    | mg/L         |
| 03R     | Compliance | E001  | 05/31/2023 | Specific Conductance @ 25C (field) | 927       | micromhos/cm |
| 03R     | Compliance | E001  | 05/31/2023 | Sulfate, total                     | 91.0      | mg/L         |
| 03R     | Compliance | E001  | 05/31/2023 | Temperature                        | 18.4      | degrees C    |
| 03R     | Compliance | E001  | 05/31/2023 | Thallium, total                    | 0.001 U   | mg/L         |
| 03R     | Compliance | E001  | 05/31/2023 | Total Dissolved Solids             | 520       | mg/L         |
| 03R     | Compliance | E001  | 05/31/2023 | Turbidity, field                   | 1 U       | NTU          |
| 18S     | Compliance | E001  | 05/31/2023 | Antimony, total                    | 0.0004 U  | mg/L         |
| 18S     | Compliance | E001  | 05/31/2023 | Arsenic, total                     | 0.0087 U  | mg/L         |
| 18S     | Compliance | E001  | 05/31/2023 | Barium, total                      | 0.0626    | mg/L         |
| 18S     | Compliance | E001  | 05/31/2023 | Beryllium, total                   | 0.0002 U  | mg/L         |
| 18S     | Compliance | E001  | 05/31/2023 | Boron, total                       | 2.62      | mg/L         |
| 18S     | Compliance | E001  | 05/31/2023 | Cadmium, total                     | 0.0005 U  | mg/L         |
| 18S     | Compliance | E001  | 05/31/2023 | Calcium, total                     | 93.4      | mg/L         |
| 18S     | Compliance | E001  | 05/31/2023 | Chloride, total                    | 89.0      | mg/L         |
| 18S     | Compliance | E001  | 05/31/2023 | Chromium, total                    | 0.0028 U  | mg/L         |
| 18S     | Compliance | E001  | 05/31/2023 | Cobalt, total                      | 0.0002 J  | mg/L         |
| 18S     | Compliance | E001  | 05/31/2023 | Dissolved Oxygen                   | 0.850     | mg/L         |
| 18S     | Compliance | E001  | 05/31/2023 | Fluoride, total                    | 0.150     | mg/L         |
| 18S     | Compliance | E001  | 05/31/2023 | Lead, total                        | 0.004 U   | mg/L         |
| 18S     | Compliance | E001  | 05/31/2023 | Lithium, total                     | 0.0579 J+ | mg/L         |
| 18S     | Compliance | E001  | 05/31/2023 | Mercury, total                     | 0.00006 U | mg/L         |
| 18S     | Compliance | E001  | 05/31/2023 | Molybdenum, total                  | 0.148     | mg/L         |
| 18S     | Compliance | E001  | 05/31/2023 | Oxidation Reduction Potential      | 135       | mV           |
| 18S     | Compliance | E001  | 05/31/2023 | pH (field)                         | 7.4       | SU           |
| 18S     | Compliance | E001  | 05/31/2023 | Radium 226 + Radium 228, total     | 0.745 J+  | pCi/L        |
| 18S     | Compliance | E001  | 05/31/2023 | Selenium, total                    | 0.0329    | mg/L         |
| 18S     | Compliance | E001  | 05/31/2023 | Specific Conductance @ 25C (field) | 921       | micromhos/cm |
| 18S     | Compliance | E001  | 05/31/2023 | Sulfate, total                     | 143       | mg/L         |
| 18S     | Compliance | E001  | 05/31/2023 | Temperature                        | 17.2      | degrees C    |
| 18S     | Compliance | E001  | 05/31/2023 | Thallium, total                    | 0.001 U   | mg/L         |
| 18S     | Compliance | E001  | 05/31/2023 | Total Dissolved Solids             | 586       | mg/L         |
| 18S     | Compliance | E001  | 05/31/2023 | Turbidity, field                   | 1 U       | NTU          |
| 18D     | Compliance | E001  | 05/31/2023 | Antimony, total                    | 0.0004 U  | mg/L         |
| 18D     | Compliance | E001  | 05/31/2023 | Arsenic, total                     | 0.0087 U  | mg/L         |
| 18D     | Compliance | E001  | 05/31/2023 | Barium, total                      | 0.0710    | mg/L         |
| 18D     | Compliance | E001  | 05/31/2023 | Beryllium, total                   | 0.0002 U  | mg/L         |
| 18D     | Compliance | E001  | 05/31/2023 | Boron, total                       | 1.28      | mg/L         |
| 18D     | Compliance | E001  | 05/31/2023 | Cadmium, total                     | 0.0005 U  | mg/L         |
| 18D     | Compliance | E001  | 05/31/2023 | Calcium, total                     | 90.6      | mg/L         |
| 18D     | Compliance | E001  | 05/31/2023 | Chloride, total                    | 85.0      | mg/L         |

**TABLE 1.**  
**FIELD PARAMETERS AND ANALYTICAL RESULTS - QUARTER 2, 2023**

845 QUARTERLY REPORT  
 HENNEPIN POWER PLANT  
 ASH POND NO. 2 AND ASH POND NO. 4  
 HENNEPIN, IL

| Well ID | Well Type  | Event | Date       | Parameter                          | Result    | Unit         |
|---------|------------|-------|------------|------------------------------------|-----------|--------------|
| 18D     | Compliance | E001  | 05/31/2023 | Chromium, total                    | 0.0028 U  | mg/L         |
| 18D     | Compliance | E001  | 05/31/2023 | Cobalt, total                      | 0.00270   | mg/L         |
| 18D     | Compliance | E001  | 05/31/2023 | Dissolved Oxygen                   | 0.860     | mg/L         |
| 18D     | Compliance | E001  | 05/31/2023 | Fluoride, total                    | 0.130     | mg/L         |
| 18D     | Compliance | E001  | 05/31/2023 | Lead, total                        | 0.004 U   | mg/L         |
| 18D     | Compliance | E001  | 05/31/2023 | Lithium, total                     | 0.0251 J+ | mg/L         |
| 18D     | Compliance | E001  | 05/31/2023 | Mercury, total                     | 0.00006 U | mg/L         |
| 18D     | Compliance | E001  | 05/31/2023 | Molybdenum, total                  | 0.0315    | mg/L         |
| 18D     | Compliance | E001  | 05/31/2023 | Oxidation Reduction Potential      | 140       | mV           |
| 18D     | Compliance | E001  | 05/31/2023 | pH (field)                         | 7.2       | SU           |
| 18D     | Compliance | E001  | 05/31/2023 | Radium 226 + Radium 228, total     | 1.06 J+   | pCi/L        |
| 18D     | Compliance | E001  | 05/31/2023 | Selenium, total                    | 0.00120   | mg/L         |
| 18D     | Compliance | E001  | 05/31/2023 | Specific Conductance @ 25C (field) | 922       | micromhos/cm |
| 18D     | Compliance | E001  | 05/31/2023 | Sulfate, total                     | 106       | mg/L         |
| 18D     | Compliance | E001  | 05/31/2023 | Temperature                        | 17.5      | degrees C    |
| 18D     | Compliance | E001  | 05/31/2023 | Thallium, total                    | 0.001 U   | mg/L         |
| 18D     | Compliance | E001  | 05/31/2023 | Total Dissolved Solids             | 522       | mg/L         |
| 18D     | Compliance | E001  | 05/31/2023 | Turbidity, field                   | 17.0      | NTU          |
| 45S     | Compliance | E001  | 06/01/2023 | Antimony, total                    | 0.0004 U  | mg/L         |
| 45S     | Compliance | E001  | 06/01/2023 | Arsenic, total                     | 0.0087 U  | mg/L         |
| 45S     | Compliance | E001  | 06/01/2023 | Barium, total                      | 0.0947    | mg/L         |
| 45S     | Compliance | E001  | 06/01/2023 | Beryllium, total                   | 0.0002 U  | mg/L         |
| 45S     | Compliance | E001  | 06/01/2023 | Boron, total                       | 0.292     | mg/L         |
| 45S     | Compliance | E001  | 06/01/2023 | Cadmium, total                     | 0.0006 J  | mg/L         |
| 45S     | Compliance | E001  | 06/01/2023 | Calcium, total                     | 111       | mg/L         |
| 45S     | Compliance | E001  | 06/01/2023 | Chloride, total                    | 123       | mg/L         |
| 45S     | Compliance | E001  | 06/01/2023 | Chromium, total                    | 0.0028 U  | mg/L         |
| 45S     | Compliance | E001  | 06/01/2023 | Cobalt, total                      | 0.00420   | mg/L         |
| 45S     | Compliance | E001  | 06/01/2023 | Dissolved Oxygen                   | 1.11      | mg/L         |
| 45S     | Compliance | E001  | 06/01/2023 | Fluoride, total                    | 0.220     | mg/L         |
| 45S     | Compliance | E001  | 06/01/2023 | Lead, total                        | 0.004 U   | mg/L         |
| 45S     | Compliance | E001  | 06/01/2023 | Lithium, total                     | 0.0121 J+ | mg/L         |
| 45S     | Compliance | E001  | 06/01/2023 | Mercury, total                     | 0.00006 U | mg/L         |
| 45S     | Compliance | E001  | 06/01/2023 | Molybdenum, total                  | 0.0525    | mg/L         |
| 45S     | Compliance | E001  | 06/01/2023 | Oxidation Reduction Potential      | 138       | mV           |
| 45S     | Compliance | E001  | 06/01/2023 | pH (field)                         | 6.9       | SU           |
| 45S     | Compliance | E001  | 06/01/2023 | Radium 226 + Radium 228, total     | 3.90 J+   | pCi/L        |
| 45S     | Compliance | E001  | 06/01/2023 | Selenium, total                    | 0.0006 U  | mg/L         |
| 45S     | Compliance | E001  | 06/01/2023 | Specific Conductance @ 25C (field) | 1,110     | micromhos/cm |
| 45S     | Compliance | E001  | 06/01/2023 | Sulfate, total                     | 87.0      | mg/L         |
| 45S     | Compliance | E001  | 06/01/2023 | Temperature                        | 19.9      | degrees C    |
| 45S     | Compliance | E001  | 06/01/2023 | Thallium, total                    | 0.001 U   | mg/L         |
| 45S     | Compliance | E001  | 06/01/2023 | Total Dissolved Solids             | 644       | mg/L         |
| 45S     | Compliance | E001  | 06/01/2023 | Turbidity, field                   | 2.50      | NTU          |

**TABLE 1.**  
**FIELD PARAMETERS AND ANALYTICAL RESULTS - QUARTER 2, 2023**

845 QUARTERLY REPORT  
HENNEPIN POWER PLANT  
ASH POND NO. 2 AND ASH POND NO. 4  
HENNEPIN, IL

**Notes:**

C = Celsius

cm = centimeter

mg/L = milligrams per liter

mV = millivolts

NTU = Nephelometric Turbidity Units

pCi/L = picocuries per liter

SU = Standard Units

J = The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

J+ = The result is an estimated quantity, but the result may be biased high.

U = The analyte was analyzed for, but was not detected above the level of the adjusted detection limit or quantitation limit, as appropriate.

**TABLE 1.  
FIELD PARAMETERS AND ANALYTICAL RESULTS - QUARTER 3, 2023**

845 QUARTERLY REPORT  
HENNEPIN POWER PLANT  
ASH POND NO. 2 AND ASH POND NO. 4  
HENNEPIN, IL

| Well ID | Well Type  | Event | Date       | Parameter                          | Result     | Unit         |
|---------|------------|-------|------------|------------------------------------|------------|--------------|
| 07      | Background | E002  | 08/24/2023 | Antimony, total                    | 0.0013 U   | mg/L         |
| 07      | Background | E002  | 08/24/2023 | Arsenic, total                     | 0.001 UJ   | mg/L         |
| 07      | Background | E002  | 08/24/2023 | Barium, total                      | 0.120      | mg/L         |
| 07      | Background | E002  | 08/24/2023 | Beryllium, total                   | 0.00053 U  | mg/L         |
| 07      | Background | E002  | 08/24/2023 | Boron, total                       | 0.0670     | mg/L         |
| 07      | Background | E002  | 08/24/2023 | Cadmium, total                     | 0.00017 U  | mg/L         |
| 07      | Background | E002  | 08/24/2023 | Calcium, total                     | 94.0       | mg/L         |
| 07      | Background | E002  | 08/24/2023 | Chloride, total                    | 51.0       | mg/L         |
| 07      | Background | E002  | 08/24/2023 | Chromium, total                    | 0.0011 U   | mg/L         |
| 07      | Background | E002  | 08/24/2023 | Cobalt, total                      | 0.0360     | mg/L         |
| 07      | Background | E002  | 08/24/2023 | Dissolved Oxygen                   | 4.15       | mg/L         |
| 07      | Background | E002  | 08/24/2023 | Fluoride, total                    | 0.24 J     | mg/L         |
| 07      | Background | E002  | 08/24/2023 | Lead, total                        | 0.00019 U  | mg/L         |
| 07      | Background | E002  | 08/24/2023 | Lithium, total                     | 0.00990    | mg/L         |
| 07      | Background | E002  | 08/24/2023 | Mercury, total                     | 0.000079 U | mg/L         |
| 07      | Background | E002  | 08/24/2023 | Molybdenum, total                  | 0.0025 U   | mg/L         |
| 07      | Background | E002  | 08/24/2023 | Oxidation Reduction Potential      | 180        | mV           |
| 07      | Background | E002  | 08/24/2023 | pH (field)                         | 6.9        | SU           |
| 07      | Background | E002  | 08/24/2023 | Radium 226 + Radium 228, total     | 0.647      | pCi/L        |
| 07      | Background | E002  | 08/24/2023 | Selenium, total                    | 0.00098 U  | mg/L         |
| 07      | Background | E002  | 08/24/2023 | Specific Conductance @ 25C (field) | 699        | micromhos/cm |
| 07      | Background | E002  | 08/24/2023 | Sulfate, total                     | 67.0       | mg/L         |
| 07      | Background | E002  | 08/24/2023 | Temperature                        | 13.8       | degrees C    |
| 07      | Background | E002  | 08/24/2023 | Thallium, total                    | 0.00057 U  | mg/L         |
| 07      | Background | E002  | 08/24/2023 | Total Dissolved Solids             | 640        | mg/L         |
| 07      | Background | E002  | 08/24/2023 | Turbidity, field                   | 3.55       | NTU          |
| 08      | Background | E002  | 08/24/2023 | Antimony, total                    | 0.0013 U   | mg/L         |
| 08      | Background | E002  | 08/24/2023 | Arsenic, total                     | 0.001 UJ   | mg/L         |
| 08      | Background | E002  | 08/24/2023 | Barium, total                      | 0.120      | mg/L         |
| 08      | Background | E002  | 08/24/2023 | Beryllium, total                   | 0.00053 U  | mg/L         |
| 08      | Background | E002  | 08/24/2023 | Boron, total                       | 0.0700     | mg/L         |
| 08      | Background | E002  | 08/24/2023 | Cadmium, total                     | 0.0005 UJ  | mg/L         |
| 08      | Background | E002  | 08/24/2023 | Calcium, total                     | 160        | mg/L         |
| 08      | Background | E002  | 08/24/2023 | Chloride, total                    | 240        | mg/L         |
| 08      | Background | E002  | 08/24/2023 | Chromium, total                    | 0.0011 U   | mg/L         |
| 08      | Background | E002  | 08/24/2023 | Cobalt, total                      | 0.00360    | mg/L         |
| 08      | Background | E002  | 08/24/2023 | Dissolved Oxygen                   | 1.16       | mg/L         |
| 08      | Background | E002  | 08/24/2023 | Fluoride, total                    | 0.19 J     | mg/L         |
| 08      | Background | E002  | 08/24/2023 | Lead, total                        | 0.0005 UJ  | mg/L         |
| 08      | Background | E002  | 08/24/2023 | Lithium, total                     | 0.0140     | mg/L         |
| 08      | Background | E002  | 08/24/2023 | Mercury, total                     | 0.000079 U | mg/L         |
| 08      | Background | E002  | 08/24/2023 | Molybdenum, total                  | 0.0025 U   | mg/L         |
| 08      | Background | E002  | 08/24/2023 | Oxidation Reduction Potential      | 189        | mV           |
| 08      | Background | E002  | 08/24/2023 | pH (field)                         | 6.7        | SU           |
| 08      | Background | E002  | 08/24/2023 | Radium 226 + Radium 228, total     | 0.572      | pCi/L        |
| 08      | Background | E002  | 08/24/2023 | Selenium, total                    | 0.00098 U  | mg/L         |



**TABLE 1.**  
**FIELD PARAMETERS AND ANALYTICAL RESULTS - QUARTER 3, 2023**

845 QUARTERLY REPORT  
 HENNEPIN POWER PLANT  
 ASH POND NO. 2 AND ASH POND NO. 4  
 HENNEPIN, IL

| Well ID | Well Type  | Event | Date       | Parameter                          | Result     | Unit         |
|---------|------------|-------|------------|------------------------------------|------------|--------------|
| 08      | Background | E002  | 08/24/2023 | Specific Conductance @ 25C (field) | 1,241      | micromhos/cm |
| 08      | Background | E002  | 08/24/2023 | Sulfate, total                     | 100        | mg/L         |
| 08      | Background | E002  | 08/24/2023 | Temperature                        | 14.7       | degrees C    |
| 08      | Background | E002  | 08/24/2023 | Thallium, total                    | 0.00057 U  | mg/L         |
| 08      | Background | E002  | 08/24/2023 | Total Dissolved Solids             | 1,100      | mg/L         |
| 08      | Background | E002  | 08/24/2023 | Turbidity, field                   | 3.49       | NTU          |
| 08D     | Background | E002  | 08/24/2023 | Antimony, total                    | 0.0013 U   | mg/L         |
| 08D     | Background | E002  | 08/24/2023 | Arsenic, total                     | 0.00110 J+ | mg/L         |
| 08D     | Background | E002  | 08/24/2023 | Barium, total                      | 0.120      | mg/L         |
| 08D     | Background | E002  | 08/24/2023 | Beryllium, total                   | 0.00053 U  | mg/L         |
| 08D     | Background | E002  | 08/24/2023 | Boron, total                       | 0.0510     | mg/L         |
| 08D     | Background | E002  | 08/24/2023 | Cadmium, total                     | 0.0005 UJ  | mg/L         |
| 08D     | Background | E002  | 08/24/2023 | Calcium, total                     | 200        | mg/L         |
| 08D     | Background | E002  | 08/24/2023 | Chloride, total                    | 310        | mg/L         |
| 08D     | Background | E002  | 08/24/2023 | Chromium, total                    | 0.0011 U   | mg/L         |
| 08D     | Background | E002  | 08/24/2023 | Cobalt, total                      | 0.00320    | mg/L         |
| 08D     | Background | E002  | 08/24/2023 | Dissolved Oxygen                   | 0.630      | mg/L         |
| 08D     | Background | E002  | 08/24/2023 | Fluoride, total                    | 0.19 U     | mg/L         |
| 08D     | Background | E002  | 08/24/2023 | Lead, total                        | 0.0005 UJ  | mg/L         |
| 08D     | Background | E002  | 08/24/2023 | Lithium, total                     | 0.0140     | mg/L         |
| 08D     | Background | E002  | 08/24/2023 | Mercury, total                     | 0.000079 U | mg/L         |
| 08D     | Background | E002  | 08/24/2023 | Molybdenum, total                  | 0.0025 U   | mg/L         |
| 08D     | Background | E002  | 08/24/2023 | Oxidation Reduction Potential      | 192        | mV           |
| 08D     | Background | E002  | 08/24/2023 | pH (field)                         | 6.6        | SU           |
| 08D     | Background | E002  | 08/24/2023 | Radium 226 + Radium 228, total     | 0.573      | pCi/L        |
| 08D     | Background | E002  | 08/24/2023 | Selenium, total                    | 0.00098 U  | mg/L         |
| 08D     | Background | E002  | 08/24/2023 | Specific Conductance @ 25C (field) | 1,435      | micromhos/cm |
| 08D     | Background | E002  | 08/24/2023 | Sulfate, total                     | 170        | mg/L         |
| 08D     | Background | E002  | 08/24/2023 | Temperature                        | 17.3       | degrees C    |
| 08D     | Background | E002  | 08/24/2023 | Thallium, total                    | 0.00057 U  | mg/L         |
| 08D     | Background | E002  | 08/24/2023 | Total Dissolved Solids             | 1,400      | mg/L         |
| 08D     | Background | E002  | 08/24/2023 | Turbidity, field                   | 4.32       | NTU          |
| 03R     | Compliance | E002  | 08/28/2023 | Antimony, total                    | 0.0013 U   | mg/L         |
| 03R     | Compliance | E002  | 08/28/2023 | Arsenic, total                     | 0.00058 J  | mg/L         |
| 03R     | Compliance | E002  | 08/28/2023 | Barium, total                      | 0.0570     | mg/L         |
| 03R     | Compliance | E002  | 08/28/2023 | Beryllium, total                   | 0.00053 U  | mg/L         |
| 03R     | Compliance | E002  | 08/28/2023 | Boron, total                       | 0.430      | mg/L         |
| 03R     | Compliance | E002  | 08/28/2023 | Cadmium, total                     | 0.00017 U  | mg/L         |
| 03R     | Compliance | E002  | 08/28/2023 | Calcium, total                     | 81.0       | mg/L         |
| 03R     | Compliance | E002  | 08/28/2023 | Chloride, total                    | 75.0       | mg/L         |
| 03R     | Compliance | E002  | 08/28/2023 | Chromium, total                    | 0.0011 U   | mg/L         |
| 03R     | Compliance | E002  | 08/28/2023 | Cobalt, total                      | 0.00041 J  | mg/L         |
| 03R     | Compliance | E002  | 08/28/2023 | Dissolved Oxygen                   | 0.210      | mg/L         |
| 03R     | Compliance | E002  | 08/28/2023 | Fluoride, total                    | 0.33 J     | mg/L         |
| 03R     | Compliance | E002  | 08/28/2023 | Lead, total                        | 0.00019 U  | mg/L         |
| 03R     | Compliance | E002  | 08/28/2023 | Lithium, total                     | 0.0180     | mg/L         |

**TABLE 1.**  
**FIELD PARAMETERS AND ANALYTICAL RESULTS - QUARTER 3, 2023**

845 QUARTERLY REPORT  
 HENNEPIN POWER PLANT  
 ASH POND NO. 2 AND ASH POND NO. 4  
 HENNEPIN, IL

| Well ID | Well Type  | Event | Date       | Parameter                          | Result     | Unit         |
|---------|------------|-------|------------|------------------------------------|------------|--------------|
| 03R     | Compliance | E002  | 08/28/2023 | Mercury, total                     | 0.000079 U | mg/L         |
| 03R     | Compliance | E002  | 08/28/2023 | Molybdenum, total                  | 0.0930     | mg/L         |
| 03R     | Compliance | E002  | 08/28/2023 | Oxidation Reduction Potential      | 127        | mV           |
| 03R     | Compliance | E002  | 08/28/2023 | pH (field)                         | 7.2        | SU           |
| 03R     | Compliance | E002  | 08/28/2023 | Radium 226 + Radium 228, total     | 0.821      | pCi/L        |
| 03R     | Compliance | E002  | 08/28/2023 | Selenium, total                    | 0.00370    | mg/L         |
| 03R     | Compliance | E002  | 08/28/2023 | Specific Conductance @ 25C (field) | 652        | micromhos/cm |
| 03R     | Compliance | E002  | 08/28/2023 | Sulfate, total                     | 78.0       | mg/L         |
| 03R     | Compliance | E002  | 08/28/2023 | Temperature                        | 18.3       | degrees C    |
| 03R     | Compliance | E002  | 08/28/2023 | Thallium, total                    | 0.00057 U  | mg/L         |
| 03R     | Compliance | E002  | 08/28/2023 | Total Dissolved Solids             | 540        | mg/L         |
| 03R     | Compliance | E002  | 08/28/2023 | Turbidity, field                   | 2.54       | NTU          |
| 18S     | Compliance | E002  | 08/28/2023 | Antimony, total                    | 0.0013 U   | mg/L         |
| 18S     | Compliance | E002  | 08/28/2023 | Arsenic, total                     | 0.00089 J  | mg/L         |
| 18S     | Compliance | E002  | 08/28/2023 | Barium, total                      | 0.0550     | mg/L         |
| 18S     | Compliance | E002  | 08/28/2023 | Beryllium, total                   | 0.00053 U  | mg/L         |
| 18S     | Compliance | E002  | 08/28/2023 | Boron, total                       | 2.00       | mg/L         |
| 18S     | Compliance | E002  | 08/28/2023 | Cadmium, total                     | 0.00017 U  | mg/L         |
| 18S     | Compliance | E002  | 08/28/2023 | Calcium, total                     | 85.0       | mg/L         |
| 18S     | Compliance | E002  | 08/28/2023 | Chloride, total                    | 74.0       | mg/L         |
| 18S     | Compliance | E002  | 08/28/2023 | Chromium, total                    | 0.0011 U   | mg/L         |
| 18S     | Compliance | E002  | 08/28/2023 | Cobalt, total                      | 0.0004 U   | mg/L         |
| 18S     | Compliance | E002  | 08/28/2023 | Dissolved Oxygen                   | 0.200      | mg/L         |
| 18S     | Compliance | E002  | 08/28/2023 | Fluoride, total                    | 0.24 J     | mg/L         |
| 18S     | Compliance | E002  | 08/28/2023 | Lead, total                        | 0.00019 U  | mg/L         |
| 18S     | Compliance | E002  | 08/28/2023 | Lithium, total                     | 0.0490     | mg/L         |
| 18S     | Compliance | E002  | 08/28/2023 | Mercury, total                     | 0.000079 U | mg/L         |
| 18S     | Compliance | E002  | 08/28/2023 | Molybdenum, total                  | 0.150      | mg/L         |
| 18S     | Compliance | E002  | 08/28/2023 | Oxidation Reduction Potential      | 94.1       | mV           |
| 18S     | Compliance | E002  | 08/28/2023 | pH (field)                         | 7.4        | SU           |
| 18S     | Compliance | E002  | 08/28/2023 | Radium 226 + Radium 228, total     | 0.517      | pCi/L        |
| 18S     | Compliance | E002  | 08/28/2023 | Selenium, total                    | 0.0190     | mg/L         |
| 18S     | Compliance | E002  | 08/28/2023 | Specific Conductance @ 25C (field) | 661        | micromhos/cm |
| 18S     | Compliance | E002  | 08/28/2023 | Sulfate, total                     | 120        | mg/L         |
| 18S     | Compliance | E002  | 08/28/2023 | Temperature                        | 16.8       | degrees C    |
| 18S     | Compliance | E002  | 08/28/2023 | Thallium, total                    | 0.00057 U  | mg/L         |
| 18S     | Compliance | E002  | 08/28/2023 | Total Dissolved Solids             | 550        | mg/L         |
| 18S     | Compliance | E002  | 08/28/2023 | Turbidity, field                   | 2.46       | NTU          |
| 18D     | Compliance | E002  | 08/23/2023 | Antimony, total                    | 0.0013 U   | mg/L         |
| 18D     | Compliance | E002  | 08/23/2023 | Arsenic, total                     | 0.00088 J  | mg/L         |
| 18D     | Compliance | E002  | 08/23/2023 | Barium, total                      | 0.0680     | mg/L         |
| 18D     | Compliance | E002  | 08/23/2023 | Beryllium, total                   | 0.00053 U  | mg/L         |
| 18D     | Compliance | E002  | 08/23/2023 | Boron, total                       | 1.10       | mg/L         |
| 18D     | Compliance | E002  | 08/23/2023 | Cadmium, total                     | 0.0004 J   | mg/L         |
| 18D     | Compliance | E002  | 08/23/2023 | Calcium, total                     | 90.0       | mg/L         |
| 18D     | Compliance | E002  | 08/23/2023 | Chloride, total                    | 74.0       | mg/L         |

**TABLE 1.**  
**FIELD PARAMETERS AND ANALYTICAL RESULTS - QUARTER 3, 2023**

845 QUARTERLY REPORT  
 HENNEPIN POWER PLANT  
 ASH POND NO. 2 AND ASH POND NO. 4  
 HENNEPIN, IL

| Well ID | Well Type  | Event | Date       | Parameter                          | Result     | Unit         |
|---------|------------|-------|------------|------------------------------------|------------|--------------|
| 18D     | Compliance | E002  | 08/23/2023 | Chromium, total                    | 0.0011 U   | mg/L         |
| 18D     | Compliance | E002  | 08/23/2023 | Cobalt, total                      | 0.00180    | mg/L         |
| 18D     | Compliance | E002  | 08/23/2023 | Dissolved Oxygen                   | 0.170      | mg/L         |
| 18D     | Compliance | E002  | 08/23/2023 | Fluoride, total                    | 0.24 J     | mg/L         |
| 18D     | Compliance | E002  | 08/23/2023 | Lead, total                        | 0.0005 UJ  | mg/L         |
| 18D     | Compliance | E002  | 08/23/2023 | Lithium, total                     | 0.0270     | mg/L         |
| 18D     | Compliance | E002  | 08/23/2023 | Mercury, total                     | 0.000079 U | mg/L         |
| 18D     | Compliance | E002  | 08/23/2023 | Molybdenum, total                  | 0.0330     | mg/L         |
| 18D     | Compliance | E002  | 08/23/2023 | Oxidation Reduction Potential      | 68.2       | mV           |
| 18D     | Compliance | E002  | 08/23/2023 | pH (field)                         | 7.2        | SU           |
| 18D     | Compliance | E002  | 08/23/2023 | Radium 226 + Radium 228, total     | 0.611      | pCi/L        |
| 18D     | Compliance | E002  | 08/23/2023 | Selenium, total                    | 0.00098 U  | mg/L         |
| 18D     | Compliance | E002  | 08/23/2023 | Specific Conductance @ 25C (field) | 685        | micromhos/cm |
| 18D     | Compliance | E002  | 08/23/2023 | Sulfate, total                     | 98.0       | mg/L         |
| 18D     | Compliance | E002  | 08/23/2023 | Temperature                        | 21.2       | degrees C    |
| 18D     | Compliance | E002  | 08/23/2023 | Thallium, total                    | 0.00057 U  | mg/L         |
| 18D     | Compliance | E002  | 08/23/2023 | Total Dissolved Solids             | 540        | mg/L         |
| 18D     | Compliance | E002  | 08/23/2023 | Turbidity, field                   | 10.3       | NTU          |
| 45S     | Compliance | E002  | 08/28/2023 | Antimony, total                    | 0.0013 U   | mg/L         |
| 45S     | Compliance | E002  | 08/28/2023 | Arsenic, total                     | 0.00110    | mg/L         |
| 45S     | Compliance | E002  | 08/28/2023 | Barium, total                      | 0.0820     | mg/L         |
| 45S     | Compliance | E002  | 08/28/2023 | Beryllium, total                   | 0.00053 U  | mg/L         |
| 45S     | Compliance | E002  | 08/28/2023 | Boron, total                       | 0.240      | mg/L         |
| 45S     | Compliance | E002  | 08/28/2023 | Cadmium, total                     | 0.00110 J+ | mg/L         |
| 45S     | Compliance | E002  | 08/28/2023 | Calcium, total                     | 81.0       | mg/L         |
| 45S     | Compliance | E002  | 08/28/2023 | Chloride, total                    | 91.0       | mg/L         |
| 45S     | Compliance | E002  | 08/28/2023 | Chromium, total                    | 0.0011 U   | mg/L         |
| 45S     | Compliance | E002  | 08/28/2023 | Cobalt, total                      | 0.00210    | mg/L         |
| 45S     | Compliance | E002  | 08/28/2023 | Dissolved Oxygen                   | 0.170      | mg/L         |
| 45S     | Compliance | E002  | 08/28/2023 | Fluoride, total                    | 0.31 J     | mg/L         |
| 45S     | Compliance | E002  | 08/28/2023 | Lead, total                        | 0.00120 J+ | mg/L         |
| 45S     | Compliance | E002  | 08/28/2023 | Lithium, total                     | 0.0130     | mg/L         |
| 45S     | Compliance | E002  | 08/28/2023 | Mercury, total                     | 0.0002 UJ  | mg/L         |
| 45S     | Compliance | E002  | 08/28/2023 | Molybdenum, total                  | 0.0530     | mg/L         |
| 45S     | Compliance | E002  | 08/28/2023 | Oxidation Reduction Potential      | 120        | mV           |
| 45S     | Compliance | E002  | 08/28/2023 | pH (field)                         | 7.2        | SU           |
| 45S     | Compliance | E002  | 08/28/2023 | Radium 226 + Radium 228, total     | 0.687      | pCi/L        |
| 45S     | Compliance | E002  | 08/28/2023 | Selenium, total                    | 0.00098 U  | mg/L         |
| 45S     | Compliance | E002  | 08/28/2023 | Specific Conductance @ 25C (field) | 640        | micromhos/cm |
| 45S     | Compliance | E002  | 08/28/2023 | Sulfate, total                     | 77.0       | mg/L         |
| 45S     | Compliance | E002  | 08/28/2023 | Temperature                        | 19.1       | degrees C    |
| 45S     | Compliance | E002  | 08/28/2023 | Thallium, total                    | 0.00057 U  | mg/L         |
| 45S     | Compliance | E002  | 08/28/2023 | Total Dissolved Solids             | 570        | mg/L         |
| 45S     | Compliance | E002  | 08/28/2023 | Turbidity, field                   | 55.7       | NTU          |

**TABLE 1.**  
**FIELD PARAMETERS AND ANALYTICAL RESULTS - QUARTER 3, 2023**

845 QUARTERLY REPORT  
HENNEPIN POWER PLANT  
ASH POND NO. 2 AND ASH POND NO. 4  
HENNEPIN, IL

**Notes:**

C = Celsius

cm = centimeter

mg/L = milligrams per liter

mV = millivolts

NTU = Nephelometric Turbidity Units

pCi/L = picocuries per liter

SU = Standard Units

J = The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

J+ = The result is an estimated quantity, but the result may be biased high.

U = The analyte was analyzed for, but was not detected above the level of the adjusted detection limit or quantitation limit, as appropriate.

UJ = The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

**TABLE 2.**  
**COMPARISON OF STATISTICAL RESULTS TO GWPS - QUARTER 2, 2023**

845 QUARTERLY REPORT  
 HENNEPIN POWER PLANT  
 ASH POND NO. 2 AND ASH POND NO. 4  
 HENNEPIN, IL

| Well ID | HSU | Event | Parameter                      | Units | Date Range          | Sample Count | Percent ND | Statistical Calculation | Statistical Result | GWPS   | GWPS Source   | Exceedance Type |
|---------|-----|-------|--------------------------------|-------|---------------------|--------------|------------|-------------------------|--------------------|--------|---------------|-----------------|
| 03R     | UA  | E001  | Antimony, total                | mg/L  | 12/09/15 - 05/31/23 | 22           | 100        | All ND - Last           | 0.001              | 0.006  | Standard      | No Exceedance   |
| 03R     | UA  | E001  | Arsenic, total                 | mg/L  | 12/09/15 - 05/31/23 | 23           | 100        | All ND - Last           | 0.01               | 0.01   | Standard      | No Exceedance   |
| 03R     | UA  | E001  | Barium, total                  | mg/L  | 12/09/15 - 05/31/23 | 25           | 0          | CI around mean          | 0.0623             | 2      | Standard      | No Exceedance   |
| 03R     | UA  | E001  | Beryllium, total               | mg/L  | 12/09/15 - 05/31/23 | 22           | 100        | All ND - Last           | 0.0005             | 0.004  | Standard      | No Exceedance   |
| 03R     | UA  | E001  | Boron, total                   | mg/L  | 12/09/15 - 05/31/23 | 29           | 0          | CB around linear reg    | 0.566              | 2      | Standard      | No Exceedance   |
| 03R     | UA  | E001  | Cadmium, total                 | mg/L  | 12/09/15 - 05/31/23 | 24           | 92         | CI around median        | 0.001              | 0.005  | Standard      | No Exceedance   |
| 03R     | UA  | E001  | Chloride, total                | mg/L  | 12/09/15 - 05/31/23 | 29           | 0          | CB around linear reg    | 77.5               | 435    | Background    | No Exceedance   |
| 03R     | UA  | E001  | Chromium, total                | mg/L  | 12/09/15 - 05/31/23 | 23           | 91         | CB around T-S line      | 0.00148            | 0.1    | Standard      | No Exceedance   |
| 03R     | UA  | E001  | Cobalt, total                  | mg/L  | 12/09/15 - 05/31/23 | 24           | 96         | CI around median        | 0.001              | 0.038  | Background    | No Exceedance   |
| 03R     | UA  | E001  | Fluoride, total                | mg/L  | 12/09/15 - 05/31/23 | 26           | 0          | CI around mean          | 0.271              | 4      | Standard      | No Exceedance   |
| 03R     | UA  | E001  | Lead, total                    | mg/L  | 12/09/15 - 05/31/23 | 23           | 100        | All ND - Last           | 0.0075             | 0.0075 | Standard      | No Exceedance   |
| 03R     | UA  | E001  | Lithium, total                 | mg/L  | 12/09/15 - 05/31/23 | 28           | 0          | CI around mean          | 0.0247             | 0.04   | Standard      | No Exceedance   |
| 03R     | UA  | E001  | Mercury, total                 | mg/L  | 12/09/15 - 05/31/23 | 22           | 100        | All ND - Last           | 0.0002             | 0.002  | Standard      | No Exceedance   |
| 03R     | UA  | E001  | Molybdenum, total              | mg/L  | 12/09/15 - 05/31/23 | 28           | 0          | CB around linear reg    | 0.0999             | 0.1    | Standard      | No Exceedance   |
| 03R     | UA  | E001  | pH (field)                     | SU    | 12/09/15 - 05/31/23 | 32           | 0          | CB around T-S line      | 7.1/7.2            | 6.5/9  | Stnd/Standard | No Exceedance   |
| 03R     | UA  | E001  | Radium 226 + Radium 228, total | pCi/L | 12/09/15 - 05/31/23 | 23           | 0          | CI around median        | 0.26               | 5      | Standard      | No Exceedance   |
| 03R     | UA  | E001  | Selenium, total                | mg/L  | 12/09/15 - 05/31/23 | 25           | 0          | CI around mean          | 0.00504            | 0.05   | Standard      | No Exceedance   |
| 03R     | UA  | E001  | Sulfate, total                 | mg/L  | 12/09/15 - 05/31/23 | 28           | 0          | CB around linear reg    | 77.6               | 400    | Standard      | No Exceedance   |
| 03R     | UA  | E001  | Thallium, total                | mg/L  | 12/09/15 - 05/31/23 | 22           | 100        | All ND - Last           | 0.002              | 0.002  | Standard      | No Exceedance   |
| 03R     | UA  | E001  | Total Dissolved Solids         | mg/L  | 12/09/15 - 05/31/23 | 29           | 0          | CI around mean          | 508                | 1,620  | Background    | No Exceedance   |
| 18S     | UA  | E001  | Antimony, total                | mg/L  | 12/09/15 - 05/31/23 | 22           | 100        | All ND - Last           | 0.001              | 0.006  | Standard      | No Exceedance   |
| 18S     | UA  | E001  | Arsenic, total                 | mg/L  | 12/09/15 - 05/31/23 | 23           | 96         | CI around median        | 0.001              | 0.01   | Standard      | No Exceedance   |
| 18S     | UA  | E001  | Barium, total                  | mg/L  | 12/09/15 - 05/31/23 | 25           | 0          | CB around linear reg    | 0.0513             | 2      | Standard      | No Exceedance   |
| 18S     | UA  | E001  | Beryllium, total               | mg/L  | 12/09/15 - 05/31/23 | 22           | 100        | All ND - Last           | 0.0005             | 0.004  | Standard      | No Exceedance   |
| 18S     | UA  | E001  | Boron, total                   | mg/L  | 12/09/15 - 05/31/23 | 29           | 0          | CB around T-S line      | 1.08               | 2      | Standard      | No Exceedance   |
| 18S     | UA  | E001  | Cadmium, total                 | mg/L  | 12/09/15 - 05/31/23 | 24           | 75         | CI around median        | 0.001              | 0.005  | Standard      | No Exceedance   |
| 18S     | UA  | E001  | Chloride, total                | mg/L  | 12/09/15 - 05/31/23 | 29           | 0          | CB around linear reg    | 68.8               | 435    | Background    | No Exceedance   |

**TABLE 2.**  
**COMPARISON OF STATISTICAL RESULTS TO GWPS - QUARTER 2, 2023**

845 QUARTERLY REPORT  
 HENNEPIN POWER PLANT  
 ASH POND NO. 2 AND ASH POND NO. 4  
 HENNEPIN, IL

| Well ID | HSU | Event | Parameter                      | Units | Date Range          | Sample Count | Percent ND | Statistical Calculation | Statistical Result | GWPS   | GWPS Source   | Exceedance Type |
|---------|-----|-------|--------------------------------|-------|---------------------|--------------|------------|-------------------------|--------------------|--------|---------------|-----------------|
| 18S     | UA  | E001  | Chromium, total                | mg/L  | 12/09/15 - 05/31/23 | 24           | 54         | CI around median        | 0.0015             | 0.1    | Standard      | No Exceedance   |
| 18S     | UA  | E001  | Cobalt, total                  | mg/L  | 12/09/15 - 05/31/23 | 24           | 82         | CI around median        | 0.001              | 0.038  | Background    | No Exceedance   |
| 18S     | UA  | E001  | Fluoride, total                | mg/L  | 12/09/15 - 05/31/23 | 26           | 0          | CB around linear reg    | 0.168              | 4      | Standard      | No Exceedance   |
| 18S     | UA  | E001  | Lead, total                    | mg/L  | 12/09/15 - 05/31/23 | 23           | 100        | All ND - Last           | 0.0075             | 0.0075 | Standard      | No Exceedance   |
| 18S     | UA  | E001  | Lithium, total                 | mg/L  | 12/09/15 - 05/31/23 | 28           | 0          | CB around linear reg    | 0.0383             | 0.04   | Standard      | No Exceedance   |
| 18S     | UA  | E001  | Mercury, total                 | mg/L  | 12/09/15 - 05/31/23 | 22           | 100        | All ND - Last           | 0.0002             | 0.002  | Standard      | No Exceedance   |
| 18S     | UA  | E001  | Molybdenum, total              | mg/L  | 12/09/15 - 05/31/23 | 28           | 0          | CB around T-S line      | 0.0865             | 0.1    | Standard      | No Exceedance   |
| 18S     | UA  | E001  | pH (field)                     | SU    | 12/09/15 - 05/31/23 | 32           | 0          | CB around T-S line      | 7.2/7.3            | 6.5/9  | Stnd/Standard | No Exceedance   |
| 18S     | UA  | E001  | Radium 226 + Radium 228, total | pCi/L | 12/09/15 - 05/31/23 | 23           | 0          | CI around mean          | 0.307              | 5      | Standard      | No Exceedance   |
| 18S     | UA  | E001  | Selenium, total                | mg/L  | 12/09/15 - 05/31/23 | 25           | 3          | CB around T-S line      | 0.00118            | 0.05   | Standard      | No Exceedance   |
| 18S     | UA  | E001  | Sulfate, total                 | mg/L  | 12/09/15 - 05/31/23 | 29           | 0          | CB around T-S line      | 86.7               | 400    | Standard      | No Exceedance   |
| 18S     | UA  | E001  | Thallium, total                | mg/L  | 12/09/15 - 05/31/23 | 22           | 100        | All ND - Last           | 0.002              | 0.002  | Standard      | No Exceedance   |
| 18S     | UA  | E001  | Total Dissolved Solids         | mg/L  | 12/09/15 - 05/31/23 | 29           | 0          | CB around T-S line      | 470                | 1,620  | Background    | No Exceedance   |
| 18D     | UA  | E001  | Antimony, total                | mg/L  | 12/09/15 - 05/31/23 | 22           | 100        | All ND - Last           | 0.001              | 0.006  | Standard      | No Exceedance   |
| 18D     | UA  | E001  | Arsenic, total                 | mg/L  | 12/09/15 - 05/31/23 | 23           | 96         | CI around median        | 0.001              | 0.01   | Standard      | No Exceedance   |
| 18D     | UA  | E001  | Barium, total                  | mg/L  | 12/09/15 - 05/31/23 | 25           | 0          | CB around T-S line      | 0.0629             | 2      | Standard      | No Exceedance   |
| 18D     | UA  | E001  | Beryllium, total               | mg/L  | 12/09/15 - 05/31/23 | 22           | 100        | All ND - Last           | 0.0005             | 0.004  | Standard      | No Exceedance   |
| 18D     | UA  | E001  | Boron, total                   | mg/L  | 12/09/15 - 05/31/23 | 29           | 0          | CB around linear reg    | 1.31               | 2      | Standard      | No Exceedance   |
| 18D     | UA  | E001  | Cadmium, total                 | mg/L  | 12/09/15 - 05/31/23 | 24           | 93         | CI around median        | 0.001              | 0.005  | Standard      | No Exceedance   |
| 18D     | UA  | E001  | Chloride, total                | mg/L  | 12/09/15 - 05/31/23 | 29           | 0          | CI around mean          | 76.3               | 435    | Background    | No Exceedance   |
| 18D     | UA  | E001  | Chromium, total                | mg/L  | 12/09/15 - 05/31/23 | 23           | 93         | CB around T-S line      | 0.00144            | 0.1    | Standard      | No Exceedance   |
| 18D     | UA  | E001  | Cobalt, total                  | mg/L  | 12/09/15 - 05/31/23 | 25           | 3          | CB around linear reg    | 0.000406           | 0.038  | Background    | No Exceedance   |
| 18D     | UA  | E001  | Fluoride, total                | mg/L  | 12/09/15 - 05/31/23 | 26           | 0          | CI around mean          | 0.149              | 4      | Standard      | No Exceedance   |
| 18D     | UA  | E001  | Lead, total                    | mg/L  | 12/09/15 - 05/31/23 | 23           | 96         | CI around median        | 0.001              | 0.0075 | Standard      | No Exceedance   |
| 18D     | UA  | E001  | Lithium, total                 | mg/L  | 12/09/15 - 05/31/23 | 28           | 0          | CB around linear reg    | 0.023              | 0.04   | Standard      | No Exceedance   |
| 18D     | UA  | E001  | Mercury, total                 | mg/L  | 12/09/15 - 05/31/23 | 22           | 100        | All ND - Last           | 0.0002             | 0.002  | Standard      | No Exceedance   |
| 18D     | UA  | E001  | Molybdenum, total              | mg/L  | 12/09/15 - 05/31/23 | 28           | 0          | CI around median        | 0.0315             | 0.1    | Standard      | No Exceedance   |



**TABLE 2.**  
**COMPARISON OF STATISTICAL RESULTS TO GWPS - QUARTER 2, 2023**

845 QUARTERLY REPORT  
 HENNEPIN POWER PLANT  
 ASH POND NO. 2 AND ASH POND NO. 4  
 HENNEPIN, IL

| Well ID | HSU | Event | Parameter                      | Units | Date Range          | Sample Count | Percent ND | Statistical Calculation | Statistical Result | GWPS   | GWPS Source   | Exceedance Type |
|---------|-----|-------|--------------------------------|-------|---------------------|--------------|------------|-------------------------|--------------------|--------|---------------|-----------------|
| 18D     | UA  | E001  | pH (field)                     | SU    | 12/09/15 - 05/31/23 | 32           | 0          | CI around mean          | 7.1/7.2            | 6.5/9  | Stnd/Standard | No Exceedance   |
| 18D     | UA  | E001  | Radium 226 + Radium 228, total | pCi/L | 12/09/15 - 05/31/23 | 23           | 0          | CI around mean          | 0.513              | 5      | Standard      | No Exceedance   |
| 18D     | UA  | E001  | Selenium, total                | mg/L  | 12/09/15 - 05/31/23 | 24           | 93         | CI around median        | 0.001              | 0.05   | Standard      | No Exceedance   |
| 18D     | UA  | E001  | Sulfate, total                 | mg/L  | 12/09/15 - 05/31/23 | 29           | 0          | CB around linear reg    | 89.1               | 400    | Standard      | No Exceedance   |
| 18D     | UA  | E001  | Thallium, total                | mg/L  | 12/09/15 - 05/31/23 | 22           | 100        | All ND - Last           | 0.002              | 0.002  | Standard      | No Exceedance   |
| 18D     | UA  | E001  | Total Dissolved Solids         | mg/L  | 12/09/15 - 05/31/23 | 29           | 0          | CB around T-S line      | 461                | 1,620  | Background    | No Exceedance   |
| 45S     | UA  | E001  | Antimony, total                | mg/L  | 12/09/15 - 06/01/23 | 22           | 100        | All ND - Last           | 0.001              | 0.006  | Standard      | No Exceedance   |
| 45S     | UA  | E001  | Arsenic, total                 | mg/L  | 12/09/15 - 06/01/23 | 23           | 100        | All ND - Last           | 0.01               | 0.01   | Standard      | No Exceedance   |
| 45S     | UA  | E001  | Barium, total                  | mg/L  | 12/09/15 - 06/01/23 | 25           | 0          | CB around linear reg    | 0.0775             | 2      | Standard      | No Exceedance   |
| 45S     | UA  | E001  | Beryllium, total               | mg/L  | 12/09/15 - 06/01/23 | 22           | 100        | All ND - Last           | 0.0005             | 0.004  | Standard      | No Exceedance   |
| 45S     | UA  | E001  | Boron, total                   | mg/L  | 12/09/15 - 06/01/23 | 26           | 0          | CB around linear reg    | 0.223              | 2      | Standard      | No Exceedance   |
| 45S     | UA  | E001  | Cadmium, total                 | mg/L  | 12/09/15 - 06/01/23 | 24           | 50         | CB around linear reg    | 0.00054            | 0.005  | Standard      | No Exceedance   |
| 45S     | UA  | E001  | Chloride, total                | mg/L  | 12/09/15 - 06/01/23 | 26           | 0          | CB around linear reg    | 85.9               | 435    | Background    | No Exceedance   |
| 45S     | UA  | E001  | Chromium, total                | mg/L  | 12/09/15 - 06/01/23 | 24           | 92         | CB around T-S line      | 0.0015             | 0.1    | Standard      | No Exceedance   |
| 45S     | UA  | E001  | Cobalt, total                  | mg/L  | 12/09/15 - 06/01/23 | 25           | 16         | CI around geomean       | 0.00133            | 0.038  | Background    | No Exceedance   |
| 45S     | UA  | E001  | Fluoride, total                | mg/L  | 12/09/15 - 06/01/23 | 26           | 0          | CB around linear reg    | 0.248              | 4      | Standard      | No Exceedance   |
| 45S     | UA  | E001  | Lead, total                    | mg/L  | 12/09/15 - 06/01/23 | 23           | 91         | CI around median        | 0.001              | 0.0075 | Standard      | No Exceedance   |
| 45S     | UA  | E001  | Lithium, total                 | mg/L  | 12/09/15 - 06/01/23 | 25           | 0          | CB around linear reg    | 0.0109             | 0.04   | Standard      | No Exceedance   |
| 45S     | UA  | E001  | Mercury, total                 | mg/L  | 12/09/15 - 06/01/23 | 22           | 100        | All ND - Last           | 0.0002             | 0.002  | Standard      | No Exceedance   |
| 45S     | UA  | E001  | Molybdenum, total              | mg/L  | 12/09/15 - 06/01/23 | 25           | 0          | CB around linear reg    | 0.0433             | 0.1    | Standard      | No Exceedance   |
| 45S     | UA  | E001  | pH (field)                     | SU    | 12/09/15 - 06/01/23 | 26           | 0          | CI around mean          | 7.1/7.2            | 6.5/9  | Stnd/Standard | No Exceedance   |
| 45S     | UA  | E001  | Radium 226 + Radium 228, total | pCi/L | 12/09/15 - 06/01/23 | 23           | 0          | CI around geomean       | 0.501              | 5      | Standard      | No Exceedance   |
| 45S     | UA  | E001  | Selenium, total                | mg/L  | 12/09/15 - 06/01/23 | 24           | 100        | All ND - Last           | 0.001              | 0.05   | Standard      | No Exceedance   |
| 45S     | UA  | E001  | Sulfate, total                 | mg/L  | 12/09/15 - 06/01/23 | 26           | 0          | CI around median        | 70                 | 400    | Standard      | No Exceedance   |
| 45S     | UA  | E001  | Thallium, total                | mg/L  | 12/09/15 - 06/01/23 | 22           | 100        | All ND - Last           | 0.002              | 0.002  | Standard      | No Exceedance   |
| 45S     | UA  | E001  | Total Dissolved Solids         | mg/L  | 12/09/15 - 06/01/23 | 26           | 0          | CI around mean          | 521                | 1,620  | Background    | No Exceedance   |

**TABLE 2.**  
**COMPARISON OF STATISTICAL RESULTS TO GWPS - QUARTER 2, 2023**

845 QUARTERLY REPORT  
HENNEPIN POWER PLANT  
ASH POND NO. 2 AND ASH POND NO. 4  
HENNEPIN, IL

**Notes:**

Exceedance Type:

No Exceedance: No exceedance of the GWPS and no resample was collected.

HSU = hydrostratigraphic unit:

UA = Uppermost Aquifer

mg/L = milligrams per liter

ND = non-detect

pCi/L = picocuries per liter

SU = standard units

Sample Count = number of samples from Sampled Date Range used to calculate the Statistical Result

Statistical Calculation = method used to calculate the statistical result:

All ND - Last = All results were below the reporting limit, and the last determined reporting limit is shown

CB around T-S line = Confidence band around Thiel-Sen line

CB around linear reg = Confidence band around linear regression

CI around geomean = Confidence interval around the geometric mean

CI around mean = Confidence interval around the mean

CI around median = Confidence interval around the median

Statistical Result = calculated in accordance with Statistical Analysis Plan using constituent concentrations observed at monitoring well during all sampling events within the specified date range

For pH, the values presented are the lower / upper limits

GWPS = Groundwater Protection Standard

GWPS Source:

Standard = standard specified in 35 I.A.C. § 845.600(a)(1)

Background = background concentration (see cover page for additional information)



**TABLE 2.**  
**COMPARISON OF STATISTICAL RESULTS TO GWPS - QUARTER 3, 2023**

845 QUARTERLY REPORT  
 HENNEPIN POWER PLANT  
 ASH POND NO. 2 AND ASH POND NO. 4  
 HENNEPIN, IL

| Well ID | HSU | Event | Parameter                      | Units | Date Range          | Sample Count | Percent ND | Statistical Calculation | Statistical Result | GWPS    | GWPS Source       | Compliance Result |
|---------|-----|-------|--------------------------------|-------|---------------------|--------------|------------|-------------------------|--------------------|---------|-------------------|-------------------|
| 03R     | UA  | E002  | Antimony, total                | mg/L  | 12/09/15 - 08/28/23 | 23           | 100        | All ND - Last           | 0.003              | 0.006   | Standard          | No Exceedance     |
| 03R     | UA  | E002  | Arsenic, total                 | mg/L  | 12/09/15 - 08/28/23 | 24           | 100        | All ND - Last           | 0.001              | 0.010   | Standard          | No Exceedance     |
| 03R     | UA  | E002  | Barium, total                  | mg/L  | 12/09/15 - 08/28/23 | 26           | 0          | CI around mean          | 0.062              | 2.0     | Standard          | No Exceedance     |
| 03R     | UA  | E002  | Beryllium, total               | mg/L  | 12/09/15 - 08/28/23 | 23           | 100        | All ND - Last           | 0.001              | 0.004   | Standard          | No Exceedance     |
| 03R     | UA  | E002  | Boron, total                   | mg/L  | 12/09/15 - 08/28/23 | 30           | 0          | CB around linear reg    | 0.5                | 2       | Standard          | No Exceedance     |
| 03R     | UA  | E002  | Cadmium, total                 | mg/L  | 12/09/15 - 08/28/23 | 25           | 92         | CI around median        | 0.001              | 0.005   | Standard          | No Exceedance     |
| 03R     | UA  | E002  | Chloride, total                | mg/L  | 12/09/15 - 08/28/23 | 30           | 0          | CB around linear reg    | 76.7               | 435     | Background        | No Exceedance     |
| 03R     | UA  | E002  | Chromium, total                | mg/L  | 12/09/15 - 08/28/23 | 24           | 92         | CB around T-S line      | 0.0015             | 0.1     | Standard          | No Exceedance     |
| 03R     | UA  | E002  | Cobalt, total                  | mg/L  | 12/09/15 - 08/28/23 | 25           | 96         | CI around median        | 0.001              | 0.0380  | Background        | No Exceedance     |
| 03R     | UA  | E002  | Fluoride, total                | mg/L  | 12/09/15 - 08/28/23 | 27           | 4          | CI around geomean       | 0.27               | 4.0     | Standard          | No Exceedance     |
| 03R     | UA  | E002  | Lead, total                    | mg/L  | 12/09/15 - 08/28/23 | 24           | 100        | All ND - Last           | 0.0005             | 0.0075  | Standard          | No Exceedance     |
| 03R     | UA  | E002  | Lithium, total                 | mg/L  | 12/09/15 - 08/28/23 | 29           | 0          | CI around mean          | 0.0244             | 0.04    | Standard          | No Exceedance     |
| 03R     | UA  | E002  | Mercury, total                 | mg/L  | 12/09/15 - 08/28/23 | 23           | 100        | All ND - Last           | 0.0002             | 0.002   | Standard          | No Exceedance     |
| 03R     | UA  | E002  | Molybdenum, total              | mg/L  | 12/09/15 - 08/28/23 | 29           | 0          | CB around linear reg    | 0.0938             | 0.1     | Standard          | No Exceedance     |
| 03R     | UA  | E002  | pH (field)                     | SU    | 12/09/15 - 08/28/23 | 33           | 0          | CB around T-S line      | 7.0/7.2            | 6.5/9.0 | Standard/Standard | No Exceedance     |
| 03R     | UA  | E002  | Radium 226 + Radium 228, total | pCi/L | 12/09/15 - 08/28/23 | 24           | 0          | CI around median        | 0.27               | 5       | Standard          | No Exceedance     |
| 03R     | UA  | E002  | Selenium, total                | mg/L  | 12/09/15 - 08/28/23 | 26           | 0          | CI around mean          | 0.00497            | 0.05    | Standard          | No Exceedance     |
| 03R     | UA  | E002  | Sulfate, total                 | mg/L  | 12/09/15 - 08/28/23 | 29           | 0          | CB around linear reg    | 76.2               | 400     | Standard          | No Exceedance     |
| 03R     | UA  | E002  | Thallium, total                | mg/L  | 12/09/15 - 08/28/23 | 23           | 100        | All ND - Last           | 0.002              | 0.002   | Standard          | No Exceedance     |
| 03R     | UA  | E002  | Total Dissolved Solids         | mg/L  | 12/09/15 - 08/28/23 | 30           | 0          | CI around mean          | 509                | 1,620   | Background        | No Exceedance     |
| 18S     | UA  | E002  | Antimony, total                | mg/L  | 12/09/15 - 08/28/23 | 23           | 100        | All ND - Last           | 0.003              | 0.006   | Standard          | No Exceedance     |
| 18S     | UA  | E002  | Arsenic, total                 | mg/L  | 12/09/15 - 08/28/23 | 24           | 96         | CI around median        | 0.001              | 0.010   | Standard          | No Exceedance     |
| 18S     | UA  | E002  | Barium, total                  | mg/L  | 12/09/15 - 08/28/23 | 26           | 0          | CB around linear reg    | 0.0505             | 2.0     | Standard          | No Exceedance     |
| 18S     | UA  | E002  | Beryllium, total               | mg/L  | 12/09/15 - 08/28/23 | 23           | 100        | All ND - Last           | 0.001              | 0.004   | Standard          | No Exceedance     |
| 18S     | UA  | E002  | Boron, total                   | mg/L  | 12/09/15 - 08/28/23 | 30           | 0          | CB around T-S line      | 0.978              | 2       | Standard          | No Exceedance     |
| 18S     | UA  | E002  | Cadmium, total                 | mg/L  | 12/09/15 - 08/28/23 | 25           | 76         | CI around median        | 0.001              | 0.005   | Standard          | No Exceedance     |
| 18S     | UA  | E002  | Chloride, total                | mg/L  | 12/09/15 - 08/28/23 | 30           | 0          | CB around linear reg    | 69.2               | 435     | Background        | No Exceedance     |

**TABLE 2.**  
**COMPARISON OF STATISTICAL RESULTS TO GWPS - QUARTER 3, 2023**

845 QUARTERLY REPORT  
 HENNEPIN POWER PLANT  
 ASH POND NO. 2 AND ASH POND NO. 4  
 HENNEPIN, IL

| Well ID | HSU | Event | Parameter                      | Units | Date Range          | Sample Count | Percent ND | Statistical Calculation | Statistical Result | GWPS    | GWPS Source       | Compliance Result |
|---------|-----|-------|--------------------------------|-------|---------------------|--------------|------------|-------------------------|--------------------|---------|-------------------|-------------------|
| 18S     | UA  | E002  | Chromium, total                | mg/L  | 12/09/15 - 08/28/23 | 25           | 55         | CI around median        | 0.0015             | 0.1     | Standard          | No Exceedance     |
| 18S     | UA  | E002  | Cobalt, total                  | mg/L  | 12/09/15 - 08/28/23 | 25           | 83         | CI around median        | 0.001              | 0.0380  | Background        | No Exceedance     |
| 18S     | UA  | E002  | Fluoride, total                | mg/L  | 12/09/15 - 08/28/23 | 27           | 3          | CB around T-S line      | 0.168              | 4.0     | Standard          | No Exceedance     |
| 18S     | UA  | E002  | Lead, total                    | mg/L  | 12/09/15 - 08/28/23 | 24           | 100        | All ND - Last           | 0.0005             | 0.0075  | Standard          | No Exceedance     |
| 18S     | UA  | E002  | Lithium, total                 | mg/L  | 12/09/15 - 08/28/23 | 29           | 0          | CB around linear reg    | 0.0372             | 0.04    | Standard          | No Exceedance     |
| 18S     | UA  | E002  | Mercury, total                 | mg/L  | 12/09/15 - 08/28/23 | 23           | 100        | All ND - Last           | 0.0002             | 0.002   | Standard          | No Exceedance     |
| 18S     | UA  | E002  | Molybdenum, total              | mg/L  | 12/09/15 - 08/28/23 | 29           | 0          | CB around linear reg    | 0.0908             | 0.1     | Standard          | No Exceedance     |
| 18S     | UA  | E002  | pH (field)                     | SU    | 12/09/15 - 08/28/23 | 33           | 0          | CB around T-S line      | 7.2/7.3            | 6.5/9.0 | Standard/Standard | No Exceedance     |
| 18S     | UA  | E002  | Radium 226 + Radium 228, total | pCi/L | 12/09/15 - 08/28/23 | 24           | 0          | CI around mean          | 0.317              | 5       | Standard          | No Exceedance     |
| 18S     | UA  | E002  | Selenium, total                | mg/L  | 12/09/15 - 08/28/23 | 26           | 3          | CB around T-S line      | 0.00339            | 0.05    | Standard          | No Exceedance     |
| 18S     | UA  | E002  | Sulfate, total                 | mg/L  | 12/09/15 - 08/28/23 | 30           | 0          | CB around T-S line      | 89.8               | 400     | Standard          | No Exceedance     |
| 18S     | UA  | E002  | Thallium, total                | mg/L  | 12/09/15 - 08/28/23 | 23           | 100        | All ND - Last           | 0.002              | 0.002   | Standard          | No Exceedance     |
| 18S     | UA  | E002  | Total Dissolved Solids         | mg/L  | 12/09/15 - 08/28/23 | 30           | 0          | CB around T-S line      | 477                | 1,620   | Background        | No Exceedance     |
| 18D     | UA  | E002  | Antimony, total                | mg/L  | 12/09/15 - 08/23/23 | 23           | 100        | All ND - Last           | 0.003              | 0.006   | Standard          | No Exceedance     |
| 18D     | UA  | E002  | Arsenic, total                 | mg/L  | 12/09/15 - 08/23/23 | 24           | 96         | CI around median        | 0.001              | 0.010   | Standard          | No Exceedance     |
| 18D     | UA  | E002  | Barium, total                  | mg/L  | 12/09/15 - 08/23/23 | 26           | 0          | CB around T-S line      | 0.0613             | 2.0     | Standard          | No Exceedance     |
| 18D     | UA  | E002  | Beryllium, total               | mg/L  | 12/09/15 - 08/23/23 | 23           | 100        | All ND - Last           | 0.001              | 0.004   | Standard          | No Exceedance     |
| 18D     | UA  | E002  | Boron, total                   | mg/L  | 12/09/15 - 08/23/23 | 30           | 0          | CB around linear reg    | 1.25               | 2       | Standard          | No Exceedance     |
| 18D     | UA  | E002  | Cadmium, total                 | mg/L  | 12/09/15 - 08/23/23 | 25           | 93         | CI around median        | 0.001              | 0.005   | Standard          | No Exceedance     |
| 18D     | UA  | E002  | Chloride, total                | mg/L  | 12/09/15 - 08/23/23 | 30           | 0          | CI around mean          | 76.2               | 435     | Background        | No Exceedance     |
| 18D     | UA  | E002  | Chromium, total                | mg/L  | 12/09/15 - 08/23/23 | 24           | 93         | CB around T-S line      | 0.0015             | 0.1     | Standard          | No Exceedance     |
| 18D     | UA  | E002  | Cobalt, total                  | mg/L  | 12/09/15 - 08/23/23 | 26           | 3          | CB around linear reg    | 0.000289           | 0.0380  | Background        | No Exceedance     |
| 18D     | UA  | E002  | Fluoride, total                | mg/L  | 12/09/15 - 08/23/23 | 27           | 3          | CI around median        | 0.15               | 4.0     | Standard          | No Exceedance     |
| 18D     | UA  | E002  | Lead, total                    | mg/L  | 12/09/15 - 08/23/23 | 24           | 96         | CI around median        | 0.001              | 0.0075  | Standard          | No Exceedance     |
| 18D     | UA  | E002  | Lithium, total                 | mg/L  | 12/09/15 - 08/23/23 | 29           | 0          | CB around linear reg    | 0.0231             | 0.04    | Standard          | No Exceedance     |
| 18D     | UA  | E002  | Mercury, total                 | mg/L  | 12/09/15 - 08/23/23 | 23           | 100        | All ND - Last           | 0.0002             | 0.002   | Standard          | No Exceedance     |
| 18D     | UA  | E002  | Molybdenum, total              | mg/L  | 12/09/15 - 08/23/23 | 29           | 0          | CI around median        | 0.0315             | 0.1     | Standard          | No Exceedance     |

**TABLE 2.**  
**COMPARISON OF STATISTICAL RESULTS TO GWPS - QUARTER 3, 2023**

845 QUARTERLY REPORT  
 HENNEPIN POWER PLANT  
 ASH POND NO. 2 AND ASH POND NO. 4  
 HENNEPIN, IL

| Well ID | HSU | Event | Parameter                      | Units | Date Range          | Sample Count | Percent ND | Statistical Calculation | Statistical Result | GWPS    | GWPS Source       | Compliance Result |
|---------|-----|-------|--------------------------------|-------|---------------------|--------------|------------|-------------------------|--------------------|---------|-------------------|-------------------|
| 18D     | UA  | E002  | pH (field)                     | SU    | 12/09/15 - 08/23/23 | 33           | 0          | CI around mean          | 7.1/7.2            | 6.5/9.0 | Standard/Standard | No Exceedance     |
| 18D     | UA  | E002  | Radium 226 + Radium 228, total | pCi/L | 12/09/15 - 08/23/23 | 24           | 0          | CI around mean          | 0.518              | 5       | Standard          | No Exceedance     |
| 18D     | UA  | E002  | Selenium, total                | mg/L  | 12/09/15 - 08/23/23 | 25           | 93         | CI around median        | 0.001              | 0.05    | Standard          | No Exceedance     |
| 18D     | UA  | E002  | Sulfate, total                 | mg/L  | 12/09/15 - 08/23/23 | 30           | 0          | CB around linear reg    | 88.5               | 400     | Standard          | No Exceedance     |
| 18D     | UA  | E002  | Thallium, total                | mg/L  | 12/09/15 - 08/23/23 | 23           | 100        | All ND - Last           | 0.002              | 0.002   | Standard          | No Exceedance     |
| 18D     | UA  | E002  | Total Dissolved Solids         | mg/L  | 12/09/15 - 08/23/23 | 30           | 0          | CB around T-S line      | 468                | 1,620   | Background        | No Exceedance     |
| 45S     | UA  | E002  | Antimony, total                | mg/L  | 12/09/15 - 08/28/23 | 23           | 100        | All ND - Last           | 0.003              | 0.006   | Standard          | No Exceedance     |
| 45S     | UA  | E002  | Arsenic, total                 | mg/L  | 12/09/15 - 08/28/23 | 24           | 96         | CI around median        | 0.001              | 0.010   | Standard          | No Exceedance     |
| 45S     | UA  | E002  | Barium, total                  | mg/L  | 12/09/15 - 08/28/23 | 26           | 0          | CB around linear reg    | 0.0777             | 2.0     | Standard          | No Exceedance     |
| 45S     | UA  | E002  | Beryllium, total               | mg/L  | 12/09/15 - 08/28/23 | 23           | 100        | All ND - Last           | 0.001              | 0.004   | Standard          | No Exceedance     |
| 45S     | UA  | E002  | Boron, total                   | mg/L  | 12/09/15 - 08/28/23 | 27           | 0          | CB around linear reg    | 0.214              | 2       | Standard          | No Exceedance     |
| 45S     | UA  | E002  | Cadmium, total                 | mg/L  | 12/09/15 - 08/28/23 | 25           | 48         | CB around linear reg    | 0.000555           | 0.005   | Standard          | No Exceedance     |
| 45S     | UA  | E002  | Chloride, total                | mg/L  | 12/09/15 - 08/28/23 | 27           | 0          | CB around linear reg    | 85.8               | 435     | Background        | No Exceedance     |
| 45S     | UA  | E002  | Chromium, total                | mg/L  | 12/09/15 - 08/28/23 | 25           | 92         | CB around T-S line      | 0.0015             | 0.1     | Standard          | No Exceedance     |
| 45S     | UA  | E002  | Cobalt, total                  | mg/L  | 12/09/15 - 08/28/23 | 26           | 15         | CI around geomean       | 0.00135            | 0.0380  | Background        | No Exceedance     |
| 45S     | UA  | E002  | Fluoride, total                | mg/L  | 12/09/15 - 08/28/23 | 27           | 4          | CB around T-S line      | 0.25               | 4.0     | Standard          | No Exceedance     |
| 45S     | UA  | E002  | Lead, total                    | mg/L  | 12/09/15 - 08/28/23 | 24           | 88         | CB around T-S line      | 0.001              | 0.0075  | Standard          | No Exceedance     |
| 45S     | UA  | E002  | Lithium, total                 | mg/L  | 12/09/15 - 08/28/23 | 26           | 0          | CB around linear reg    | 0.0109             | 0.04    | Standard          | No Exceedance     |
| 45S     | UA  | E002  | Mercury, total                 | mg/L  | 12/09/15 - 08/28/23 | 23           | 100        | All ND - Last           | 0.0002             | 0.002   | Standard          | No Exceedance     |
| 45S     | UA  | E002  | Molybdenum, total              | mg/L  | 12/09/15 - 08/28/23 | 26           | 0          | CB around linear reg    | 0.0427             | 0.1     | Standard          | No Exceedance     |
| 45S     | UA  | E002  | pH (field)                     | SU    | 12/09/15 - 08/28/23 | 27           | 0          | CI around mean          | 7.1/7.2            | 6.5/9.0 | Standard/Standard | No Exceedance     |
| 45S     | UA  | E002  | Radium 226 + Radium 228, total | pCi/L | 12/09/15 - 08/28/23 | 24           | 0          | CI around geomean       | 0.508              | 5       | Standard          | No Exceedance     |
| 45S     | UA  | E002  | Selenium, total                | mg/L  | 12/09/15 - 08/28/23 | 25           | 100        | All ND - Last           | 0.0025             | 0.05    | Standard          | No Exceedance     |
| 45S     | UA  | E002  | Sulfate, total                 | mg/L  | 12/09/15 - 08/28/23 | 27           | 0          | CI around median        | 70                 | 400     | Standard          | No Exceedance     |
| 45S     | UA  | E002  | Thallium, total                | mg/L  | 12/09/15 - 08/28/23 | 23           | 100        | All ND - Last           | 0.002              | 0.002   | Standard          | No Exceedance     |
| 45S     | UA  | E002  | Total Dissolved Solids         | mg/L  | 12/09/15 - 08/28/23 | 27           | 0          | CI around mean          | 523                | 1,620   | Background        | No Exceedance     |

**TABLE 2.**  
**COMPARISON OF STATISTICAL RESULTS TO GWPS - QUARTER 3, 2023**

845 QUARTERLY REPORT  
HENNEPIN POWER PLANT  
ASH POND NO. 2 AND ASH POND NO. 4  
HENNEPIN, IL

**Notes:**

Compliance Result:

No Exceedance: the statistical result did not exceed the GWPS.

HSU = hydrostratigraphic unit:

UA = Uppermost Aquifer

mg/L = milligrams per liter

ND = non-detect

pCi/L = picocuries per liter

SU = standard units

Sample Count = number of samples from Sampled Date Range used to calculate the Statistical Result

Statistical Calculation = method used to calculate the statistical result:

All ND - Last = All results were below the reporting limit, and the last determined reporting limit is shown

CB around T-S line = Confidence band around Thiel-Sen line

CB around linear reg = Confidence band around linear regression

CI around geomean = Confidence interval around the geometric mean

CI around mean = Confidence interval around the mean

CI around median = Confidence interval around the median

Statistical Result = calculated in accordance with the Statistical Analysis Plan using constituent concentrations observed at each monitoring well during all sampling events within the specified date range

For pH, the values presented are the lower / upper limits

GWPS = Groundwater Protection Standard

GWPS Source:

Standard = standard specified in 35 I.A.C. § 845.600(a)(1)

Background = background concentration (see cover page for additional information)

## FIGURES





- BACKGROUND WELL
- COMPLIANCE WELL
- REGULATED UNIT (SUBJECT UNIT)
- SITE FEATURE
- LIMITS OF FINAL COVER
- PROPERTY BOUNDARY



**MONITORING WELL LOCATION MAP**

**2023 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT**  
**ASH POND NO.2 AND ASH POND NO.4**  
 HENNEPIN POWER PLANT  
 HENNEPIN, ILLINOIS

**FIGURE 1**







- COMPLIANCE WELL WITHOUT EXCEEDANCE
- REGULATED UNIT (SUBJECT UNIT)
- SITE FEATURE
- ▨ LIMITS OF FINAL COVER
- ⋯ PROPERTY BOUNDARY



**GWPS EXCEEDANCE MAP  
UPPERMOST AQUIFER  
QUARTERS 2-3, 2023**

**2023 ANNUAL GROUNDWATER  
MONITORING AND CORRECTIVE  
ACTION REPORT  
ASH POND NO.2 AND ASH POND NO.4  
HENNEPIN POWER PLANT  
HENNEPIN, ILLINOIS**

**FIGURE 2**







- COMPLIANCE MONITORING WELL
- BACKGROUND MONITORING WELL
- MONITORING WELL
- PORE WATER WELL
- STAFF GAGE, CCR UNIT
- GROUNDWATER ELEVATION CONTOUR (1 FT CONTOUR INTERVAL, NAVD88)
- INFERRED GROUNDWATER ELEVATION CONTOUR
- GROUNDWATER FLOW DIRECTION
- REGULATED UNIT (SUBJECT UNIT)
- SITE FEATURE
- LIMITS OF FINAL COVER
- PROPERTY BOUNDARY

**NOTES:**

- ELEVATIONS IN PARENTHESES WERE NOT USED FOR CONTOURING.
- ELEVATION CONTOURS SHOWN IN FEET, NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88)

\*ILLINOIS RIVER ELEVATION OBTAINED FROM STAFF GAGE SG02, LOCATED AT THE HENNEPIN POWER PLANT



**POTENTIOMETRIC SURFACE MAP  
APRIL 30, 2023**

**2023 ANNUAL GROUNDWATER  
MONITORING AND CORRECTIVE  
ACTION REPORT  
ASH POND NO.2 AND ASH POND NO.4  
HENNEPIN POWER PLANT  
HENNEPIN, ILLINOIS**

**FIGURE 3**







- COMPLIANCE MONITORING WELL
- BACKGROUND MONITORING WELL
- MONITORING WELL
- PORE WATER WELL
- STAFF GAGE, CCR UNIT
- GROUNDWATER ELEVATION CONTOUR (1 FT CONTOUR INTERVAL, NAVD88)
- INFERRED GROUNDWATER ELEVATION CONTOUR
- GROUNDWATER FLOW DIRECTION
- REGULATED UNIT (SUBJECT UNIT)
- SITE FEATURE
- LIMITS OF FINAL COVER
- PROPERTY BOUNDARY

**NOTES:**  
 1. ELEVATIONS IN PARENTHESES WERE NOT USED FOR CONTOURING.  
 2. ELEVATION CONTOURS SHOWN IN FEET, NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88)  
 \*ILLINOIS RIVER ELEVATION OBTAINED FROM STAFF GAGE SG02, LOCATED AT THE HENNEPIN POWER PLANT



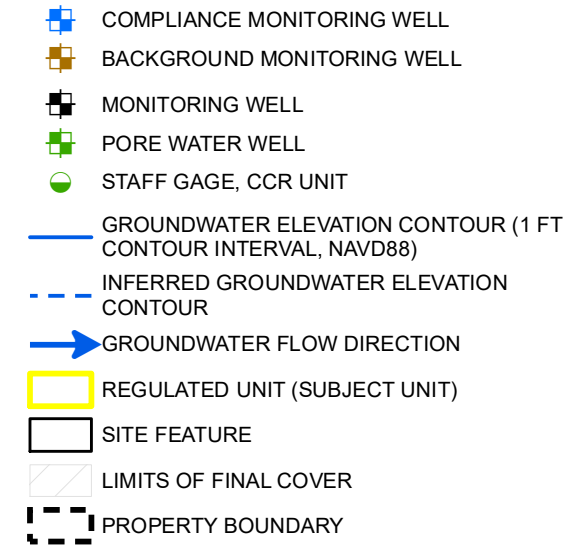
**POTENTIOMETRIC SURFACE MAP  
MAY 30, 2023**

**2023 ANNUAL GROUNDWATER  
MONITORING AND CORRECTIVE  
ACTION REPORT  
ASH POND NO.2 AND ASH POND NO.4  
HENNEPIN POWER PLANT  
HENNEPIN, ILLINOIS**

**FIGURE 4**







**NOTES:**  
 1. ELEVATIONS IN PARENTHESES WERE NOT USED FOR CONTOURING.  
 2. ELEVATION CONTOURS SHOWN IN FEET, NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88)  
 \*ILLINOIS RIVER ELEVATION OBTAINED FROM STAFF GAGE SG02, LOCATED AT THE HENNEPIN POWER PLANT



**POTENTIOMETRIC SURFACE MAP  
 JUNE 21, 2023**

**2023 ANNUAL GROUNDWATER  
 MONITORING AND CORRECTIVE  
 ACTION REPORT  
 ASH POND NO.2 AND ASH POND NO.4  
 HENNEPIN POWER PLANT  
 HENNEPIN, ILLINOIS**

**FIGURE 5**







- COMPLIANCE MONITORING WELL
- BACKGROUND MONITORING WELL
- MONITORING WELL
- PORE WATER WELL
- STAFF GAGE, CCR UNIT
- GROUNDWATER ELEVATION CONTOUR (1 FT CONTOUR INTERVAL, NAVD88)
- INFERRED GROUNDWATER ELEVATION CONTOUR
- GROUNDWATER FLOW DIRECTION
- REGULATED UNIT (SUBJECT UNIT)
- SITE FEATURE
- LIMITS OF FINAL COVER
- PROPERTY BOUNDARY

**NOTES:**  
 1. ELEVATIONS IN PARENTHESES WERE NOT USED FOR CONTOURING.  
 2. ELEVATION CONTOURS SHOWN IN FEET, NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88)  
 \*ILLINOIS RIVER ELEVATION OBTAINED FROM STAFF GAGE SG02, LOCATED AT THE HENNEPIN POWER PLANT



**POTENTIOMETRIC SURFACE MAP  
 JULY 21, 2023**

**2023 ANNUAL GROUNDWATER  
 MONITORING AND CORRECTIVE  
 ACTION REPORT  
 ASH POND NO.2 AND ASH POND NO.4  
 HENNEPIN POWER PLANT  
 HENNEPIN, ILLINOIS**

**FIGURE 6**







- COMPLIANCE MONITORING WELL
- BACKGROUND MONITORING WELL
- MONITORING WELL
- PORE WATER WELL
- STAFF GAGE, CCR UNIT
- GROUNDWATER ELEVATION CONTOUR (1 FT CONTOUR INTERVAL, NAVD88)
- - - INFERRED GROUNDWATER ELEVATION CONTOUR
- GROUNDWATER FLOW DIRECTION
- REGULATED UNIT (SUBJECT UNIT)
- SITE FEATURE
- LIMITS OF FINAL COVER
- PROPERTY BOUNDARY

**NOTES:**  
 1. ELEVATIONS IN PARENTHESES WERE NOT USED FOR CONTOURING.  
 2. ELEVATION CONTOURS SHOWN IN FEET, NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88)  
 \*ILLINOIS RIVER ELEVATION OBTAINED FROM STAFF GAGE SG02, LOCATED AT THE HENNEPIN POWER PLANT



**POTENTIOMETRIC SURFACE MAP  
 AUGUST 21, 2023**

**2023 ANNUAL GROUNDWATER  
 MONITORING AND CORRECTIVE  
 ACTION REPORT  
 ASH POND NO.2 AND ASH POND NO.4  
 HENNEPIN POWER PLANT  
 HENNEPIN, ILLINOIS**

**FIGURE 7**







- COMPLIANCE MONITORING WELL
- BACKGROUND MONITORING WELL
- MONITORING WELL
- PORE WATER WELL
- STAFF GAGE, CCR UNIT
- GROUNDWATER ELEVATION CONTOUR (1 FT CONTOUR INTERVAL, NAVD88)
- INFERRED GROUNDWATER ELEVATION CONTOUR
- GROUNDWATER FLOW DIRECTION
- REGULATED UNIT (SUBJECT UNIT)
- SITE FEATURE
- LIMITS OF FINAL COVER
- PROPERTY BOUNDARY

**NOTES:**  
 1. ELEVATIONS IN PARENTHESES WERE NOT USED FOR CONTOURING.  
 2. ELEVATION CONTOURS SHOWN IN FEET, NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88)  
 \*ILLINOIS RIVER ELEVATION OBTAINED FROM STAFF GAGE SG02, LOCATED AT THE HENNEPIN POWER PLANT

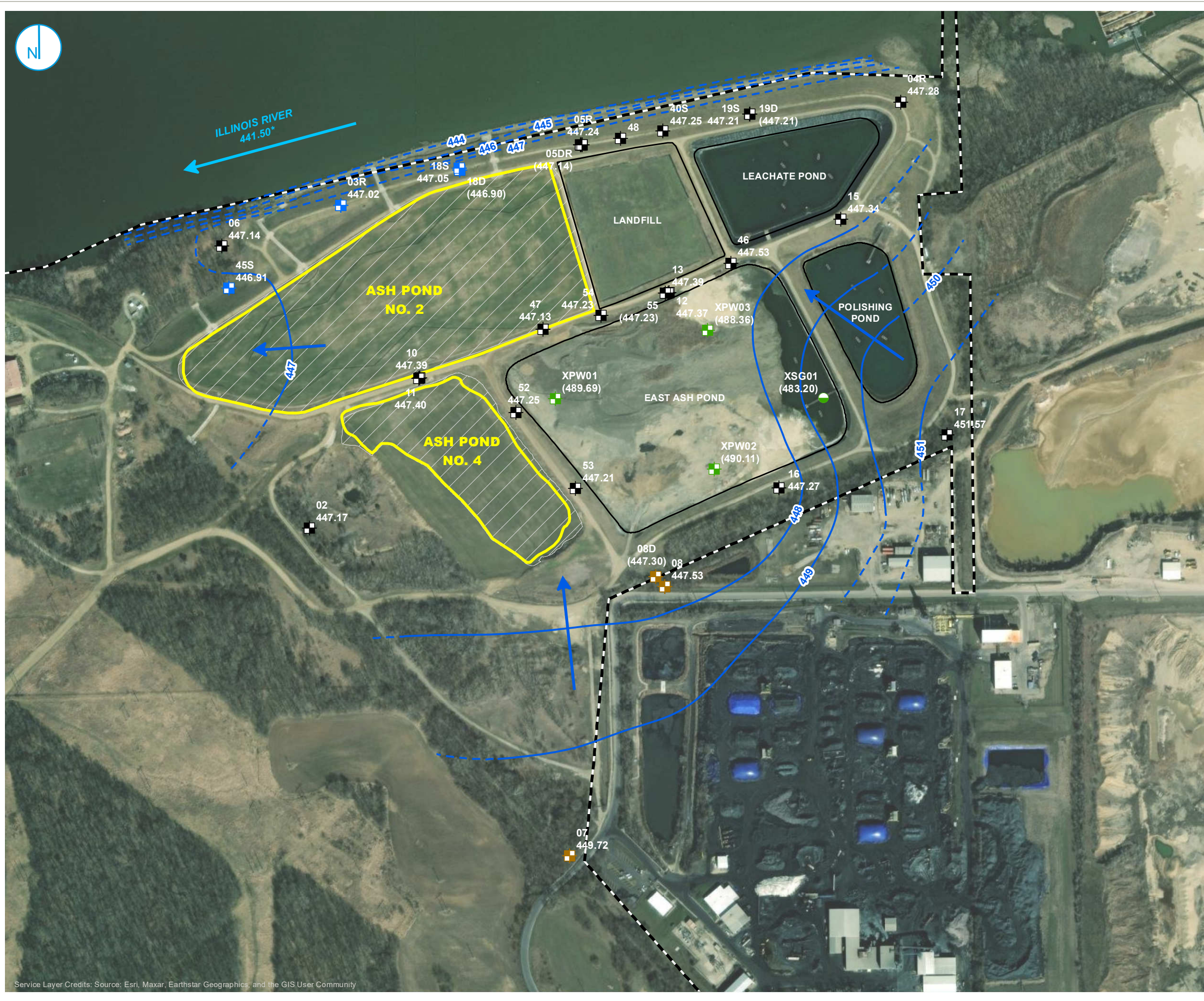


**POTENTIOMETRIC SURFACE MAP  
 SEPTEMBER 30, 2023**

**2023 ANNUAL GROUNDWATER  
 MONITORING AND CORRECTIVE  
 ACTION REPORT  
 ASH POND NO.2 AND ASH POND NO.4  
 HENNEPIN POWER PLANT  
 HENNEPIN, ILLINOIS**

**FIGURE 8**





- COMPLIANCE MONITORING WELL
- BACKGROUND MONITORING WELL
- MONITORING WELL
- PORE WATER WELL
- STAFF GAGE, CCR UNIT
- GROUNDWATER ELEVATION CONTOUR (1 FT CONTOUR INTERVAL, NAVD88)
- INFERRED GROUNDWATER ELEVATION CONTOUR
- GROUNDWATER FLOW DIRECTION
- REGULATED UNIT (SUBJECT UNIT)
- SITE FEATURE
- LIMITS OF FINAL COVER
- PROPERTY BOUNDARY

**NOTES:**  
 1. ELEVATIONS IN PARENTHESES WERE NOT USED FOR CONTOURING.  
 2. ELEVATION CONTOURS SHOWN IN FEET, NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88)  
 \*ILLINOIS RIVER ELEVATION OBTAINED FROM STAFF GAGE SG02, LOCATED AT THE HENNEPIN POWER PLANT



**POTENTIOMETRIC SURFACE MAP  
 OCTOBER 31, 2023**

**2023 ANNUAL GROUNDWATER  
 MONITORING AND CORRECTIVE  
 ACTION REPORT  
 ASH POND NO.2 AND ASH POND NO.4  
 HENNEPIN POWER PLANT  
 HENNEPIN, ILLINOIS**

**FIGURE 9**







- COMPLIANCE MONITORING WELL
- BACKGROUND MONITORING WELL
- MONITORING WELL
- PORE WATER WELL
- STAFF GAGE, CCR UNIT
- GROUNDWATER ELEVATION CONTOUR (1 FT CONTOUR INTERVAL, NAVD88)
- INFERRED GROUNDWATER ELEVATION CONTOUR
- GROUNDWATER FLOW DIRECTION
- REGULATED UNIT (SUBJECT UNIT)
- SITE FEATURE
- LIMITS OF FINAL COVER
- PROPERTY BOUNDARY

**NOTES:**  
 1. ELEVATIONS IN PARENTHESES WERE NOT USED FOR CONTOURING.  
 2. ELEVATION CONTOURS SHOWN IN FEET, NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88)  
 \*ILLINOIS RIVER ELEVATION OBTAINED FROM STAFF GAGE SG02, LOCATED AT THE HENNEPIN POWER PLANT



**POTENTIOMETRIC SURFACE MAP  
 NOVEMBER 11, 2023**

**2023 ANNUAL GROUNDWATER  
 MONITORING AND CORRECTIVE  
 ACTION REPORT  
 ASH POND NO.2 AND ASH POND NO.4  
 HENNEPIN POWER PLANT  
 HENNEPIN, ILLINOIS**

**FIGURE 10**







- COMPLIANCE MONITORING WELL
- BACKGROUND MONITORING WELL
- MONITORING WELL
- PORE WATER WELL
- STAFF GAGE, CCR UNIT
- GROUNDWATER ELEVATION CONTOUR (1 FT CONTOUR INTERVAL, NAVD88)
- - - INFERRED GROUNDWATER ELEVATION CONTOUR
- GROUNDWATER FLOW DIRECTION
- REGULATED UNIT (SUBJECT UNIT)
- SITE FEATURE
- LIMITS OF FINAL COVER
- PROPERTY BOUNDARY

**NOTES:**  
 1. ELEVATIONS IN PARENTHESES WERE NOT USED FOR CONTOURING.  
 2. ELEVATION CONTOURS SHOWN IN FEET, NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88)  
 \*ILLINOIS RIVER ELEVATION OBTAINED FROM STAFF GAGE SG02, LOCATED AT THE HENNEPIN POWER PLANT



**POTENTIOMETRIC SURFACE MAP  
 DECEMBER 21, 2023**

**2023 ANNUAL GROUNDWATER  
 MONITORING AND CORRECTIVE  
 ACTION REPORT  
 ASH POND NO.2 AND ASH POND NO.4  
 HENNEPIN POWER PLANT  
 HENNEPIN, ILLINOIS**

**FIGURE 11**





## **ATTACHMENTS**

**ATTACHMENT A  
GROUNDWATER ELEVATION DATA**

**ATTACHMENT A  
GROUNDWATER ELEVATION DATA**

2023 35 I.A.C. § 845 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT

HENNEPIN POWER PLANT

ASH POND NO. 2 AND ASH POND NO. 4

HENNEPIN, IL

| Well ID | Well Type  | Monitored Unit | Date       | Depth to Groundwater (feet BMP) | Groundwater Elevation (feet NAVD88) |
|---------|------------|----------------|------------|---------------------------------|-------------------------------------|
| 03R     | Compliance | UA             | 04/30/2023 | 34.29                           | 447.63                              |
| 03R     | Compliance | UA             | 05/30/2023 | 35.04                           | 446.88                              |
| 03R     | Compliance | UA             | 06/21/2023 | 35.08                           | 446.84                              |
| 03R     | Compliance | UA             | 07/21/2023 | 34.71                           | 447.21                              |
| 03R     | Compliance | UA             | 08/21/2023 | 35.29                           | 446.63                              |
| 03R     | Compliance | UA             | 09/30/2023 | 35.45                           | 446.47                              |
| 03R     | Compliance | UA             | 10/31/2023 | 34.90                           | 447.02                              |
| 03R     | Compliance | UA             | 11/13/2023 | 35.50                           | 446.42                              |
| 03R     | Compliance | UA             | 12/21/2023 | 35.75                           | 446.17                              |
| 07      | Background | UA             | 04/30/2023 | 67.44                           | 450.82                              |
| 07      | Background | UA             | 05/30/2023 | 67.80                           | 450.47                              |
| 07      | Background | UA             | 06/21/2023 | 68.16                           | 450.10                              |
| 07      | Background | UA             | 07/21/2023 | 68.13                           | 450.13                              |
| 07      | Background | UA             | 08/21/2023 | 68.39                           | 449.87                              |
| 07      | Background | UA             | 10/31/2023 | 68.55                           | 449.72                              |
| 07      | Background | UA             | 11/13/2023 | 68.54                           | 449.73                              |
| 07      | Background | UA             | 12/21/2023 | 69.03                           | 449.24                              |
| 08      | Background | UA             | 04/30/2023 | 53.22                           | 448.15                              |
| 08      | Background | UA             | 05/30/2023 | 53.84                           | 447.54                              |
| 08      | Background | UA             | 06/21/2023 | 53.99                           | 447.38                              |
| 08      | Background | UA             | 07/21/2023 | 53.66                           | 447.71                              |
| 08      | Background | UA             | 08/21/2023 | 54.24                           | 447.13                              |
| 08      | Background | UA             | 09/30/2023 | 54.43                           | 446.95                              |
| 08      | Background | UA             | 10/31/2023 | 53.85                           | 447.53                              |
| 08      | Background | UA             | 11/13/2023 | 54.02                           | 447.36                              |
| 08      | Background | UA             | 12/21/2023 | 54.80                           | 446.58                              |
| 08D     | Background | UA             | 04/30/2023 | 53.49                           | 447.84                              |
| 08D     | Background | UA             | 05/30/2023 | 54.12                           | 447.22                              |
| 08D     | Background | UA             | 06/21/2023 | 54.12                           | 447.21                              |
| 08D     | Background | UA             | 07/21/2023 | 53.75                           | 447.58                              |
| 08D     | Background | UA             | 08/21/2023 | 54.44                           | 446.89                              |
| 08D     | Background | UA             | 09/30/2023 | 54.61                           | 446.73                              |
| 08D     | Background | UA             | 10/31/2023 | 54.04                           | 447.30                              |
| 08D     | Background | UA             | 11/13/2023 | 54.23                           | 447.11                              |
| 08D     | Background | UA             | 12/21/2023 | 55.00                           | 446.34                              |
| 18S     | Compliance | UA             | 04/30/2023 | 40.11                           | 447.59                              |
| 18S     | Compliance | UA             | 05/30/2023 | 40.86                           | 446.84                              |
| 18S     | Compliance | UA             | 06/21/2023 | 40.85                           | 446.85                              |
| 18S     | Compliance | UA             | 07/21/2023 | 40.45                           | 447.25                              |
| 18S     | Compliance | UA             | 08/21/2023 | 41.03                           | 446.67                              |
| 18S     | Compliance | UA             | 10/31/2023 | 40.65                           | 447.05                              |
| 18S     | Compliance | UA             | 11/13/2023 | 40.85                           | 446.85                              |
| 18S     | Compliance | UA             | 12/21/2023 | 41.51                           | 446.19                              |
| 18D     | Compliance | UA             | 04/30/2023 | 40.31                           | 447.29                              |
| 18D     | Compliance | UA             | 05/30/2023 | 40.91                           | 446.69                              |
| 18D     | Compliance | UA             | 06/21/2023 | 41.02                           | 446.58                              |

**ATTACHMENT A  
GROUNDWATER ELEVATION DATA**

2023 35 I.A.C. § 845 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT

HENNEPIN POWER PLANT

ASH POND NO. 2 AND ASH POND NO. 4

HENNEPIN, IL

| Well ID | Well Type  | Monitored Unit | Date       | Depth to Groundwater<br>(feet BMP) | Groundwater Elevation<br>(feet NAVD88) |
|---------|------------|----------------|------------|------------------------------------|--|
| 18D     | Compliance | UA             | 07/21/2023 | 40.63                              | 446.97                                 |
| 18D     | Compliance | UA             | 08/21/2023 | 41.18                              | 446.42                                 |
| 18D     | Compliance | UA             | 09/30/2023 | 41.37                              | 446.23                                 |
| 18D     | Compliance | UA             | 10/31/2023 | 40.70                              | 446.90                                 |
| 18D     | Compliance | UA             | 11/13/2023 | 40.95                              | 446.65                                 |
| 18D     | Compliance | UA             | 12/21/2023 | 41.52                              | 446.08                                 |
| 45S     | Compliance | UA             | 05/30/2023 | 20.42                              | 447.06                                 |
| 45S     | Compliance | UA             | 08/21/2023 | 18.98                              | 448.50                                 |
| 45S     | Compliance | UA             | 10/31/2023 | 20.57                              | 446.91                                 |
| 45S     | Compliance | UA             | 11/13/2023 | 21.45                              | 446.03                                 |

**Notes:**

Due to malfunctioning pressure transducer, data gaps exist in monthly water level elevations prior to the fourth quarter. Monthly depth to water measurements were collected manually in the fourth quarter.

BMP = below measuring point

NAVD88 = North American Vertical Datum of 1988

Monitored Unit Abbreviations:

UA = uppermost aquifer

Generated 2024-01-24 17:39:47.841325 by banoffra

## **ATTACHMENT B COMPARISON OF STATISTICAL RESULTS TO BACKGROUND**

- **ATTACHMENT C FROM THE QUARTER 2, 2023  
GROUNDWATER MONITORING DATA AND DETECTED  
EXCEEDANCES REPORT (RAMBOLL, 2023a)**
- **ATTACHMENT C FROM THE QUARTER 3, 2023  
GROUNDWATER MONITORING DATA AND DETECTED  
EXCEEDANCES REPORT (RAMBOLL, 2023b)**

**ATTACHMENT C.**

**COMPARISON OF STATISTICAL RESULTS TO BACKGROUND - QUARTER 2, 2023**

845 QUARTERLY REPORT  
 HENNEPIN POWER PLANT  
 ASH POND NO. 2 AND ASH POND NO. 4  
 HENNEPIN, IL

| Well ID | HSU | Event | Parameter                      | Units | Date Range          | Sample Count | Percent ND | Statistical Calculation | Statistical Result | Background |
|---------|-----|-------|--------------------------------|-------|---------------------|--------------|------------|-------------------------|--------------------|------------|
| 03R     | UA  | E001  | Antimony, total                | mg/L  | 12/09/15 - 05/31/23 | 22           | 100        | All ND - Last           | 0.001              | 0.001      |
| 03R     | UA  | E001  | Arsenic, total                 | mg/L  | 12/09/15 - 05/31/23 | 23           | 100        | All ND - Last           | 0.01               | 0.001      |
| 03R     | UA  | E001  | Barium, total                  | mg/L  | 12/09/15 - 05/31/23 | 25           | 0          | CI around mean          | 0.0623             | 0.212      |
| 03R     | UA  | E001  | Beryllium, total               | mg/L  | 12/09/15 - 05/31/23 | 22           | 100        | All ND - Last           | 0.0005             | 0.001      |
| 03R     | UA  | E001  | Boron, total                   | mg/L  | 12/09/15 - 05/31/23 | 29           | 0          | CB around linear reg    | 0.566              | 0.163      |
| 03R     | UA  | E001  | Cadmium, total                 | mg/L  | 12/09/15 - 05/31/23 | 24           | 92         | CI around median        | 0.001              | 0.0023     |
| 03R     | UA  | E001  | Chloride, total                | mg/L  | 12/09/15 - 05/31/23 | 29           | 0          | CB around linear reg    | 77.5               | 435        |
| 03R     | UA  | E001  | Chromium, total                | mg/L  | 12/09/15 - 05/31/23 | 23           | 91         | CB around T-S line      | 0.00148            | 0.001      |
| 03R     | UA  | E001  | Cobalt, total                  | mg/L  | 12/09/15 - 05/31/23 | 24           | 96         | CI around median        | 0.001              | 0.038      |
| 03R     | UA  | E001  | Fluoride, total                | mg/L  | 12/09/15 - 05/31/23 | 26           | 0          | CI around mean          | 0.271              | 0.12       |
| 03R     | UA  | E001  | Lead, total                    | mg/L  | 12/09/15 - 05/31/23 | 23           | 100        | All ND - Last           | 0.0075             | 0.0015     |
| 03R     | UA  | E001  | Lithium, total                 | mg/L  | 12/09/15 - 05/31/23 | 28           | 0          | CI around mean          | 0.0247             | 0.019      |
| 03R     | UA  | E001  | Mercury, total                 | mg/L  | 12/09/15 - 05/31/23 | 22           | 100        | All ND - Last           | 0.0002             | 0.0002     |
| 03R     | UA  | E001  | Molybdenum, total              | mg/L  | 12/09/15 - 05/31/23 | 28           | 0          | CB around linear reg    | 0.0999             | 0.0017     |
| 03R     | UA  | E001  | pH (field)                     | SU    | 12/09/15 - 05/31/23 | 32           | 0          | CB around T-S line      | 7.1/7.2            | 6.6/7.5    |
| 03R     | UA  | E001  | Radium 226 + Radium 228, total | pCi/L | 12/09/15 - 05/31/23 | 23           | 0          | CI around median        | 0.26               | 1.5        |
| 03R     | UA  | E001  | Selenium, total                | mg/L  | 12/09/15 - 05/31/23 | 25           | 0          | CI around mean          | 0.00504            | 0.0014     |
| 03R     | UA  | E001  | Sulfate, total                 | mg/L  | 12/09/15 - 05/31/23 | 28           | 0          | CB around linear reg    | 77.6               | 214.6      |
| 03R     | UA  | E001  | Thallium, total                | mg/L  | 12/09/15 - 05/31/23 | 22           | 100        | All ND - Last           | 0.002              | 0.001      |
| 03R     | UA  | E001  | Total Dissolved Solids         | mg/L  | 12/09/15 - 05/31/23 | 29           | 0          | CI around mean          | 508                | 1,620      |
| 18S     | UA  | E001  | Antimony, total                | mg/L  | 12/09/15 - 05/31/23 | 22           | 100        | All ND - Last           | 0.001              | 0.001      |
| 18S     | UA  | E001  | Arsenic, total                 | mg/L  | 12/09/15 - 05/31/23 | 23           | 96         | CI around median        | 0.001              | 0.001      |
| 18S     | UA  | E001  | Barium, total                  | mg/L  | 12/09/15 - 05/31/23 | 25           | 0          | CB around linear reg    | 0.0513             | 0.212      |
| 18S     | UA  | E001  | Beryllium, total               | mg/L  | 12/09/15 - 05/31/23 | 22           | 100        | All ND - Last           | 0.0005             | 0.001      |
| 18S     | UA  | E001  | Boron, total                   | mg/L  | 12/09/15 - 05/31/23 | 29           | 0          | CB around T-S line      | 1.08               | 0.163      |
| 18S     | UA  | E001  | Cadmium, total                 | mg/L  | 12/09/15 - 05/31/23 | 24           | 75         | CI around median        | 0.001              | 0.0023     |
| 18S     | UA  | E001  | Chloride, total                | mg/L  | 12/09/15 - 05/31/23 | 29           | 0          | CB around linear reg    | 68.8               | 435        |

**ATTACHMENT C.**

**COMPARISON OF STATISTICAL RESULTS TO BACKGROUND - QUARTER 2, 2023**

845 QUARTERLY REPORT  
 HENNEPIN POWER PLANT  
 ASH POND NO. 2 AND ASH POND NO. 4  
 HENNEPIN, IL

| Well ID | HSU | Event | Parameter                      | Units | Date Range          | Sample Count | Percent ND | Statistical Calculation | Statistical Result | Background |
|---------|-----|-------|--------------------------------|-------|---------------------|--------------|------------|-------------------------|--------------------|------------|
| 18S     | UA  | E001  | Chromium, total                | mg/L  | 12/09/15 - 05/31/23 | 24           | 54         | CI around median        | 0.0015             | 0.001      |
| 18S     | UA  | E001  | Cobalt, total                  | mg/L  | 12/09/15 - 05/31/23 | 24           | 82         | CI around median        | 0.001              | 0.038      |
| 18S     | UA  | E001  | Fluoride, total                | mg/L  | 12/09/15 - 05/31/23 | 26           | 0          | CB around linear reg    | 0.168              | 0.12       |
| 18S     | UA  | E001  | Lead, total                    | mg/L  | 12/09/15 - 05/31/23 | 23           | 100        | All ND - Last           | 0.0075             | 0.0015     |
| 18S     | UA  | E001  | Lithium, total                 | mg/L  | 12/09/15 - 05/31/23 | 28           | 0          | CB around linear reg    | 0.0383             | 0.019      |
| 18S     | UA  | E001  | Mercury, total                 | mg/L  | 12/09/15 - 05/31/23 | 22           | 100        | All ND - Last           | 0.0002             | 0.0002     |
| 18S     | UA  | E001  | Molybdenum, total              | mg/L  | 12/09/15 - 05/31/23 | 28           | 0          | CB around T-S line      | 0.0865             | 0.0017     |
| 18S     | UA  | E001  | pH (field)                     | SU    | 12/09/15 - 05/31/23 | 32           | 0          | CB around T-S line      | 7.2/7.3            | 6.6/7.5    |
| 18S     | UA  | E001  | Radium 226 + Radium 228, total | pCi/L | 12/09/15 - 05/31/23 | 23           | 0          | CI around mean          | 0.307              | 1.5        |
| 18S     | UA  | E001  | Selenium, total                | mg/L  | 12/09/15 - 05/31/23 | 25           | 3          | CB around T-S line      | 0.00118            | 0.0014     |
| 18S     | UA  | E001  | Sulfate, total                 | mg/L  | 12/09/15 - 05/31/23 | 29           | 0          | CB around T-S line      | 86.7               | 214.6      |
| 18S     | UA  | E001  | Thallium, total                | mg/L  | 12/09/15 - 05/31/23 | 22           | 100        | All ND - Last           | 0.002              | 0.001      |
| 18S     | UA  | E001  | Total Dissolved Solids         | mg/L  | 12/09/15 - 05/31/23 | 29           | 0          | CB around T-S line      | 470                | 1,620      |
| 18D     | UA  | E001  | Antimony, total                | mg/L  | 12/09/15 - 05/31/23 | 22           | 100        | All ND - Last           | 0.001              | 0.001      |
| 18D     | UA  | E001  | Arsenic, total                 | mg/L  | 12/09/15 - 05/31/23 | 23           | 96         | CI around median        | 0.001              | 0.001      |
| 18D     | UA  | E001  | Barium, total                  | mg/L  | 12/09/15 - 05/31/23 | 25           | 0          | CB around T-S line      | 0.0629             | 0.212      |
| 18D     | UA  | E001  | Beryllium, total               | mg/L  | 12/09/15 - 05/31/23 | 22           | 100        | All ND - Last           | 0.0005             | 0.001      |
| 18D     | UA  | E001  | Boron, total                   | mg/L  | 12/09/15 - 05/31/23 | 29           | 0          | CB around linear reg    | 1.31               | 0.163      |
| 18D     | UA  | E001  | Cadmium, total                 | mg/L  | 12/09/15 - 05/31/23 | 24           | 93         | CI around median        | 0.001              | 0.0023     |
| 18D     | UA  | E001  | Chloride, total                | mg/L  | 12/09/15 - 05/31/23 | 29           | 0          | CI around mean          | 76.3               | 435        |
| 18D     | UA  | E001  | Chromium, total                | mg/L  | 12/09/15 - 05/31/23 | 23           | 93         | CB around T-S line      | 0.00144            | 0.001      |
| 18D     | UA  | E001  | Cobalt, total                  | mg/L  | 12/09/15 - 05/31/23 | 25           | 3          | CB around linear reg    | 0.000406           | 0.038      |
| 18D     | UA  | E001  | Fluoride, total                | mg/L  | 12/09/15 - 05/31/23 | 26           | 0          | CI around mean          | 0.149              | 0.12       |
| 18D     | UA  | E001  | Lead, total                    | mg/L  | 12/09/15 - 05/31/23 | 23           | 96         | CI around median        | 0.001              | 0.0015     |
| 18D     | UA  | E001  | Lithium, total                 | mg/L  | 12/09/15 - 05/31/23 | 28           | 0          | CB around linear reg    | 0.023              | 0.019      |
| 18D     | UA  | E001  | Mercury, total                 | mg/L  | 12/09/15 - 05/31/23 | 22           | 100        | All ND - Last           | 0.0002             | 0.0002     |
| 18D     | UA  | E001  | Molybdenum, total              | mg/L  | 12/09/15 - 05/31/23 | 28           | 0          | CI around median        | 0.0315             | 0.0017     |

**ATTACHMENT C.**

**COMPARISON OF STATISTICAL RESULTS TO BACKGROUND - QUARTER 2, 2023**

845 QUARTERLY REPORT  
 HENNEPIN POWER PLANT  
 ASH POND NO. 2 AND ASH POND NO. 4  
 HENNEPIN, IL

| Well ID | HSU | Event | Parameter                      | Units | Date Range          | Sample Count | Percent ND | Statistical Calculation | Statistical Result | Background |
|---------|-----|-------|--------------------------------|-------|---------------------|--------------|------------|-------------------------|--------------------|------------|
| 18D     | UA  | E001  | pH (field)                     | SU    | 12/09/15 - 05/31/23 | 32           | 0          | CI around mean          | 7.1/7.2            | 6.6/7.5    |
| 18D     | UA  | E001  | Radium 226 + Radium 228, total | pCi/L | 12/09/15 - 05/31/23 | 23           | 0          | CI around mean          | 0.513              | 1.5        |
| 18D     | UA  | E001  | Selenium, total                | mg/L  | 12/09/15 - 05/31/23 | 24           | 93         | CI around median        | 0.001              | 0.0014     |
| 18D     | UA  | E001  | Sulfate, total                 | mg/L  | 12/09/15 - 05/31/23 | 29           | 0          | CB around linear reg    | 89.1               | 214.6      |
| 18D     | UA  | E001  | Thallium, total                | mg/L  | 12/09/15 - 05/31/23 | 22           | 100        | All ND - Last           | 0.002              | 0.001      |
| 18D     | UA  | E001  | Total Dissolved Solids         | mg/L  | 12/09/15 - 05/31/23 | 29           | 0          | CB around T-S line      | 461                | 1,620      |
| 45S     | UA  | E001  | Antimony, total                | mg/L  | 12/09/15 - 06/01/23 | 22           | 100        | All ND - Last           | 0.001              | 0.001      |
| 45S     | UA  | E001  | Arsenic, total                 | mg/L  | 12/09/15 - 06/01/23 | 23           | 100        | All ND - Last           | 0.01               | 0.001      |
| 45S     | UA  | E001  | Barium, total                  | mg/L  | 12/09/15 - 06/01/23 | 25           | 0          | CB around linear reg    | 0.0775             | 0.212      |
| 45S     | UA  | E001  | Beryllium, total               | mg/L  | 12/09/15 - 06/01/23 | 22           | 100        | All ND - Last           | 0.0005             | 0.001      |
| 45S     | UA  | E001  | Boron, total                   | mg/L  | 12/09/15 - 06/01/23 | 26           | 0          | CB around linear reg    | 0.223              | 0.163      |
| 45S     | UA  | E001  | Cadmium, total                 | mg/L  | 12/09/15 - 06/01/23 | 24           | 50         | CB around linear reg    | 0.00054            | 0.0023     |
| 45S     | UA  | E001  | Chloride, total                | mg/L  | 12/09/15 - 06/01/23 | 26           | 0          | CB around linear reg    | 85.9               | 435        |
| 45S     | UA  | E001  | Chromium, total                | mg/L  | 12/09/15 - 06/01/23 | 24           | 92         | CB around T-S line      | 0.0015             | 0.001      |
| 45S     | UA  | E001  | Cobalt, total                  | mg/L  | 12/09/15 - 06/01/23 | 25           | 16         | CI around geomean       | 0.00133            | 0.038      |
| 45S     | UA  | E001  | Fluoride, total                | mg/L  | 12/09/15 - 06/01/23 | 26           | 0          | CB around linear reg    | 0.248              | 0.12       |
| 45S     | UA  | E001  | Lead, total                    | mg/L  | 12/09/15 - 06/01/23 | 23           | 91         | CI around median        | 0.001              | 0.0015     |
| 45S     | UA  | E001  | Lithium, total                 | mg/L  | 12/09/15 - 06/01/23 | 25           | 0          | CB around linear reg    | 0.0109             | 0.019      |
| 45S     | UA  | E001  | Mercury, total                 | mg/L  | 12/09/15 - 06/01/23 | 22           | 100        | All ND - Last           | 0.0002             | 0.0002     |
| 45S     | UA  | E001  | Molybdenum, total              | mg/L  | 12/09/15 - 06/01/23 | 25           | 0          | CB around linear reg    | 0.0433             | 0.0017     |
| 45S     | UA  | E001  | pH (field)                     | SU    | 12/09/15 - 06/01/23 | 26           | 0          | CI around mean          | 7.1/7.2            | 6.6/7.5    |
| 45S     | UA  | E001  | Radium 226 + Radium 228, total | pCi/L | 12/09/15 - 06/01/23 | 23           | 0          | CI around geomean       | 0.501              | 1.5        |
| 45S     | UA  | E001  | Selenium, total                | mg/L  | 12/09/15 - 06/01/23 | 24           | 100        | All ND - Last           | 0.001              | 0.0014     |
| 45S     | UA  | E001  | Sulfate, total                 | mg/L  | 12/09/15 - 06/01/23 | 26           | 0          | CI around median        | 70                 | 214.6      |
| 45S     | UA  | E001  | Thallium, total                | mg/L  | 12/09/15 - 06/01/23 | 22           | 100        | All ND - Last           | 0.002              | 0.001      |
| 45S     | UA  | E001  | Total Dissolved Solids         | mg/L  | 12/09/15 - 06/01/23 | 26           | 0          | CI around mean          | 521                | 1,620      |



**ATTACHMENT C.**  
**COMPARISON OF STATISTICAL RESULTS TO BACKGROUND - QUARTER 2, 2023**

845 QUARTERLY REPORT  
HENNEPIN POWER PLANT  
ASH POND NO. 2 AND ASH POND NO. 4  
HENNEPIN, IL

**Notes:**

Lower Confidence Limit (LCL) or Upper Confidence Limit (UCL) exceeded the statistical background value

HSU = hydrostratigraphic unit:

UA = Uppermost Aquifer

mg/L = milligrams per liter

ND = non-detect

pCi/L = picocuries per liter

SU = standard units

Sample Count = number of samples from Sampled Date Range used to calculate the Statistical Result

Statistical Calculation = method used to calculate the statistical result:

All ND - Last = All results were below the reporting limit, and the last determined reporting limit is shown

CB around T-S line = Confidence band around Thiel-Sen line

CB around linear reg = Confidence band around linear regression

CI around geomean = Confidence interval around the geometric mean

CI around mean = Confidence interval around the mean

CI around median = Confidence interval around the median

Statistical Result = calculated in accordance with Statistical Analysis Plan using constituent concentrations observed at monitoring well during all sampling events within the specified date range  
For pH, the values presented are the lower / upper limits of the background determination

**ATTACHMENT C.**

**COMPARISON OF STATISTICAL RESULTS TO BACKGROUND - QUARTER 3, 2023**

845 QUARTERLY REPORT  
 HENNEPIN POWER PLANT  
 ASH POND NO. 2 AND ASH POND NO. 4  
 HENNEPIN, IL

| Well ID | HSU | Event | Parameter                      | Units | Date Range          | Sample Count | Percent ND | Statistical Calculation | Statistical Result | Background |
|---------|-----|-------|--------------------------------|-------|---------------------|--------------|------------|-------------------------|--------------------|------------|
| 03R     | UA  | E002  | Antimony, total                | mg/L  | 12/09/15 - 08/28/23 | 23           | 100        | All ND - Last           | 0.003              | 0.001      |
| 03R     | UA  | E002  | Arsenic, total                 | mg/L  | 12/09/15 - 08/28/23 | 24           | 100        | All ND - Last           | 0.001              | 0.001      |
| 03R     | UA  | E002  | Barium, total                  | mg/L  | 12/09/15 - 08/28/23 | 26           | 0          | CI around mean          | 0.062              | 0.212      |
| 03R     | UA  | E002  | Beryllium, total               | mg/L  | 12/09/15 - 08/28/23 | 23           | 100        | All ND - Last           | 0.001              | 0.001      |
| 03R     | UA  | E002  | Boron, total                   | mg/L  | 12/09/15 - 08/28/23 | 30           | 0          | CB around linear reg    | 0.5                | 0.163      |
| 03R     | UA  | E002  | Cadmium, total                 | mg/L  | 12/09/15 - 08/28/23 | 25           | 92         | CI around median        | 0.001              | 0.00230    |
| 03R     | UA  | E002  | Chloride, total                | mg/L  | 12/09/15 - 08/28/23 | 30           | 0          | CB around linear reg    | 76.7               | 435        |
| 03R     | UA  | E002  | Chromium, total                | mg/L  | 12/09/15 - 08/28/23 | 24           | 92         | CB around T-S line      | 0.0015             | 0.00100    |
| 03R     | UA  | E002  | Cobalt, total                  | mg/L  | 12/09/15 - 08/28/23 | 25           | 96         | CI around median        | 0.001              | 0.0380     |
| 03R     | UA  | E002  | Fluoride, total                | mg/L  | 12/09/15 - 08/28/23 | 27           | 4          | CI around geomean       | 0.27               | 0.120      |
| 03R     | UA  | E002  | Lead, total                    | mg/L  | 12/09/15 - 08/28/23 | 24           | 100        | All ND - Last           | 0.0005             | 0.00150    |
| 03R     | UA  | E002  | Lithium, total                 | mg/L  | 12/09/15 - 08/28/23 | 29           | 0          | CI around mean          | 0.0244             | 0.0190     |
| 03R     | UA  | E002  | Mercury, total                 | mg/L  | 12/09/15 - 08/28/23 | 23           | 100        | All ND - Last           | 0.0002             | 0.0002     |
| 03R     | UA  | E002  | Molybdenum, total              | mg/L  | 12/09/15 - 08/28/23 | 29           | 0          | CB around linear reg    | 0.0938             | 0.00170    |
| 03R     | UA  | E002  | pH (field)                     | SU    | 12/09/15 - 08/28/23 | 33           | 0          | CB around T-S line      | 7.0/7.2            | 6.6/7.5    |
| 03R     | UA  | E002  | Radium 226 + Radium 228, total | pCi/L | 12/09/15 - 08/28/23 | 24           | 0          | CI around median        | 0.27               | 1.50       |
| 03R     | UA  | E002  | Selenium, total                | mg/L  | 12/09/15 - 08/28/23 | 26           | 0          | CI around mean          | 0.00497            | 0.00140    |
| 03R     | UA  | E002  | Sulfate, total                 | mg/L  | 12/09/15 - 08/28/23 | 29           | 0          | CB around linear reg    | 76.2               | 215        |
| 03R     | UA  | E002  | Thallium, total                | mg/L  | 12/09/15 - 08/28/23 | 23           | 100        | All ND - Last           | 0.002              | 0.001      |
| 03R     | UA  | E002  | Total Dissolved Solids         | mg/L  | 12/09/15 - 08/28/23 | 30           | 0          | CI around mean          | 509                | 1,620      |
| 18S     | UA  | E002  | Antimony, total                | mg/L  | 12/09/15 - 08/28/23 | 23           | 100        | All ND - Last           | 0.003              | 0.001      |
| 18S     | UA  | E002  | Arsenic, total                 | mg/L  | 12/09/15 - 08/28/23 | 24           | 96         | CI around median        | 0.001              | 0.001      |
| 18S     | UA  | E002  | Barium, total                  | mg/L  | 12/09/15 - 08/28/23 | 26           | 0          | CB around linear reg    | 0.0505             | 0.212      |
| 18S     | UA  | E002  | Beryllium, total               | mg/L  | 12/09/15 - 08/28/23 | 23           | 100        | All ND - Last           | 0.001              | 0.001      |
| 18S     | UA  | E002  | Boron, total                   | mg/L  | 12/09/15 - 08/28/23 | 30           | 0          | CB around T-S line      | 0.978              | 0.163      |
| 18S     | UA  | E002  | Cadmium, total                 | mg/L  | 12/09/15 - 08/28/23 | 25           | 76         | CI around median        | 0.001              | 0.00230    |
| 18S     | UA  | E002  | Chloride, total                | mg/L  | 12/09/15 - 08/28/23 | 30           | 0          | CB around linear reg    | 69.2               | 435        |

**ATTACHMENT C.**

**COMPARISON OF STATISTICAL RESULTS TO BACKGROUND - QUARTER 3, 2023**

845 QUARTERLY REPORT  
 HENNEPIN POWER PLANT  
 ASH POND NO. 2 AND ASH POND NO. 4  
 HENNEPIN, IL

| Well ID | HSU | Event | Parameter                      | Units | Date Range          | Sample Count | Percent ND | Statistical Calculation | Statistical Result | Background |
|---------|-----|-------|--------------------------------|-------|---------------------|--------------|------------|-------------------------|--------------------|------------|
| 18S     | UA  | E002  | Chromium, total                | mg/L  | 12/09/15 - 08/28/23 | 25           | 55         | CI around median        | 0.0015             | 0.00100    |
| 18S     | UA  | E002  | Cobalt, total                  | mg/L  | 12/09/15 - 08/28/23 | 25           | 83         | CI around median        | 0.001              | 0.0380     |
| 18S     | UA  | E002  | Fluoride, total                | mg/L  | 12/09/15 - 08/28/23 | 27           | 3          | CB around T-S line      | 0.168              | 0.120      |
| 18S     | UA  | E002  | Lead, total                    | mg/L  | 12/09/15 - 08/28/23 | 24           | 100        | All ND - Last           | 0.0005             | 0.00150    |
| 18S     | UA  | E002  | Lithium, total                 | mg/L  | 12/09/15 - 08/28/23 | 29           | 0          | CB around linear reg    | 0.0372             | 0.0190     |
| 18S     | UA  | E002  | Mercury, total                 | mg/L  | 12/09/15 - 08/28/23 | 23           | 100        | All ND - Last           | 0.0002             | 0.0002     |
| 18S     | UA  | E002  | Molybdenum, total              | mg/L  | 12/09/15 - 08/28/23 | 29           | 0          | CB around linear reg    | 0.0908             | 0.00170    |
| 18S     | UA  | E002  | pH (field)                     | SU    | 12/09/15 - 08/28/23 | 33           | 0          | CB around T-S line      | 7.2/7.3            | 6.6/7.5    |
| 18S     | UA  | E002  | Radium 226 + Radium 228, total | pCi/L | 12/09/15 - 08/28/23 | 24           | 0          | CI around mean          | 0.317              | 1.50       |
| 18S     | UA  | E002  | Selenium, total                | mg/L  | 12/09/15 - 08/28/23 | 26           | 3          | CB around T-S line      | 0.00339            | 0.00140    |
| 18S     | UA  | E002  | Sulfate, total                 | mg/L  | 12/09/15 - 08/28/23 | 30           | 0          | CB around T-S line      | 89.8               | 215        |
| 18S     | UA  | E002  | Thallium, total                | mg/L  | 12/09/15 - 08/28/23 | 23           | 100        | All ND - Last           | 0.002              | 0.001      |
| 18S     | UA  | E002  | Total Dissolved Solids         | mg/L  | 12/09/15 - 08/28/23 | 30           | 0          | CB around T-S line      | 477                | 1,620      |
| 18D     | UA  | E002  | Antimony, total                | mg/L  | 12/09/15 - 08/23/23 | 23           | 100        | All ND - Last           | 0.003              | 0.001      |
| 18D     | UA  | E002  | Arsenic, total                 | mg/L  | 12/09/15 - 08/23/23 | 24           | 96         | CI around median        | 0.001              | 0.001      |
| 18D     | UA  | E002  | Barium, total                  | mg/L  | 12/09/15 - 08/23/23 | 26           | 0          | CB around T-S line      | 0.0613             | 0.212      |
| 18D     | UA  | E002  | Beryllium, total               | mg/L  | 12/09/15 - 08/23/23 | 23           | 100        | All ND - Last           | 0.001              | 0.001      |
| 18D     | UA  | E002  | Boron, total                   | mg/L  | 12/09/15 - 08/23/23 | 30           | 0          | CB around linear reg    | 1.25               | 0.163      |
| 18D     | UA  | E002  | Cadmium, total                 | mg/L  | 12/09/15 - 08/23/23 | 25           | 93         | CI around median        | 0.001              | 0.00230    |
| 18D     | UA  | E002  | Chloride, total                | mg/L  | 12/09/15 - 08/23/23 | 30           | 0          | CI around mean          | 76.2               | 435        |
| 18D     | UA  | E002  | Chromium, total                | mg/L  | 12/09/15 - 08/23/23 | 24           | 93         | CB around T-S line      | 0.0015             | 0.00100    |
| 18D     | UA  | E002  | Cobalt, total                  | mg/L  | 12/09/15 - 08/23/23 | 26           | 3          | CB around linear reg    | 0.000289           | 0.0380     |
| 18D     | UA  | E002  | Fluoride, total                | mg/L  | 12/09/15 - 08/23/23 | 27           | 3          | CI around median        | 0.15               | 0.120      |
| 18D     | UA  | E002  | Lead, total                    | mg/L  | 12/09/15 - 08/23/23 | 24           | 96         | CI around median        | 0.001              | 0.00150    |
| 18D     | UA  | E002  | Lithium, total                 | mg/L  | 12/09/15 - 08/23/23 | 29           | 0          | CB around linear reg    | 0.0231             | 0.0190     |
| 18D     | UA  | E002  | Mercury, total                 | mg/L  | 12/09/15 - 08/23/23 | 23           | 100        | All ND - Last           | 0.0002             | 0.0002     |
| 18D     | UA  | E002  | Molybdenum, total              | mg/L  | 12/09/15 - 08/23/23 | 29           | 0          | CI around median        | 0.0315             | 0.00170    |

**ATTACHMENT C.**

**COMPARISON OF STATISTICAL RESULTS TO BACKGROUND - QUARTER 3, 2023**

845 QUARTERLY REPORT  
 HENNEPIN POWER PLANT  
 ASH POND NO. 2 AND ASH POND NO. 4  
 HENNEPIN, IL

| Well ID | HSU | Event | Parameter                      | Units | Date Range          | Sample Count | Percent ND | Statistical Calculation | Statistical Result | Background |
|---------|-----|-------|--------------------------------|-------|---------------------|--------------|------------|-------------------------|--------------------|------------|
| 18D     | UA  | E002  | pH (field)                     | SU    | 12/09/15 - 08/23/23 | 33           | 0          | CI around mean          | 7.1/7.2            | 6.6/7.5    |
| 18D     | UA  | E002  | Radium 226 + Radium 228, total | pCi/L | 12/09/15 - 08/23/23 | 24           | 0          | CI around mean          | 0.518              | 1.50       |
| 18D     | UA  | E002  | Selenium, total                | mg/L  | 12/09/15 - 08/23/23 | 25           | 93         | CI around median        | 0.001              | 0.00140    |
| 18D     | UA  | E002  | Sulfate, total                 | mg/L  | 12/09/15 - 08/23/23 | 30           | 0          | CB around linear reg    | 88.5               | 215        |
| 18D     | UA  | E002  | Thallium, total                | mg/L  | 12/09/15 - 08/23/23 | 23           | 100        | All ND - Last           | 0.002              | 0.001      |
| 18D     | UA  | E002  | Total Dissolved Solids         | mg/L  | 12/09/15 - 08/23/23 | 30           | 0          | CB around T-S line      | 468                | 1,620      |
| 45S     | UA  | E002  | Antimony, total                | mg/L  | 12/09/15 - 08/28/23 | 23           | 100        | All ND - Last           | 0.003              | 0.001      |
| 45S     | UA  | E002  | Arsenic, total                 | mg/L  | 12/09/15 - 08/28/23 | 24           | 96         | CI around median        | 0.001              | 0.001      |
| 45S     | UA  | E002  | Barium, total                  | mg/L  | 12/09/15 - 08/28/23 | 26           | 0          | CB around linear reg    | 0.0777             | 0.212      |
| 45S     | UA  | E002  | Beryllium, total               | mg/L  | 12/09/15 - 08/28/23 | 23           | 100        | All ND - Last           | 0.001              | 0.001      |
| 45S     | UA  | E002  | Boron, total                   | mg/L  | 12/09/15 - 08/28/23 | 27           | 0          | CB around linear reg    | 0.214              | 0.163      |
| 45S     | UA  | E002  | Cadmium, total                 | mg/L  | 12/09/15 - 08/28/23 | 25           | 48         | CB around linear reg    | 0.000555           | 0.00230    |
| 45S     | UA  | E002  | Chloride, total                | mg/L  | 12/09/15 - 08/28/23 | 27           | 0          | CB around linear reg    | 85.8               | 435        |
| 45S     | UA  | E002  | Chromium, total                | mg/L  | 12/09/15 - 08/28/23 | 25           | 92         | CB around T-S line      | 0.0015             | 0.00100    |
| 45S     | UA  | E002  | Cobalt, total                  | mg/L  | 12/09/15 - 08/28/23 | 26           | 15         | CI around geomean       | 0.00135            | 0.0380     |
| 45S     | UA  | E002  | Fluoride, total                | mg/L  | 12/09/15 - 08/28/23 | 27           | 4          | CB around T-S line      | 0.25               | 0.120      |
| 45S     | UA  | E002  | Lead, total                    | mg/L  | 12/09/15 - 08/28/23 | 24           | 88         | CB around T-S line      | 0.001              | 0.00150    |
| 45S     | UA  | E002  | Lithium, total                 | mg/L  | 12/09/15 - 08/28/23 | 26           | 0          | CB around linear reg    | 0.0109             | 0.0190     |
| 45S     | UA  | E002  | Mercury, total                 | mg/L  | 12/09/15 - 08/28/23 | 23           | 100        | All ND - Last           | 0.0002             | 0.0002     |
| 45S     | UA  | E002  | Molybdenum, total              | mg/L  | 12/09/15 - 08/28/23 | 26           | 0          | CB around linear reg    | 0.0427             | 0.00170    |
| 45S     | UA  | E002  | pH (field)                     | SU    | 12/09/15 - 08/28/23 | 27           | 0          | CI around mean          | 7.1/7.2            | 6.6/7.5    |
| 45S     | UA  | E002  | Radium 226 + Radium 228, total | pCi/L | 12/09/15 - 08/28/23 | 24           | 0          | CI around geomean       | 0.508              | 1.50       |
| 45S     | UA  | E002  | Selenium, total                | mg/L  | 12/09/15 - 08/28/23 | 25           | 100        | All ND - Last           | 0.0025             | 0.00140    |
| 45S     | UA  | E002  | Sulfate, total                 | mg/L  | 12/09/15 - 08/28/23 | 27           | 0          | CI around median        | 70                 | 215        |
| 45S     | UA  | E002  | Thallium, total                | mg/L  | 12/09/15 - 08/28/23 | 23           | 100        | All ND - Last           | 0.002              | 0.001      |
| 45S     | UA  | E002  | Total Dissolved Solids         | mg/L  | 12/09/15 - 08/28/23 | 27           | 0          | CI around mean          | 523                | 1,620      |

**ATTACHMENT C.**  
**COMPARISON OF STATISTICAL RESULTS TO BACKGROUND - QUARTER 3, 2023**

845 QUARTERLY REPORT  
HENNEPIN POWER PLANT  
ASH POND NO. 2 AND ASH POND NO. 4  
HENNEPIN, IL

**Notes:**

Lower Confidence Limit (LCL) or Upper Confidence Limit (UCL) exceeded the statistical background value

HSU = hydrostratigraphic unit:

UA = Uppermost Aquifer

mg/L = milligrams per liter

ND = non-detect

pCi/L = picocuries per liter

SU = standard units

Sample Count = number of samples from Sampled Date Range used to calculate the Statistical Result

Statistical Calculation = method used to calculate the statistical result:

All ND - Last = All results were below the reporting limit, and the last determined reporting limit is shown

CB around T-S line = Confidence band around Thiel-Sen line

CB around linear reg = Confidence band around linear regression

CI around geomean = Confidence interval around the geometric mean

CI around mean = Confidence interval around the mean

CI around median = Confidence interval around the median

Statistical Result = calculated in accordance with the Statistical Analysis Plan using constituent concentrations observed at each monitoring well during all sampling events within the specified date range  
For pH, the values presented are the lower / upper limits of the background determination