Illinois Power Resources Generating, LLC
1500 Eastport Plaza Dr.
Collinsville, IL 62234

January 28, 2022

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

Re: Duck Creek Ash Pond No. 1 and No. 2 (IEPA ID: W0578010001-01, 02) Annual Consolidated Report

Dear Mr. LeCrone:

In accordance with 35 IAC § 845.550, Illinois Power Resources Generating, LLC (IPRG) is submitting the annual consolidated report for the Duck Creek Ash Pond No. 1 and No.2 (IEPA ID: W0578010001-01, 02), as enclosed.

Sincerely,

Dianna Tickner

Dianna Tickner
Director Decommissioning & Demolition

Enclosures

Annual Consolidated Report
Illinois Power Resources Generating, LLC
Duck Creek Power Plant
Ash Pond No. 1 and No. 2; IEPA **ID: W0578010001-01, 02**

In accordance with 35 IAC § 845.550, Illinois Power Resources Generating, LLC (IPRG) has prepared the annual consolidated report. The report is provided in two sections as follows:

Section 1
1) Annual Inspection Report (Section 845.540(b))

Section 2
2) Annual Groundwater Monitoring and Corrective Action Report (Section 845.610(e))

Section 1
Annual Inspection Report

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	Duck Creek Power Station Fulton County, Illinois 61520 10/19/2021
Operator Name / Address	Luminant Generation Company LLC 6555 Sierra Drive, Irving, TX 75039
CCR unit	Ash Pond No. 1

INSPECTION REPORT 35 IAC § 845.540 Date of Inspection 10/19/2021	
(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.	Cap and closure of Ash Pond No. 1 completed.
(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	Cap and closure of Ash Pond No. 1 completed.
(b)(2)(E) The approximate volume of the impounded water and CCR contained in the unit at the time of the inspection.	Approximately 2500 acre-feet of CCR material capped and closed.
(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 Date of Inspection 10/19/2021	
(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))	Based on a review of the CCR unit's records, the CCR unit is designed, operated, and maintained to adequately manage the flow from the CCR impoundment and control the peak discharge from the inflow design flood.

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, the hazard potential classification was conducted in accordance with the requirements of Section 845.440 and the Safety Factor Assessment was conducted in accordance with the requirements of Section 845.460.

James Knutelski, PE
Illinois PE No. 062-054206, Expires: 11/30/2023
Date: 01/05/2022

Site Name: Duck Creek Power Station

CCR Unit: Ash Pond No. 1

35 IAC § 845.540 (b)(2)(B)		
Instrument ID #	Type	Maximum recorded reading since previous annual inspection (ft)
PZ1	Piezometer	abandoned
B5	Piezometer	abandoned

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			0	
CCR	622		655	52		85

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	Duck Creek Power Station Fulton County, Illinois 61520 10/19/2021
Operator Name / Address	Luminant Generation Company LLC 6555 Sierra Drive, Irving, TX 75039
CCR unit	Ash Pond No. 2

INSPECTION REPORT 35 IAC § 845.540 Date of Inspection 10/19/2021	
(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.	Cap and Closure activities substantially completed at time of inspection.
(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	Cap and closure substantially completed at time of inspection.
(b)(2)(E) The approximate volume of the impounded water and CCR contained in the unit at the time of the inspection.	Approximately 3750 acre-feet of CCR capped and closed.
(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 Date of Inspection 10/19/2021	
(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))	Based on a review of the CCR unit's records, the CCR unit is designed, operated, and maintained to adequately manage the flow from the CCR impoundment and control the peak discharge from the inflow design flood.

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, the hazard potential classification was conducted in accordance with the requirements of Section 845.440 and the Safety Factor Assessment was conducted in accordance with the requirements of Section 845.460.

James Knutelski, PE
Illinois PE No. 062-054206, Expires: 11/30/2023
Date: 01/05/2022

Site Name: Duck Creek Power Station

CCR Unit: Ash Pond No. 2

35 IAC § 845.540 (b)(2)(B)		
Instrument ID #	Type	Maximum recorded reading since previous annual inspection (ft)
OM31	Piezometer	abandoned
PZ2	Piezometer	621.5'

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			0	
CCR	628		635	58		65

Section 2
Annual Groundwater and Corrective Action Report

Prepared for
Illinois Power Resources Generating, LLC

Date
January 31, 2022

Project No.
1940100711-005

2021 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT

ASH POND NO. 1 AND ASH POND NO. 2

DUCK CREEK POWER PLANT

CANTON, ILLINOIS

RAMBOLL Bright ideas. Sustainable change.

2021 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
DUCK CREEK POWER PLANT ASH POND NO. 1 AND ASH POND NO. 2

Project name	**Duck Creek Power Plant Ash Pond No. 1 and Ash Pond No. 2**
Project no.	**1940100711-005**
Recipient	**Illinois Power Resources Generating, LLC**
Document type	**Annual Groundwater Monitoring and Corrective Action Report**
Version	**FINAL**
Date	**January 31, 2022**
Prepared by	**Terra A. Dalton**
Checked by	**Lauren Cook**
Approved by	**Brian Hennings**
Description	**Annual Report in Support of Part 845**

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Terra A. Dalton
Senior Scientist

Brian Hennings, PG
Senior Managing Hydrogeologist

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ACRONYMS AND ABBREVIATIONS

§	Section
35 I.A.C.	Title 35 of the Illinois Administrative Code
AP1	Ash Pond No. 1
AP2	Ash Pond No. 2
bgs	below ground surface
CCR	coal combustion residuals
DCPP	Duck Creek Power Plant
GMP	Addendum to the Groundwater Monitoring Plan
GWPS	groundwater protection standard
ID	identification
IEPA	Illinois Environmental Protection Agency
IPRG	Illinois Power Resources Generating, LLC
MS	mine spoils
NID	National Inventory of Dams
No.	number
Part 845	35 I.A.C. § 845: Standards for the Disposal of Coal Combustion Residuals in Surface Impoundments
Ramboll	Ramboll Americas Engineering Solutions, Inc.
SI	surface impoundment
SSI	statistically significant increase
UA	uppermost aquifer

EXECUTIVE SUMMARY

This report has been prepared to provide the information required by Title 35 of the Illinois Administrative Code (35 I.A.C.) Section (§) 845.610(e) (*Annual Groundwater Monitoring and Corrective Action Report*) for Ash Pond Number (No.) 1 (AP1) and Ash Pond No. 2 (AP2) located at Duck Creek Power Plant (DCPP) near Canton, Illinois.

An operating permit application for AP1 and AP2 was submitted by Illinois Power Resources Generating, LLC (IPRG) to the Illinois Environmental Protection Agency (IEPA) by October 31, 2021 in accordance with the requirements specified in 35 I.A.C. § 845.230(d), and is pending approval. AP1 is recognized by Vistra identification (ID) No. 201, IEPA ID No. W0578010001-01, and National Inventory of Dams (NID) No. IL50715. AP2 is recognized by Vistra ID No. 202, IEPA ID No. W0578010001-02, and NID No. IL50014.

An Addendum to the Groundwater Monitoring Plan (GMP; Ramboll Americas Engineering Solutions, Inc. [Ramboll], 2021a), which included a Statistical Analysis Plan, was developed and submitted as part of the operating permit application to propose a monitoring well network and monitoring program specific to AP1 and AP2 that will comply with 35 I.A.C. § 845: Standards for the Disposal of Coal Combustion Residuals in Surface Impoundments (Part 845; IEPA, 2021).

Groundwater concentrations observed from 2015 to 2021 were evaluated in the presentation of the History of Potential Exceedances (Ramboll, 2021b) included in the operating permit application, as required by 35 I.A.C. § 845.230(d). Groundwater concentrations from 2015 to 2021 that exceeded the groundwater protection standard (GWPS) set forth in 35 I.A.C. § 845.600(a) are considered potential exceedances because the methodology used to determine them is proposed in the Statistical Analysis Plan, which is pending IEPA approval. The determination of potential historical exceedances of 35 I.A.C. § 845.600(a) and a summary of potential historical exceedances of proposed GWPS are shown in **Appendix A**.

Evaluation of background groundwater quality was presented in the GMP (Ramboll, 2021a), and compliance with Part 845 will be determined after the first round of groundwater sampling following IEPA's issuance of an operating permit.

This report summarizes only the information presented in the operating permit application for AP1 and AP2, submitted to IEPA by October 31, 2021, which is pending IEPA approval.

1. INTRODUCTION

This report has been prepared by Ramboll on behalf of IPRG, to provide the information required by 35 I.A.C. § 845.610(e) for AP1 and AP2 located at DCPP near Canton, Illinois. The owner or operator of a coal combustion residuals (CCR) surface impoundment (SI) must prepare and submit to IEPA by January 31st 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, summarize key actions completed, including the status of permit applications and Agency approvals, describe any problems encountered and actions to resolve the problems, and project key activities for the upcoming year. At a minimum, the annual report must contain the following information, to the extent available:

1. A map, aerial image, or diagram showing the CCR SI and all background (or upgradient) and downgradient monitoring wells, including the well ID Nos., that are part of the groundwater monitoring program for the CCR SI, and a visual delineation of any exceedances of the GWPS.
2. 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.
3. A potentiometric surface map for each groundwater elevation sampling event required by 35 I.A.C. § 845.650(b)(2).
4. 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 well, and the dates the samples were collected.
5. A narrative discussion of any statistically significant increases (SSIs) over background levels for the constituents listed in 35 I.A.C. § 845.600.
6. Other information required to be included in the annual report as specified in 35 I.A.C. §§ 845.600-680.
7. 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. At a minimum, the summary must:
    i. Specify whether groundwater monitoring data shows a SSI over background concentrations for one or more constituents listed in 35 I.A.C. § 845.600.
    ii. Identify those constituents having a SSI over background concentrations and the names of the monitoring wells associated with the SSI(s).
    iii. Specify whether there have been any exceedances of the GWPS for one or more constituents listed in 35 I.A.C. § 845.600.
    iv. 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.
    v. Provide the date when the assessment of corrective measures was initiated for the CCR SI.

vi. Provide the date when the assessment of corrective measures was completed for the CCR SI.

vii. 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.

viii. Specify whether remedial activities were initiated or are ongoing under 35 I.A.C. § 845.780 during the current annual reporting period.

An operating permit application for AP1 and AP2 was submitted by IPRG to IEPA by October 31, 2021 in accordance with the requirements specified in 35 I.A.C. § 845.230(d), and is pending approval. Therefore, the Part 845 groundwater monitoring program has not yet been initiated. This report summarizes the data collected for AP1 and AP2 as it was presented in the operating permit application, and includes the following:

- A map showing the CCR SI and all proposed background (or upgradient) and downgradient monitoring wells, including their identification numbers, that are part of the proposed groundwater monitoring program for the CCR SI presented in the GMP included in the operating permit application (Ramboll, 2021a).
- A summary of the History of Potential Exceedances included in the operating permit application (Ramboll, 2021b), as required by 35 I.A.C. § 845.230(d), summarizing groundwater concentrations from 2015-2021 that exceeded the proposed GWPS.
  - These are considered potential exceedances because the methodology used to determine them is proposed in the Statistical Analysis Plan (Appendix A of the GMP), which is pending IEPA approval.

2. MONITORING AND CORRECTIVE ACTION PROGRAM STATUS

The Part 845 groundwater monitoring program will commence the quarter following IEPA approval and issuance of the operating permit for AP1 and AP2.

3. KEY ACTIONS COMPLETED IN 2021

The proposed Part 845 monitoring well network is presented in **Figure 1** and summarized below in **Table A**. The proposed Part 845 monitoring well network includes wells previously installed for other programs.

Table A. Proposed Part 845 Monitoring Well Network

Well ID	Monitored Unit	Well Screen Interval (feet bgs)	Well Type [1]
BA06	UA	32.3 – 41.9	Background
OM01	MS	15.3 – 20.3	Compliance
OR02	MS	10.2 – 20.2	Compliance
OR03D	MS	66.7 – 76.7	Compliance
OM04S	MS	22.8 – 32.8	Compliance
OR04D	MS	54.8 – 64.8	Compliance
OR06A	MS	15.6 – 24.6	Compliance
OM07	MS	18.4 – 28.4	Compliance
OR11	MS	31.6 – 41.6	Compliance
OM12	MS	29.8 – 39.8	Compliance
OR13D	MS	37.3 – 47.3	Compliance
OR13S	MS	16.2 – 26.2	Compliance
OR14D	MS	36.2 – 45.2	Compliance
OM16	MS	30.4 – 40.4	Background
OM17	MS	4.2 – 14.3	Background
OR19	MS	41.7 – 51.7	Compliance
OR20	MS	44.6 – 54.6	Compliance
OM21	MS	47.2 – 57.2	Compliance
OM22D	MS	58.1 – 63.1	Compliance
OM23D	MS	70.4 – 79.4	Compliance
OM24D	MS	10.9 – 19.9	Compliance
OM25S	MS	52.0 – 61.0	Compliance

[1] Well type refers to the role of the well in the monitoring network.
bgs = below ground surface
MS = mine spoils
UA = uppermost aquifer

A summary of the samples collected from background and compliance monitoring wells during 2021 is included in **Table B** below. All analytical results obtained in 2021 are presented in the presentation of the History of Potential Exceedances (Ramboll, 2021b).

Table B. Summary of Groundwater Samples Collected

Sampling Dates	Parameters Collected [1]	Monitoring Wells Sampled [2]
February 22 to March 4, 2021	Boron, Chloride, pH	OM01, OM04S, OM07, OM12, OM21, OM22D, OM23D, OM24D, OM25S, OR02, OR03D, OR04D, OR06A, OR11, OR13S, OR13D, OR14D, OR19, and OR20
May 13 - 14, 2021	Boron, Chloride, pH	OM01, OM04S, OM07, OM12, OM21, OM22D, OM23D, OM24D, OM25S, OR02, OR03D, OR04D, OR06A, OR11, OR13S, OR13D, OR14D, OR19, and OR20
August 11 - 13, 2021	Boron, Chloride, pH	OM01, OM04S, OM07, OM12, OM21, OM22D, OM23D, OM24D, OM25S, OR02, OR03D, OR04D, OR06A, OR11, OR13S, OR13D, OR14D, OR19, and OR20
November 19, 2021	Boron, Chloride, pH	OM01, OM04S, OM07, OM12, OM21, OM22D, OM23D, OM24D, OM25S, OR02, OR03D, OR04D, OR06A, OR11, OR13S, OR13D, OR14D, OR19, and OR20

[1] Boron and chloride measured as dissolved.

[2] In general, one sample was collected per monitoring well per event.

Evaluation of background groundwater quality will be determined following IEPA's issuance of the operating permit for AP1 and AP2.

Groundwater concentrations from 2015 to 2021 were evaluated in the presentation of the History of Potential Exceedances included in the operating permit application. Groundwater concentrations that exceeded the proposed GWPS are considered potential exceedances because the methodology used to determine them is proposed in the Statistical Analysis Plan, which is pending IEPA approval. Tables summarizing how potential historical exceedances were determined and the potential exceedances themselves are provided in **Appendix A**.

4. PROBLEMS ENCOUNTERED AND ACTIONS TO RESOLVE THE PROBLEMS

The first round of groundwater sampling for compliance with the Part 845 groundwater monitoring program will commence the quarter following IEPA approval and issuance of the operating permit for AP1 and AP2, and in accordance with the GMP.

5. KEY ACTIVITIES PLANNED FOR 2022

The following key activities are planned for 2022:

- Groundwater sampling and reporting for compliance will be initiated the quarter following issuance of the operating permit at all monitoring wells in the approved monitoring well network as presented in the GMP and required by 35 I.A.C. § 845.610(b)(3), including:
  - Monthly groundwater elevations.
  - Quarterly groundwater sampling.

6. REFERENCES

Illinois Environmental Protection Agency (IEPA), 2021. *In the Matter of: Standards for the Disposal of Coal Combustion Residuals in Surface Impoundments: Title 35 Illinois Administration Code 845, Addendum*. April 15, 2021.

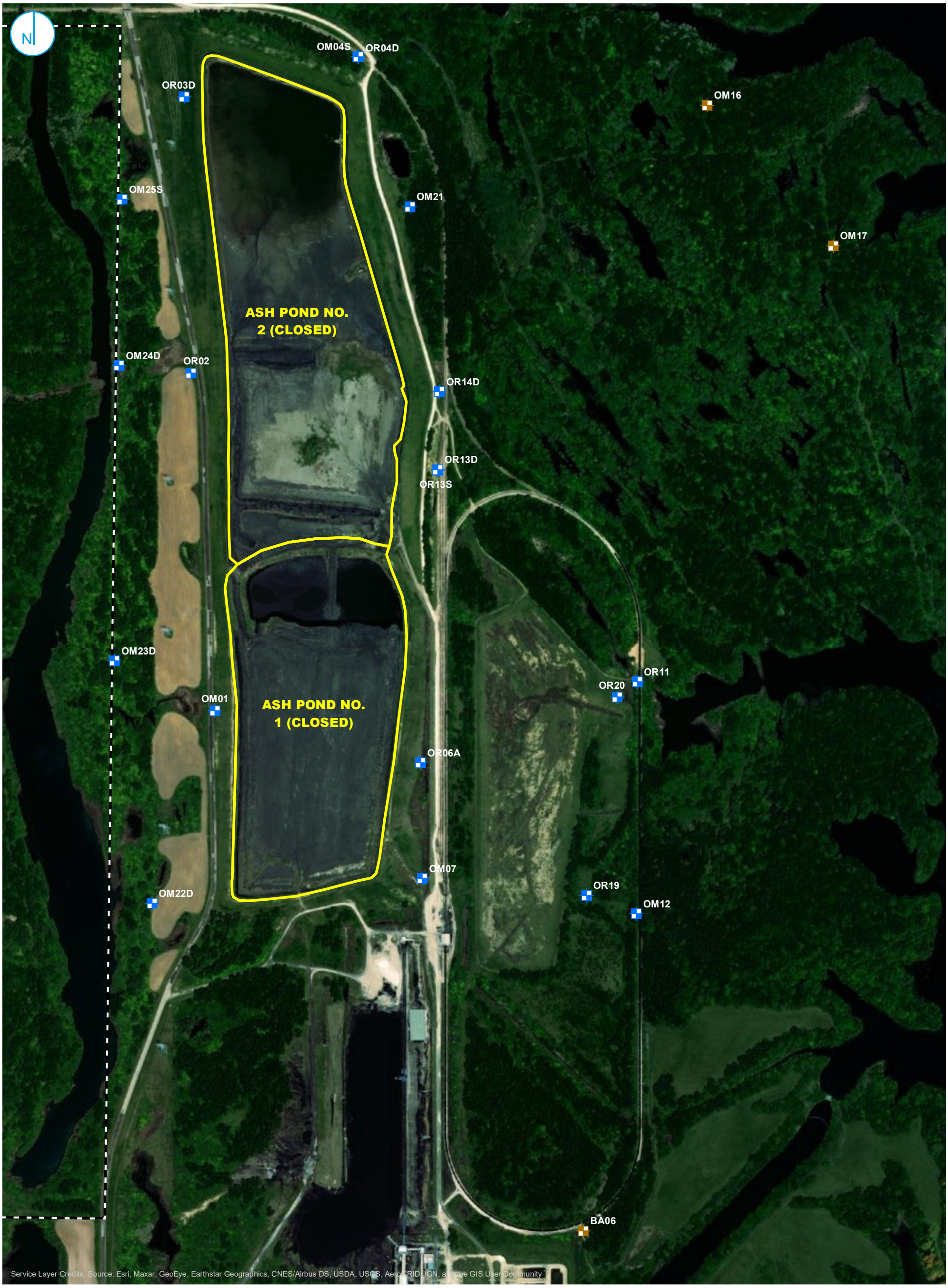
Ramboll Americas Engineering Solutions, Inc. (Ramboll), 2021a. *Addendum to the Groundwater Monitoring Plan. Duck Creek Power Plant, Ash Pond No. 1 and Ash Pond No. 2, Canton, Illinois*. Illinois Power Resources Generating, LLC. October 25, 2021.

Ramboll Americas Engineering Solutions, Inc. (Ramboll), 2021b. *History of Potential Exceedances Duck Creek Power Plant, Ash Pond No. 1 and Ash Pond No. 2, Canton, Illinois*. Illinois Power Resources Generating, LLC. October 25, 2021.

FIGURES

PROJECT: 169000XXXX | DATED: 10/6/2021 | DESIGNER: STOLZSD

Y:\Mapping\Projects\22\2285\MXD\845_Operating_Permit\Duck_Creek\AP12_GMP\Figure 2-1_Proposed 845 GW Monitoring Well Network.mxd



BACKGROUND WELL

COMPLIANCE WELL

PART 845 REGULATED UNIT (SUBJECT UNIT)

PROPERTY BOUNDARY

0 300 600 Feet

PROPOSED PART 845 GROUNDWATER MONITORING WELL NETWORK

2021 GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
ASH POND NO. 1 AND ASH POND NO. 2
DUCK CREEK POWER PLANT
CANTON, ILLINOIS

FIGURE 1

RAMBOLL AMERICAS
ENGINEERING SOLUTIONS, INC.

RAMBOLL

APPENDIX A
HISTORY OF POTENTIAL EXCEEDANCES

HISTORY OF POTENTIAL EXCEEDANCES

This presentation of the History of Potential Exceedances, and any corrective action taken to remediate groundwater, is provided to meet the requirements of Title 35 of the Illinois Administrative Code (35 I.A.C.) § 845.230(d)(2)(M) for the Duck Creek Power Plant Ash Pond No. 1 and Ash Pond No. 2, Illinois Environmental Protection Agency (IEPA) ID Nos. W0578010001-01 and W0578010001-02.

Note

Groundwater concentrations observed from 2015 to 2021 have been evaluated and summarized in the following table and are considered potential exceedances because the methodology used to determine them is proposed in the Statistical Analysis Plan (Appendix A to Groundwater Monitoring Plan [GMP]), which has not been reviewed or approved by IEPA at the time of submittal of the 35 I.A.C. § 845 Operating Permit application.

As noted in the GMP, background concentrations will be calculated after the first eight sampling events following IEPA approval of the GMP. Consequently, for this presentation of potential exceedances, available data (total or dissolved concentrations in groundwater) have been compared to the standards in 35 I.A.C. § 845.600(a)(1). The results are considered potential exceedances because they were compared directly to the standard and did not include an evaluation of background groundwater quality or apply the statistical methodologies proposed in the GMP. Exceedances will be determined following IEPA approval of the GMP and collection of background data. Further, alternate sources for potential exceedances as allowed by 35 I.A.C. § 845.650(e) have not yet been evaluated. These will be evaluated and presented in future submittals to IEPA as appropriate.

Table 1 summarizes the potential exceedances.

Corrective Action

A Closure and Post-Closure Care Plan for Duck Creek Ash Ponds Nos. 1 and 2 (Closure Plan) was submitted to IEPA in March 2016 and approved on November 23, 2016. The Closure Plan indicated that Ash Ponds Nos. 1 and 2 would be closed in place with a with a final cover system of earthen material. Closure construction was completed on December 22, 2020.

TABLE 1. DETERMINATION OF POTENTIAL EXCEEDANCES
HISTORY OF POTENTIAL EXCEEDANCES
DUCK CREEK POWER PLANT
ASH POND NO. 1 AND ASH POND NO. 2
CANTON, ILLINOIS

Location	Sample Date	Boron, dissolved (mg/L)	Chloride, dissolved (mg/L)	pH (field) (SU)	Sulfate, dissolved (mg/L)	Specific Conductance (micromhos/cm)	Temperature (°F)
35 I.A.C. 845.600	Lower	0	0	6.5	0	NA	NA
	Upper	2	200	9.0	400	NA	NA
Class IV Standard		2	SEC	SEC	SEC	NA	NA
OM01	04/17/2015	0.74	22	6.6	**1600**	3390	56.8
OM01	09/14/2015	0.19	21	**6.3**	**1800**	1765	63
OM01	04/26/2016	1.1	31	--	**600**	--	--
OM01	10/25/2016	0.22	22	--	**1500**	--	--
OM01	04/27/2017	0.23	25	--	**2000**	--	--
OM01	10/20/2017	0.44	90	--	**1800**	--	--
OM01	01/31/2018	0.2	28	--	--	--	--
OM01	04/16/2018	0.21	23	--	--	--	--
OM01	07/23/2018	0.19	25	--	--	--	--
OM01	10/22/2018	0.21	30	--	--	--	--
OM01	01/28/2019	0.21	26	--	--	--	--
OM01	04/02/2019	0.49	46	--	--	--	--
OM01	07/05/2019	0.23	29	--	--	--	--
OM01	11/15/2019	0.21	38	--	--	--	--
OM01	01/09/2020	0.21	31	--	--	--	--
OM01	04/15/2020	0.17	27	--	--	--	--
OM01	08/13/2020	0.19	28	--	--	--	--
OM01	11/17/2020	0.94	27	**6.4**	--	3531	55.4
OM01	02/24/2021	0.19	31	6.6	--	3545	51.6
OM01	05/13/2021	0.33	32	7.0	--	3346	59.9
OM01	08/12/2021	0.21	31	**6.3**	--	3343	60.6
OM04S	04/17/2015	1.2	14	6.8	150	1171	56.5
OM04S	09/15/2015	1	13	7.0	160	880	57
OM04S	04/30/2016	0.98	<50	--	220	--	--
OM04S	10/25/2016	0.19	16	--	130	--	--
OM04S	04/28/2017	0.13	18	--	170	--	--
OM04S	10/19/2017	0.063	14	--	140	--	--
OM04S	02/02/2018	0.16	20	--	--	--	--
OM04S	04/16/2018	0.85	15	--	--	--	--
OM04S	07/24/2018	0.16	16	--	--	--	--
OM04S	10/26/2018	0.13	15	--	--	--	--
OM04S	01/28/2019	0.074	16	--	--	--	--
OM04S	04/02/2019	0.14	16	--	--	--	--
OM04S	07/02/2019	0.22	17	--	--	--	--
OM04S	11/15/2019	0.059	15	--	--	--	--
OM04S	01/09/2020	0.094	15	--	--	--	--
OM04S	04/15/2020	0.078	14	--	--	--	--
OM04S	08/13/2020	0.096	14	--	--	--	--
OM04S	11/17/2020	0.047	15	6.7	--	1225	52.7
OM04S	02/23/2021	0.077	18	6.7	--	1156	56.1
OM04S	05/14/2021	0.063	18	7.0	--	1163	61.3
OM04S	08/11/2021	**52**	**630**	6.9	--	1174	56.1
OM07	04/17/2015	1	19	7.0	280	1338	58.5
OM07	09/14/2015	0.43	13	6.9	240	957	64
OM07	04/27/2016	0.39	7.2	--	280	--	--
OM07	10/25/2016	0.37	14	--	270	--	--
OM07	04/27/2017	0.34	14	--	250	--	--
OM07	10/19/2017	0.35	11	--	230	--	--
OM07	02/02/2018	0.43	12	--	--	--	--
OM07	04/16/2018	0.69	13	--	--	--	--
OM07	07/24/2018	0.49	14	--	--	--	--
OM07	10/25/2018	0.53	11	--	--	--	--
OM07	01/28/2019	0.47	10	--	--	--	--
OM07	04/01/2019	0.87	14	--	--	--	--
OM07	07/02/2019	0.67	11	--	--	--	--
OM07	11/15/2019	0.71	11	--	--	--	--
OM07	01/10/2020	0.61	10	--	--	--	--
OM07	04/16/2020	0.47	10	--	--	--	--
OM07	08/17/2020	0.48	9	--	--	--	--
OM07	11/17/2020	0.49	11	7.0	--	1286	53.2
OM07	02/22/2021	1.2	14	7.0	--	1837	50
OM07	05/13/2021	1.2	15	7.0	--	1877	55.8
OM07	08/12/2021	1	13	7.0	--	1174	61.7
OM12	04/17/2015	0.16	6.4	6.6	**480**	1790	55.8
OM12	09/14/2015	0.074	5.4	6.7	400	1669	64
OM12	04/30/2016	0.15	9.9	--	**470**	--	--
OM12	10/31/2016	0.24	7.9	--	**540**	--	--
OM12	04/28/2017	0.14	<10	--	**560**	--	--

TABLE 1. DETERMINATION OF POTENTIAL EXCEEDANCES
HISTORY OF POTENTIAL EXCEEDANCES
DUCK CREEK POWER PLANT
ASH POND NO. 1 AND ASH POND NO. 2
CANTON, ILLINOIS

Location	Sample Date	Boron, dissolved (mg/L)	Chloride, dissolved (mg/L)	pH (field) (SU)	Sulfate, dissolved (mg/L)	Specific Conductance (micromhos/cm)	Temperature (°F)
35 I.A.C. 845.600	Lower	0	0	6.5	0	NA	NA
	Upper	2	200	9.0	400	NA	NA
Class IV Standard		2	SEC	SEC	SEC	NA	NA
OM12	10/20/2017	**6.4**	**320**	--	**420**	--	--
OM12	02/01/2018	**8**	83	--	--	--	--
OM12	04/17/2018	0.13	6.5	--	--	--	--
OM12	07/25/2018	**4**	20	--	--	--	--
OM12	10/25/2018	0.17	6.6	--	--	--	--
OM12	02/04/2019	**3.6**	41	--	--	--	--
OM12	04/09/2019	0.18	16	--	--	--	--
OM12	07/08/2019	0.086	5.9	--	--	--	--
OM12	11/14/2019	0.22	5.1	--	--	--	--
OM12	01/09/2020	0.16	6.2	--	--	--	--
OM12	04/14/2020	**12**	5.2	--	--	--	--
OM12	08/17/2020	0.061	3.5	--	--	--	--
OM12	11/17/2020	0.19	6.1	6.6	--	2055	52.9
OM12	02/22/2021	0.22	4	6.7	--	1923	54.7
OM12	05/13/2021	0.13	6	6.8	--	1951	55.2
OM12	08/13/2021	0.11	2.9	6.6	--	1914	55.7
OM21	04/17/2015	**16**	**500**	7.0	**1300**	4010	56.3
OM21	09/15/2015	**15**	**460**	**6.4**	**1300**	1758	56
OM21	04/30/2016	**13**	**510**	--	**1300**	--	--
OM21	10/31/2016	**15**	**470**	--	**1500**	--	--
OM21	04/28/2017	**13**	**450**	--	**1200**	--	--
OM21	10/20/2017	**14**	**360**	--	**1200**	--	--
OM21	02/01/2018	**12**	**390**	--	--	--	--
OM21	04/16/2018	**13**	**460**	--	--	--	--
OM21	07/25/2018	**13**	**360**	--	--	--	--
OM21	10/25/2018	**16**	180	--	--	--	--
OM21	01/28/2019	**12**	**300**	--	--	--	--
OM21	04/01/2019	**14**	**660**	--	--	--	--
OM21	07/02/2019	1	**330**	--	--	--	--
OM21	11/15/2019	**10**	**390**	--	--	--	--
OM21	01/09/2020	**12**	**380**	--	--	--	--
OM21	04/14/2020	0.064	**320**	--	--	--	--
OM21	08/17/2020	**10**	**280**	--	--	--	--
OM21	11/17/2020	**8.3**	**290**	6.7	--	3682	52.9
OM21	02/23/2021	**9.5**	**310**	6.6	--	3503	50
OM21	05/14/2021	**11**	**290**	6.7	--	3763	57.2
OM21	08/11/2021	**11**	33	6.8	--	3572	58.9
OM22D	04/17/2015	**16**	**460**	6.9	**570**	2580	62.2
OM22D	09/28/2015	**16**	**480**	6.9	**540**	1986	60
OM22D	04/26/2016	**17**	**440**	--	**490**	--	--
OM22D	10/31/2016	**21**	**490**	--	**650**	--	--
OM22D	04/27/2017	**19**	**500**	--	**650**	--	--
OM22D	10/20/2017	**20**	**450**	--	**750**	--	--
OM22D	01/31/2018	**18**	**500**	--	--	--	--
OM22D	04/17/2018	**19**	**490**	--	--	--	--
OM22D	07/23/2018	**27**	**550**	--	--	--	--
OM22D	10/22/2018	**13**	**350**	--	--	--	--
OM22D	01/28/2019	0.27	29	--	--	--	--
OM22D	04/02/2019	**43**	**910**	--	--	--	--
OM22D	07/03/2019	**20**	**410**	--	--	--	--
OM22D	11/14/2019	**25**	**570**	--	--	--	--
OM22D	01/08/2020	**44**	**660**	--	--	--	--
OM22D	04/15/2020	**36**	**720**	--	--	--	--
OM22D	08/17/2020	**25**	**450**	--	--	--	--
OM22D	11/18/2020	**33**	**680**	6.7	--	3481	53.4
OM22D	02/24/2021	**50**	**1000**	6.8	--	4461	53.4
OM22D	05/14/2021	**51**	**1000**	6.7	--	4300	63.7
OM22D	08/13/2021	**48**	**710**	**5.7**	--	3610	56.7
OM23D	04/17/2015	**2.3**	37	6.8	**520**	1668	63.3
OM23D	09/28/2015	**22**	**560**	6.9	**720**	1545	61
OM23D	04/26/2016	**12**	**250**	--	**550**	--	--
OM23D	10/31/2016	**22**	**550**	--	**760**	--	--
OM23D	04/27/2017	**19**	**460**	--	**770**	--	--
OM23D	10/20/2017	**19**	**430**	--	**780**	--	--
OM23D	01/31/2018	**21**	**580**	--	--	--	--
OM23D	04/17/2018	**2.2**	37	--	--	--	--
OM23D	07/23/2018	**29**	**580**	--	--	--	--
OM23D	10/22/2018	1	51	--	--	--	--

TABLE 1. DETERMINATION OF POTENTIAL EXCEEDANCES
HISTORY OF POTENTIAL EXCEEDANCES
DUCK CREEK POWER PLANT
ASH POND NO. 1 AND ASH POND NO. 2
CANTON, ILLINOIS

Location	Sample Date	Boron, dissolved (mg/L)	Chloride, dissolved (mg/L)	pH (field) (SU)	Sulfate, dissolved (mg/L)	Specific Conductance (micromhos/cm)	Temperature (°F)
35 I.A.C. 845.600	Lower	0	0	6.5	0	NA	NA
	Upper	2	200	9.0	400	NA	NA
Class IV Standard		2	SEC	SEC	SEC	NA	NA
OM23D	01/28/2019	**2.2**	190	--	--	--	--
OM23D	04/03/2019	1.9	27	--	--	--	--
OM23D	07/08/2019	**2.6**	29	--	--	--	--
OM23D	11/14/2019	**2.2**	32	--	--	--	--
OM23D	01/08/2020	1.9	28	--	--	--	--
OM23D	04/15/2020	2	26	--	--	--	--
OM23D	08/13/2020	2	26	--	--	--	--
OM23D	11/17/2020	**2.1**	30	6.9	--	1757	54.7
OM23D	02/24/2021	1.9	27	6.9	--	1786	52.5
OM23D	05/13/2021	**2.1**	39	6.9	--	1694	62.4
OM23D	08/13/2021	2	27	**5.8**	--	1697	57.6
OM24D	04/17/2015	**23**	**540**	6.7	**910**	3160	60.4
OM24D	09/28/2015	**20**	**440**	6.7	**770**	2507	61
OM24D	04/26/2016	**20**	**450**	--	**870**	--	--
OM24D	10/31/2016	**20**	**520**	--	**1000**	--	--
OM24D	04/27/2017	**20**	**500**	--	**1000**	--	--
OM24D	10/20/2017	**20**	**400**	--	**780**	--	--
OM24D	01/31/2018	**39**	**960**	--	--	--	--
OM24D	04/17/2018	**28**	**660**	--	--	--	--
OM24D	07/23/2018	**29**	**600**	--	--	--	--
OM24D	10/22/2018	**29**	**660**	--	--	--	--
OM24D	01/28/2019	**12**	**330**	--	--	--	--
OM24D	04/02/2019	**24**	**550**	--	--	--	--
OM24D	07/08/2019	**25**	**450**	--	--	--	--
OM24D	11/14/2019	**27**	**590**	--	--	--	--
OM24D	01/08/2020	**26**	**500**	--	--	--	--
OM24D	04/15/2020	**19**	**350**	--	--	--	--
OM24D	08/13/2020	**19**	**350**	--	--	--	--
OM24D	11/17/2020	**20**	**390**	6.6	--	3028	52.7
OM24D	03/04/2021	**20**	**370**	6.8	--	2897	49.6
OM24D	05/13/2021	**18**	**340**	6.9	--	2614	60.1
OM24D	08/12/2021	**21**	**310**	6.6	--	2643	60.4
OM25S	04/17/2015	**19**	**440**	6.7	**750**	3010	61.3
OM25S	09/28/2015	**22**	**630**	6.7	**770**	2281	60
OM25S	04/26/2016	**20**	**470**	--	**650**	--	--
OM25S	10/31/2016	**25**	**600**	--	**940**	--	--
OM25S	04/27/2017	**23**	**570**	--	**770**	--	--
OM25S	10/20/2017	**17**	**380**	--	**700**	--	--
OM25S	01/31/2018	**29**	**720**	--	--	--	--
OM25S	04/17/2018	**23**	**510**	--	--	--	--
OM25S	07/23/2018	**25**	**490**	--	--	--	--
OM25S	10/22/2018	**2.8**	140	--	--	--	--
OM25S	01/28/2019	**21**	**490**	--	--	--	--
OM25S	04/02/2019	**8.2**	180	--	--	--	--
OM25S	07/03/2019	**21**	**430**	--	--	--	--
OM25S	11/14/2019	**18**	**420**	--	--	--	--
OM25S	01/08/2020	**23**	**520**	--	--	--	--
OM25S	04/15/2020	**24**	**480**	--	--	--	--
OM25S	08/13/2020	**27**	**460**	--	--	--	--
OM25S	11/17/2020	**23**	**530**	6.6	--	3249	54
OM25S	02/24/2021	**30**	**220**	6.5	--	3235	53.6
OM25S	05/13/2021	**41**	**610**	6.8	--	3362	63.9
OM25S	08/12/2021	**33**	**560**	6.5	--	3228	60.3
OR02	04/17/2015	**6.3**	**280**	6.8	340	2710	53.2
OR02	09/14/2015	**4.6**	**230**	6.5	300	1289	66
OR02	04/26/2016	**5**	180	--	240	--	--
OR02	10/31/2016	**5**	**220**	--	270	--	--
OR02	04/27/2017	**3.9**	**210**	--	380	--	--
OR02	10/20/2017	**4.7**	180	--	240	--	--
OR02	02/02/2018	**3.9**	**220**	--	--	--	--
OR02	04/16/2018	**3.1**	43	--	--	--	--
OR02	07/23/2018	**4.1**	**220**	--	--	--	--
OR02	10/22/2018	**4.5**	**230**	--	--	--	--
OR02	01/28/2019	**2.3**	**210**	--	--	--	--
OR02	04/02/2019	**2.6**	**250**	--	--	--	--
OR02	07/05/2019	**4.4**	**210**	--	--	--	--
OR02	11/15/2019	**4.2**	200	--	--	--	--
OR02	01/09/2020	**4**	200	--	--	--	--

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DUCK CREEK POWER PLANT
ASH POND NO. 1 AND ASH POND NO. 2
CANTON, ILLINOIS

Location	Sample Date	Boron, dissolved (mg/L)	Chloride, dissolved (mg/L)	pH (field) (SU)	Sulfate, dissolved (mg/L)	Specific Conductance (micromhos/cm)	Temperature (°F)
35 I.A.C. 845.600	Lower	0	0	6.5	0	NA	NA
	Upper	2	200	9.0	400	NA	NA
Class IV Standard		2	SEC	SEC	SEC	NA	NA
OR02	04/15/2020	**4**	**210**	--	--	--	--
OR02	08/13/2020	**3.9**	**210**	--	--	--	--
OR02	11/17/2020	**4.9**	**210**	6.8	--	1942	54.5
OR02	02/24/2021	**4.1**	4.1	6.7	--	2009	54.5
OR02	05/13/2021	**3.8**	**240**	7.0	--	1987	57.6
OR02	08/12/2021	**5.3**	**220**	6.6	--	1884	59.4
OR03D	04/17/2015	**3.1**	82	6.9	390	1653	59
OR03D	09/14/2015	**5**	150	6.6	350	1617	63
OR03D	04/26/2016	**2.5**	78	--	330	--	--
OR03D	10/31/2016	**2.7**	79	--	390	--	--
OR03D	04/27/2017	**2.5**	77	--	380	--	--
OR03D	10/20/2017	**2.1**	88	--	**420**	--	--
OR03D	02/02/2018	**2.1**	73	--	--	--	--
OR03D	04/16/2018	**2.6**	67	--	--	--	--
OR03D	07/23/2018	**2.6**	74	--	--	--	--
OR03D	10/25/2018	**2.5**	65	--	--	--	--
OR03D	01/28/2019	0.47	20	--	--	--	--
OR03D	04/03/2019	2	65	--	--	--	--
OR03D	07/05/2019	**5.9**	**230**	--	--	--	--
OR03D	11/15/2019	**5.9**	**240**	--	--	--	--
OR03D	01/10/2020	**14**	**560**	--	--	--	--
OR03D	04/14/2020	**34**	**890**	--	--	--	--
OR03D	08/13/2020	**28**	**660**	--	--	--	--
OR03D	11/17/2020	**27**	**600**	6.6	--	2915	49.1
OR03D	02/25/2021	**49**	**1100**	6.5	--	4745	54.5
OR03D	05/14/2021	**45**	**1200**	6.8	--	4855	64.4
OR03D	08/13/2021	**48**	**1100**	6.6	--	4541	58.5
OR04D	04/17/2015	**18**	**210**	8.7	**610**	1474	57
OR04D	09/15/2015	**11**	130	**6.4**	**690**	1280	56
OR04D	04/30/2016	**9.6**	**250**	--	**1400**	--	--
OR04D	10/25/2016	**8.6**	100	--	**540**	--	--
OR04D	04/28/2017	**7.5**	98	--	**460**	--	--
OR04D	10/19/2017	**5.6**	76	--	400	--	--
OR04D	02/02/2018	**7.6**	86	--	--	--	--
OR04D	04/16/2018	**11**	120	--	--	--	--
OR04D	07/24/2018	**7.2**	72	--	--	--	--
OR04D	10/26/2018	**9.5**	99	--	--	--	--
OR04D	01/28/2019	**26**	**310**	--	--	--	--
OR04D	04/02/2019	**36**	**500**	--	--	--	--
OR04D	07/02/2019	**50**	**330**	--	--	--	--
OR04D	11/15/2019	**54**	**670**	--	--	--	--
OR04D	01/09/2020	**47**	**560**	--	--	--	--
OR04D	04/15/2020	**30**	**360**	--	--	--	--
OR04D	08/13/2020	**44**	**490**	--	--	--	--
OR04D	11/17/2020	**87**	**840**	6.6	--	4647	54.9
OR04D	02/25/2021	**88**	**990**	6.8	--	5114	56.1
OR04D	05/14/2021	**44**	**620**	7.0	--	3876	63.7
OR04D	08/11/2021	0.089	16	6.8	--	4215	58
OR06A	04/17/2015	1.5	32	6.8	380	1488	60.8
OR06A	09/14/2015	1.4	31	6.8	320	900	65
OR06A	04/27/2016	1.1	31	--	340	--	--
OR06A	10/25/2016	1.3	32	--	320	--	--
OR06A	04/27/2017	1.2	33	--	310	--	--
OR06A	10/19/2017	1.1	31	--	270	--	--
OR06A	02/02/2018	1.2	35	--	--	--	--
OR06A	04/17/2018	1	33	--	--	--	--
OR06A	07/24/2018	1.3	34	--	--	--	--
OR06A	10/25/2018	1.3	34	--	--	--	--
OR06A	01/28/2019	0.72	16	--	--	--	--
OR06A	04/09/2019	0.74	15	--	--	--	--
OR06A	07/03/2019	0.64	15	--	--	--	--
OR06A	11/15/2019	1.6	33	--	--	--	--
OR06A	01/10/2020	0.72	15	--	--	--	--
OR06A	04/16/2020	0.55	12	--	--	--	--
OR06A	03/04/2021	0.82	30	6.8	--	1524	54.1
OR06A	05/14/2021	0.98	65	7.2	--	1555	62.1
OR06A	08/12/2021	**17**	**210**	6.7	--	1919	62.2
OR11	04/17/2015	**4.1**	27	7.2	140	880	62.2

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Location	Sample Date	Boron, dissolved (mg/L)	Chloride, dissolved (mg/L)	pH (field) (SU)	Sulfate, dissolved (mg/L)	Specific Conductance (micromhos/cm)	Temperature (°F)
35 I.A.C. 845.600	Lower	0	0	6.5	0	NA	NA
	Upper	2	200	9.0	400	NA	NA
Class IV Standard		2	SEC	SEC	SEC	NA	NA
OR11	09/14/2015	**5.8**	46	7.1	140	916	62
OR11	04/30/2016	**3.4**	27	--	140	--	--
OR11	10/31/2016	**3.9**	30	--	200	--	--
OR11	04/28/2017	**4**	26	--	160	--	--
OR11	10/20/2017	0.19	17	--	360	--	--
OR11	02/01/2018	0.34	6	--	--	--	--
OR11	04/17/2018	**5.6**	53	--	--	--	--
OR11	07/25/2018	0.087	5.5	--	--	--	--
OR11	10/25/2018	**5.8**	39	--	--	--	--
OR11	02/04/2019	0.12	57	--	--	--	--
OR11	04/09/2019	**2.8**	13	--	--	--	--
OR11	07/05/2019	**5.4**	28	--	--	--	--
OR11	11/14/2019	**6.3**	48	--	--	--	--
OR11	01/09/2020	**7.6**	44	--	--	--	--
OR11	04/14/2020	**4.7**	33	--	--	--	--
OR11	08/17/2020	**6.6**	39	--	--	--	--
OR11	11/17/2020	**7.3**	59	7.1	--	1132	53.2
OR11	02/22/2021	**8.4**	74	7.1	--	1147	50.7
OR11	05/14/2021	**5.1**	58	7.1	--	793	55.6
OR11	08/12/2021	**6.3**	39	7.2	--	916	58.3
OR13S	04/17/2015	**4.6**	120	7.0	290	1778	60.3
OR13S	09/14/2015	**9**	170	7.0	290	1800	62
OR13S	04/27/2016	**3.6**	120	--	270	--	--
OR13S	10/25/2016	**3.9**	110	--	260	--	--
OR13S	04/28/2017	**4**	130	--	320	--	--
OR13S	10/19/2017	**3.5**	110	--	250	--	--
OR13S	02/01/2018	**3.9**	120	--	--	--	--
OR13S	04/17/2018	**3.4**	91	--	--	--	--
OR13S	07/24/2018	**2.4**	40	--	--	--	--
OR13S	10/25/2018	**2.4**	110	--	--	--	--
OR13S	01/28/2019	**4.1**	110	--	--	--	--
OR13S	04/01/2019	**3.7**	89	--	--	--	--
OR13S	07/02/2019	**4.1**	120	--	--	--	--
OR13S	11/15/2019	**4.4**	140	--	--	--	--
OR13S	01/10/2020	**4.5**	140	--	--	--	--
OR13S	04/15/2020	**4**	130	--	--	--	--
OR13S	08/17/2020	**3.7**	140	--	--	--	--
OR13S	11/17/2020	**3.9**	140	6.9	--	2024	54.9
OR13S	02/23/2021	**4.1**	150	6.8	--	2113	54
OR13S	05/14/2021	**4.5**	140	6.9	--	2358	54.7
OR13S	08/11/2021	**4.2**	130	7.0	--	2032	58
OR13D	04/17/2015	**3**	41	7.3	330	1597	59
OR13D	09/14/2015	**2.3**	34	7.3	290	1460	63
OR13D	04/27/2016	**3.2**	48	--	330	--	--
OR13D	10/25/2016	**2.5**	37	--	330	--	--
OR13D	04/28/2017	**2.4**	37	--	310	--	--
OR13D	10/19/2017	1.9	32	--	300	--	--
OR13D	02/01/2018	**2.3**	40	--	--	--	--
OR13D	04/17/2018	2	35	--	--	--	--
OR13D	07/24/2018	**3.8**	99	--	--	--	--
OR13D	10/25/2018	**4.4**	36	--	--	--	--
OR13D	01/28/2019	**2.1**	35	--	--	--	--
OR13D	04/01/2019	**2.2**	42	--	--	--	--
OR13D	07/02/2019	**2.3**	34	--	--	--	--
OR13D	11/15/2019	**2.3**	39	--	--	--	--
OR13D	01/10/2020	**2.1**	43	--	--	--	--
OR13D	04/16/2020	2	37	--	--	--	--
OR13D	08/17/2020	1.9	38	--	--	--	--
OR13D	11/17/2020	1.8	40	7.0	--	1882	54.1
OR13D	02/23/2021	1.9	45	6.9	--	1878	54.5
OR13D	05/13/2021	2	63	7.0	--	1896	59.3
OR13D	08/11/2021	2	40	7.1	--	1907	58.4
OR14D	04/17/2015	**7.1**	<100	7.3	**690**	1631	57.4
OR14D	09/15/2015	**6.3**	92	6.6	**650**	1237	60
OR14D	04/27/2016	**5.9**	100	--	**690**	--	--
OR14D	10/25/2016	**5.6**	61	--	**920**	--	--
OR14D	04/28/2017	**5.3**	89	--	**570**	--	--
OR14D	10/20/2017	**4.6**	79	--	**680**	--	--

TABLE 1. DETERMINATION OF POTENTIAL EXCEEDANCES
HISTORY OF POTENTIAL EXCEEDANCES
DUCK CREEK POWER PLANT
ASH POND NO. 1 AND ASH POND NO. 2
CANTON, ILLINOIS

Location	Sample Date	Boron, dissolved (mg/L)	Chloride, dissolved (mg/L)	pH (field) (SU)	Sulfate, dissolved (mg/L)	Specific Conductance (micromhos/cm)	Temperature (°F)
35 I.A.C. 845.600	Lower	0	0	6.5	0	NA	NA
	Upper	2	200	9.0	400	NA	NA
Class IV Standard		2	SEC	SEC	SEC	NA	NA
OR14D	02/01/2018	**5.3**	92	--	--	--	--
OR14D	04/16/2018	**4.7**	88	--	--	--	--
OR14D	07/25/2018	**5.4**	90	--	--	--	--
OR14D	10/26/2018	**4.1**	72	--	--	--	--
OR14D	01/28/2019	**5.7**	63	--	--	--	--
OR14D	04/01/2019	**5.9**	70	--	--	--	--
OR14D	07/02/2019	**6.2**	68	--	--	--	--
OR14D	11/15/2019	**4.2**	36	--	--	--	--
OR14D	01/10/2020	**4.2**	40	--	--	--	--
OR14D	04/16/2020	**3.9**	37	--	--	--	--
OR14D	08/17/2020	**3.2**	38	--	--	--	--
OR14D	11/17/2020	**3.3**	34	6.9	--	1918	54.9
OR14D	02/23/2021	**21**	**550**	6.7	--	3425	61.2
OR14D	05/14/2021	**17**	**420**	6.8	--	3115	59.1
OR14D	08/12/2021	**18**	**290**	6.6	--	2648	60.1
OR19	04/17/2015	**20**	**240**	6.8	**990**	2870	63.1
OR19	09/14/2015	**14**	130	6.7	**730**	1939	63
OR19	04/30/2016	**12**	150	--	**750**	--	--
OR19	10/31/2016	**14**	150	--	**990**	--	--
OR19	04/28/2017	**15**	170	--	**740**	--	--
OR19	10/20/2017	**13**	**290**	--	**840**	--	--
OR19	02/01/2018	**13**	170	--	--	--	--
OR19	04/17/2018	**13**	140	--	--	--	--
OR19	07/25/2018	**15**	140	--	--	--	--
OR19	10/26/2018	**11**	**340**	--	--	--	--
OR19	02/04/2019	**19**	**260**	--	--	--	--
OR19	04/09/2019	**15**	160	--	--	--	--
OR19	07/08/2019	**13**	100	--	--	--	--
OR19	11/14/2019	**13**	160	--	--	--	--
OR19	01/09/2020	**15**	170	--	--	--	--
OR19	04/14/2020	**12**	130	--	--	--	--
OR19	08/17/2020	**13**	120	--	--	--	--
OR19	11/17/2020	**13**	140	6.6	--	2659	52.9
OR19	02/22/2021	**19**	200	6.8	--	2845	54
OR19	05/13/2021	**14**	180	6.8	--	2605	61.1
OR19	08/12/2021	**16**	140	6.7	--	2551	56.4
OR20	04/17/2015	**74**	**740**	6.9	**620**	3520	60.1
OR20	09/14/2015	**65**	**730**	6.9	**550**	2231	63
OR20	04/30/2016	**55**	**760**	--	**570**	--	--
OR20	10/31/2016	**36**	**770**	--	**720**	--	--
OR20	04/28/2017	**76**	**780**	--	**570**	--	--
OR20	10/20/2017	**66**	**640**	--	**490**	--	--
OR20	02/01/2018	**72**	**910**	--	--	--	--
OR20	04/17/2018	**86**	**790**	--	--	--	--
OR20	07/25/2018	**57**	**590**	--	--	--	--
OR20	10/25/2018	**70**	**590**	--	--	--	--
OR20	02/04/2019	**57**	95	--	--	--	--
OR20	04/09/2019	**56**	**620**	--	--	--	--
OR20	07/05/2019	**65**	**590**	--	--	--	--
OR20	11/14/2019	**51**	**550**	--	--	--	--
OR20	01/09/2020	**56**	**560**	--	--	--	--
OR20	04/14/2020	**47**	**550**	--	--	--	--
OR20	08/17/2020	**46**	**530**	--	--	--	--
OR20	11/17/2020	**38**	**480**	6.9	--	2943	54.1
OR20	02/22/2021	**42**	**530**	6.9	--	2978	52.3
OR20	05/14/2021	**40**	**460**	7.0	--	2795	58.3
OR20	08/12/2021	**46**	**440**	7.0	--	2737	56.5

TABLE 1. DETERMINATION OF POTENTIAL EXCEEDANCES
HISTORY OF POTENTIAL EXCEEDANCES
DUCK CREEK POWER PLANT
ASH POND NO. 1 AND ASH POND NO. 2
CANTON, ILLINOIS

Location	Sample Date	Boron, dissolved (mg/L)	Chloride, dissolved (mg/L)	pH (field) (SU)	Sulfate, dissolved (mg/L)	Specific Conductance (micromhos/cm)	Temperature (°F)
35 I.A.C. 845.600	Lower	0	0	6.5	0	NA	NA
	Upper	2	200	9.0	400	NA	NA
Class IV Standard		2	SEC	SEC	SEC	NA	NA

Notes:

1. AP1 and AP2 are located within a previously mined area and monitoring has demonstrated that the groundwater is not capable of consistently meeting the standards for Class I - Potable Resource Groundwater (35 I.A.C. § 620.410) or Class II - General Resource Groundwater (35 I.A.C. § 620.420). Therefore, the applicable classification of groundwater at AP1 and AP2 is Class IV - Other Groundwater (35 I.A.C. § 620.420(g))

2. Potential Exceedances presented on this table were determined by comparing dissolved or total concentration results directly to 35 I.A.C. § 845.600 Groundwater Protection Standards (GWPS). The results are considered potential exceedances because concentrations were compared directly to the standard, background data are not available which did not allow for the application of statistical methodologies in accordance with 35 I.A.C 845.640, and potential alternative sources have not been presented. Following Illinois Environmental Protection Agency approval, exceedances will be determined in accordance with the Addendum to the Groundwater Monitoring Plan Ash Pond No. 1 and Ash Pond No. 2 (Ramboll, 2021) included in the Operating Permit to which this history of potential exceedances is attached.

Detected at concentration greater than the GWPS and applicable Class IV Standard.
Detected at concentration greater than the 845.600 GWPS
-- = data not available
< = concentration is less than the concentration shown, which corresponds to the reporting limit for the method. Estimated concentrations below the reporting limit and associated qualifiers are not provided since they are not utilized in statistics to determine exceedances above Part 845 standards.
°F = degrees Fahrenheit
35 I.A.C. 845.600 = Residuals in Surface Impoundments: Title 35 of the Illinois Administrative Code § 845
Class IV Standard = Groundwater Quality: Title 35 of the Illinois Administrative Code § 620.440
cm = centimeter
mg/L = milligrams per liter
NA = no standard applicable
SEC = Standard is the existing concentrations
SU = standard units