



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

January 28, 2023

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

Re: Duck Creek Bottom Ash Basin (IEPA ID: W0578010001-03) 2022 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 Bottom Ash Basin (IEPA ID: W0578010001-03), as enclosed.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Dianna Tickner', is written over a light blue horizontal line.

Dianna Tickner
Sr. Director Decommissioning & Demolition

Enclosures

Annual Consolidated Report
Illinois Power Resources Generating, LLC
Duck Creek Power Plant
Bottom Ash Basin; IEPA ID: **W0578010001-03**

In accordance with 35 IAC § 845.550, Illinois Power Resources Generating, LLC (IPRG) has prepared the annual consolidated report. The report is provided in three 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 Duck Creek Power Plant

Prepared for:




Illinois Power Resources Generating, LLC

**Duck Creek Power Plant
17751 North Cilco Road
Canton, IL 61520**

December 2022

**Duck Creek Power Plant
ANNUAL CCR FUGITIVE DUST CONTROL REPORT**

Reporting Year: 4th Quarter 2021 through 3rd Quarter 2022

Approved by:  Sr. Director, Decommissioning & Demolition

Name Title

This Annual CCR Fugitive Dust Control Report has been prepared for the Duck Creek 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 Duck Creek 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 is conditioned before emplacement.
	Cover exposed dry CCR in the landfill.
	Wet management of CCR bottom ash and flue gas desulfurization materials 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.
Handling of CCR at the facility	Wet sluice CCR bottom ash and flue gas desulfurization materials to CCR surface impoundments.
	CCR bottom ash removed from CCR surface impoundments and loaded into trucks for transport remains conditioned during handling.
	Pneumatically convey dry CCR fly ash to storage silos in an enclosed system.

**Duck Creek Power Plant
ANNUAL CCR FUGITIVE DUST CONTROL REPORT**

CCR Activity	Actions Taken to Control CCR Fugitive Dust
Handling of CCR at the facility	CCR to be emplaced in the landfill is 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 a telescoping chute.
	Maintain and operate the bin vent filters on each CCR fly ash silo as needed during fly ash loadout.
	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 from the CCR fly ash silos to be emplaced in the landfill is conditioned before emplacement.
	Cover or enclose trucks used to transport CCR fly ash.
	Limit the speed of vehicles to no more than 15 mph on facility roads.
	Cover or enclose trucks used to transport CCR other than fly ash, as necessary.
	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.

The Illinois Environmental Protection Agency rule 35 IAC 212.314 does not require fugitive dust controls when the wind speed is greater than 25 mph.

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.

Duck Creek ceased operation in December of 2019. Not all the CCR activities that are listed in the table occurred after the plant was permanently shut down. For the activities that did occur, the actions taken to control CCR Fugitive Dust that are listed in the table were followed and were adequate to effectively minimize fugitive dust.

**Duck Creek Power Plant
ANNUAL CCR FUGITIVE DUST CONTROL REPORT**

Section 2 Record of Citizen Complaints

No citizen complaints were received regarding CCR fugitive dust at Duck Creek 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	Duck Creek Power Station Fulton County, Illinois 61520 9/13/2022
Operator Name / Address	Luminant Generation Company LLC 6555 Sierra Drive, Irving, TX 75039
CCR unit	Bottom Ash Basin

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.	Based on a review of the CCR unit's records and visual observation during the on-site inspection, no changes in geometry of the structure have taken place since the previous annual inspection.
(b)(2)(B) The location and type of existing instrumentation and the maximum recorded readings of each instrument since the previous annual inspection	None
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	Approximately 18 acre-feet
(b)(2)(E) The approximate volume of the impounded water and CCR contained in the unit at the time of the inspection.	Zero
(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))

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 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: 11/30/2023
Date: 12/20/2022

Site Name: Duck Creek Power Station

CCR Unit: Bottom Ash Basin

35 IAC § 845.540 (b)(2)(B)		
Instrument ID #	Type	Maximum recorded reading since previous annual inspection (ft)
None		

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				0		0

Section 3

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

Prepared for
Illinois Power Resources Generating, LLC

Date
January 31, 2023

Project No.
1940102203-006

**2022 35 I.A.C. § 845 ANNUAL
GROUNDWATER MONITORING AND
CORRECTIVE ACTION REPORT
BOTTOM ASH BASIN
DUCK CREEK POWER PLANT
CANTON, ILLINOIS
IEPA ID NO. W0578010001-03**

**2022 35 I.A.C. § 845 ANNUAL GROUNDWATER
MONITORING AND CORRECTIVE ACTION REPORT**
DUCK CREEK POWER PLANT BOTTOM ASH BASIN

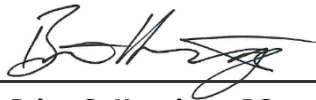
Project name **Duck Creek Power Plant Bottom Ash Basin**
Project no. **1940102203-006**
Recipient **Illinois Power Resources Generating, LLC**
Document type **Annual Groundwater Monitoring and Corrective Action Report**
Version **FINAL**
Date **January 31, 2023**
Prepared by **Scott S. Woods**
Checked by **Lauren D. Cook**
Approved by **Brian G. Hennings, PG**
Description **Annual Report in Support of 35 I.A.C. § 845**

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Scott S. Woods
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FIGURES

Figure 1 Proposed Groundwater Monitoring Well Network

ACRONYMS AND ABBREVIATIONS

§	Section
35 I.A.C.	Title 35 of the Illinois Administrative Code
BAB	Bottom Ash Basin
CCA	compliance commitment agreement
CCR	coal combustion residuals
DCPP	Duck Creek Power Plant
GMP	Groundwater Monitoring Plan
GWPS	groundwater protection standard
ID	identification
IEPA	Illinois Environmental Protection Agency
IPRG	Illinois Power Resources Generating, LLC
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.) Section (§) 845.610(e) (*Annual Groundwater Monitoring and Corrective Action Report*) for the Bottom Ash Basin (BAB) located at Duck Creek Power Plant (DCPP) near Canton, Illinois. The BAB is recognized by coal combustion residuals (CCR) unit identification (ID) number (No.) 205, Illinois Environmental Protection Agency (IEPA) ID No. W0578010001-03, and National Inventory of Dams (NID) No. IL50716.

As required by 35 I.A.C. § 845: Standards for the Disposal of Coal Combustion Residuals in Surface Impoundments, an operating permit application for the BAB was submitted by Illinois Power Resources Generating, LLC (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 35 I.A.C. § 845 compliance groundwater monitoring program at the BAB has not been initiated. IPRG will enter into a compliance commitment agreement (CCA) with IEPA prior to initiating groundwater monitoring. Groundwater monitoring in accordance with the proposed groundwater monitoring plan and sampling methodologies provided in the operating permit application for the BAB is scheduled to commence no later than the second quarter of 2023. After the BAB 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 surface impoundment (SI) under other existing permit programs will become void upon issuance of an approved operating permit pursuant to 35 I.A.C § 845.

This report summarizes the information collected in 2022 for the BAB, 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 BAB (**Figure 1**).

1. INTRODUCTION

This report has been prepared by Ramboll Americas Engineering Solutions, Inc. (Ramboll) on behalf of IPRG, to provide the information required by 35 I.A.C. § 845.610(e) for the BAB located at DCPD near Canton, Illinois. The owner or operator of a CCR 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:

- A. A map, aerial image, or diagram showing the CCR SI and all background (or upgradient) and downgradient monitoring wells, including the well identification numbers, that are part of the groundwater monitoring program for the CCR SI, and a visual delineation of any exceedances of the [groundwater protection standard] GWPS.
- 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.
- C. A potentiometric surface map for each groundwater elevation sampling event required by 35 I.A.C. § 845.650(b)(2).
- 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 well, and the dates the samples were collected.
- E. A narrative discussion of any statistically significant increases (SSIs) over background levels for the constituents listed in 35 I.A.C. § 845.600.
- 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. At a minimum, the summary must:

- A. Specify whether groundwater monitoring data shows a SSI over background concentrations for one or more constituents listed in 35 I.A.C. § 845.600.
- B. Identify those constituents having a 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 summarizes the information collected in 2022 for the BAB, 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 BAB (**Figure 1**).

2. MONITORING AND CORRECTIVE ACTION PROGRAM STATUS

An operating permit application for the BAB 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 35 I.A.C. § 845 groundwater monitoring program at the BAB has not been initiated. IPRG will enter into a CCA with IEPA prior to initiating groundwater monitoring. Groundwater monitoring in accordance with the proposed groundwater monitoring plan and sampling methodologies provided in the operating permit application for the BAB is scheduled to commence no later than the second quarter of 2023. After the BAB 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.

3. KEY ACTIONS COMPLETED IN 2022

The proposed 35 I.A.C. § 845 monitoring well network is presented in **Figure 1**. Groundwater monitoring activities as required by other State and Federal programs are summarized in the groundwater monitoring plan (GMP; Ramboll, 2021).

4. PROBLEMS ENCOUNTERED AND ACTIONS TO RESOLVE THE PROBLEMS

Groundwater monitoring in accordance with the proposed groundwater monitoring plan using sampling methodologies provided in the operating permit application for the BAB is scheduled to commence no later than the second quarter of 2023. After the BAB has been issued an approved operating permit, groundwater monitoring shall be conducted in accordance with that operating permit.

5. KEY ACTIVITIES PLANNED FOR 2023

The following key activities are planned for 2023:

- Groundwater monitoring in accordance with the proposed groundwater monitoring plan and sampling methodologies provided in the operating permit application for the BAB is scheduled to commence no later than the second quarter of 2023. After the BAB 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. Groundwater monitoring will include:
 - Monthly groundwater elevations
 - Quarterly groundwater sampling
- Pressure transducers equipped with data loggers are being purchased for measurement of monthly water level elevations. Deployment of the transducers, monitoring well inspections, and redevelopment of the monitoring wells will be completed prior to initiating groundwater monitoring in the second quarter of 2023.

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), 2021. *Groundwater Monitoring Plan*. Duck Creek Power Plant, Bottom Ash Basin, Canton, Illinois. Illinois Power Resources Generating, LLC. October 25, 2021.

FIGURES

PROJECT: 169000XXXXX | DATED: 9/24/2021 | DESIGNER: STOLZSD
Y:\Mapping\Projects\22\2285\MXD\845_Operating_Permit\Buck_Creek\BAB\GMP\Figure 2-1_Proposed 845 GW Monitoring Well Network.mxd



- BACKGROUND WELL
- COMPLIANCE WELL
- PART 845 REGULATED UNIT (SUBJECT UNIT)

0 50 100 Feet

PROPOSED PART 845 GROUNDWATER MONITORING WELL NETWORK

ANNUAL GROUNDWATER MONITORING AND
CORRECTIVE ACTION REPORT
BOTTOM ASH BASIN
DUCK CREEK POWER PLANT
CANTON, ILLINOIS

FIGURE 1

RAMBOLL AMERICAS
ENGINEERING SOLUTIONS, INC.

