ANDREWS ENGINEERING

3300 Ginger Creek Drive | 217.787.2334
Springfield, IL 62711

LETTER OF TRANSMITTAL

Ex. D14

TO: Mr. Darin LeCrone, P.E.
Manager, Permit Section
Division of Water Pollution Control
1021 North Grand Ave. East
Springfield, IL 62794 - 9276

Date: 9/9/2024	Job No.: Log No. 2021-100001
Re: Springfield CWLP	

We Are Sending You:

Copies	Date	No.	Description
1	9-09-2024	Log No. 2021-100001	Response to Agency comments regarding Log No. 2021-100001

THESE ARE TRANSMITTED as checked below:

Alicia Squire
BOW Admin

RECEIVED
SEP 09 2024
IEPA
BOW/WPC/PERMIT SECTION

☐ For approval ☒ For your use ☐ As requested

☐ For review and comment ☐ Return by _____

☐ Other: _____

REMARKS: This is a response to Agency comments for Application Log No. 2021-100001, which includes the Hydrogeolic Report, Groundwater Monitoring Program and Statistical Procedures, and the Geotechnical Investigation Report for Unstable Areas Demonstration, Safety Factor and Liquefaction Analysis for Coal Combustion Residuals Surface Impoundments.

Copies: 1

By: Brad Hunsberger

J:\S\Springfield CWLP\Letter of Transmittal - CWLP BOW 9-09-24.doc

CITY WATER, LIGHT AND POWER
CITY OF SPRINGFIELD, ILLINOIS
MISTY BUSCHER, MAYOR
DOUG BROWN, CHIEF UTILITY ENGINEER

September 9, 2024

Mr. Darin LeCrone, P.E.
Manager, Permit Section
Division of Water Pollution Control
1021 North Grand Avenue East
PO Box 19276
Springfield, IL 62794-9276

Re: City Water, Light and Power – Lakeside and Dallman Ash Ponds
Log No. 2021-100001
Bureau ID #W1671200052
Coal Combustion Residuals Surface Impoundment Operating and Construction Permit Application Review Letter

Dear Mr. LeCrone:

Provided herein are responses and/or supporting documentation to address the comments in the Coal Combustion Residuals (CCR) Surface Impoundment Operating and Construction Permit Application Review Letter dated October 10, 2023 and the Comments on Statistical Methods Proposed in Initial Operating Permit dated January 17, 2024. The responses are provided in Attachment A and Attachment B, respectively. Application forms and certifications were provided in the original Operating Permit Application received by the Illinois EPA on October 28, 2021 and the Closure Construction Permit Application received by the Illinois EPA on February 1, 2022.

Documents cited in this response previously submitted separately to Illinois EPA as well as cited documents posted to our public Illinois CCR Rule Compliance and Data Information web site at www.cwlp.com/IllinoisCCRCompliance.aspx are incorporated by reference in this response and are intended to amend the original applications. Where needed, direct links to the web site are provided. For ease of reference and review, each of the comments received from Illinois EPA have been sequentially numbered.

As indicated in or response, City Water, Light & Power (CWLP) has completed a comprehensive geotechnical and environmental investigation of the surface impoundments between October 2023 and May 2024 to address comments presented by Illinois EPA in the referenced review letters. This information has been used to update the analysis of chemical constituents within the CCR surface impoundments, obtain geotechnical information of the soils beneath the CCR surface impoundments and update our *Hydrogeologic Report, Groundwater Monitoring Program and Statistical Procedures*.

Dewatering and CCR material stabilization studies were initiated in April 2024 and are anticipated to continue into 2025. Information obtained from these studies will be used to update our pending Closure Construction Permit Application.

CWLP is unsure what information Illinois EPA is seeking in some of their comments and has responded as such. We would appreciate the opportunity for clarification or additional information so that we can address the comments accordingly.

If you have any questions or need additional information please contact Eric Staley of my staff at 217-757-8610 (ext. 1102).

Sincerely,

PJ Becker
Environmental Health and Safety Manager

Cc: Andrews Engineering

ATTACHMENT A
Responses to October 10, 2023
CCR Surface Impoundment Operating and Construction Permit Application Review Letter

1 INITIAL OPERATING PERMIT APPLICATION

1.1 History of Construction [35 Ill. Adm. Code 845.230(d)(2)(A)]

1.1.1 A survey of the extents of the Lakeside Ash Pond and Dallman Ash Pond and the data inputs that were utilized to create the final cover area estimates must be provided.

Response:

CWLP disagrees that a survey of the extents of the surface impoundments and data inputs utilized to create final cover area estimates are required as part of the History of Construction Report per 35 Ill. Adm. Code 845.220(a)(1) and requests clarification on this comment.

Available construction documentation of the Lakeside Ash Pond and Dallman Ash Pond were provided in the February 1, 2022 Closure Construction Permit Application. The extents of the Lakeside Ash Pond and Dallman Ash Pond were based on multiple surveys defining the extents of the perimeter berms for the impoundments. These include on-site surveys as well as aerial surveys. LiDAR surveys were conducted most recently in 2018 and 2023. The extent of the impoundments have not changed since construction of the berms.

The final cover design was based on the October 15, 2018 LiDAR survey. Drawings containing that information were provided in the Plans and Specifications located in Attachment 8 to the Closure Construction Permit Application.

Final cover construction details will be provided in a Construction Certification Report which will be signed and sealed by a licensed professional engineer in the State of Illinois.

In the meantime, now that no additional CCR or non-CCR material will be sent to the surface impoundments, CWLP has been able to engage an engineering firm to evaluate dewatering and material stabilization studies as well as evaluation of cover designs and options that will be used to update the final cover design provided to the Agency.

1.1.2 Impacts of the FEMA flood zone on the foundation and construction of the current CCR surface impoundment must be evaluated.

Response

The current FEMA flood zone map is inaccurate. The flood zone highlighted by FEMA is based on topographic contours from a USGS quadrangle map from 1965, which did not show the Lakeside impoundment that existed at that time. The Dallman Ash Pond was not shown as it had not been constructed yet. However, the FEMA floodplain elevations were based on the old topographic information.

FEMA identifies the 100-year floodplain at the Dallman Ash Pond as elevation 545 feet above mean sea level (msl). The berm elevation at the northwest corner of the Dallman Ash Pond (lowest point) is approximately 553 feet above msl. The perimeter berm elevations around the impoundments increase to the south by approximately 10 feet to transition to the top of dam/bridge elevation. Therefore, there is no chance the structures will be inundated by floodwaters from the Sugar Creek floodplain during a 100-year storm event.

The maximum surcharge pool analysis was not evaluated since the ash ponds are no longer in operation. Flooding around the ash ponds would be short term and would not lead to saturation of the embankment soils to an extent that would require additional stability modeling. CWLP has completed a comprehensive geotechnical investigation and has prepared an updated location restriction documentation for 35 Ill Adm. Code 845.340 Unstable Areas and Floodplains. The certification addressing the unstable areas and floodplains and construction of the CCR surface impoundments is provided in Appendix A of Attachment A.

1.2 Demonstration of Location Standards Compliance [35 Ill. Adm. Code 845.230(d)(2)(D)]

1.2.1 To comply with the application requirements of 35 Ill. Adm. Code 845.230(d)(2)(D), the applicant must provide a demonstration with certification from a qualified professional engineer attesting that the CCR surface impoundments meet the requirements in Part 845 Subpart C. Attachment 6 mentions that the CCR surface impoundments comply with four location standards, however, only two demonstrations and certifications were provided in the initial operating permit application. CCR surface impoundments meeting the location standards in Part 845 Subpart C must provide a demonstration and certification as part of the initial operating permit application.

Response

Certification provided in Attachment 6 included Wetlands and Fault Areas. CWLP has completed a comprehensive geotechnical investigation and has prepared updated location restriction documents for 35 Ill. Adm. Code 845.330 Seismic Impact Zones and 35 Ill Adm. Code 845.340 Unstable Areas and Floodplains. The certifications for these location restrictions are provided in Appendix A of Attachment A.

1.2.2 The Source Water Assessment Protection (SWAP) map indicates that there is an underground mine located under the Dallman Ash Pond. The structural integrity of the Dallman Ash Pond in an event of disruption due to an unstable area and local human-made feature must be addressed in accordance with Section 845.340.

Response

As part of the geotechnical investigation conducted between October 2023 and May 2024, CWLP completed a 100-foot boring in the northwest corner of Dallman Ash Pond. Within the 100-foot boring was approximately 32.5 feet of overburden with primarily shale and claystone bedrock. The Unstable Areas and Floodplains demonstration provided in Appendix A of Attachment A provides the breakthrough, pillar and floor failure analyses.

1.2.3 The underground mine must be addressed as specified in Sections 845.230(d)(2)(D) and 845.340(b)(3) by providing the data reports substantiating the statements regarding structural stability. Data may include the following:

- Rock core logs logged with details of discontinuities exhibiting that in the vicinity of the Dallman Ash Pond the rock was stable and did not have evidence of structural instability.
- Instrumentation data that monitors structural stability over time.

Response

As part of the geotechnical investigation conducted between October 2023 and May 2024, CWLP completed a 100-foot boring in the northwest corner of Dallman Ash Pond. Within the 100-foot boring was approximately 32.5 feet of overburden with primarily shale and claystone bedrock. The Unstable Areas and Floodplains demonstration provided in Appendix A of Attachment A provides the breakthrough, pillar and floor failure analyses.

There is no instrumentation that monitors structural stability over time.

1.3 Documentation and Maintenance of Slope Protection (35 Ill. Adm. Code 845.230(d)(2)(F)].

1.3.1 How are the slope protections for the Lakeside Ash Pond and Dallman Ash Pond meeting the performance standards in Section 845.430(b)?

Response:

CWLP is unsure what additional information Illinois EPA is requesting and seeks clarification.

Section 6, page 12 of the October 28, 2021 Initial Operating Permit Application discusses the manner in which the slopes and pertinent surrounding areas meet the performance standards of 35 IAC 845.430(b)(1-5). This includes a discussion on the grassy vegetation protection against surface erosion, wave action, adverse effects of rapid drawdown, maintenance for observation of and access to the slopes and pertinent surrounding areas during routine and emergency events, the removal of woody vegetation greater than ½ inch in diameter and maintenance of the vegetation at 12 inches in height.

Inspections are conducted by qualified personnel on a weekly and annual basis in accordance with 35 IAC 845.540(a) and (b) respectively. As indicated in the Annual Inspection Report for Coal Combustion Residuals Surface Impoundments that was prepared as part of the Annual Consolidated Report and the weekly inspections posted to CWLP's publicly accessible web site, routine inspections are being conducted of the slopes and pertinent surrounding areas and any observed deficiencies are being promptly addressed.

1.4 Waste Characterization and CCR Characterization (35 Ill. Adm. Code 845.230(d)(2)(B) and 845.230(d)(2)(C)]

The CCR waste characterization must include all waste streams as defined by SW846, incorporated by reference, which includes appropriate number of samples to characterize each waste type and identification of all waste types which includes solids, semi-solids, liquids, and air born parts that come from the CCR. SW846 Chapter 9 defines a minimum number of samples of each waste stream as totaling four and must include additional sampling as warranted. The Agency reviewed the data submitted and found that CWLP must provide, at a minimum, additional sampling for the following waste streams:

- CCR solids and semi-solids-Lakeside Ash Pond
- Non-CCR solids-Dallman Ash Pond
- Contaminated subsoils, if any are above the water table
- Leachate water—Lakeside Ash Pond
- Surface water-Lakeside Ash Pond and Dallman Ash Pond

- Scrubber sludge—Lakeside Ash Pond

Response:

A comprehensive description of the waste streams directed to the impoundments was provided in Section 3 of the Initial Operating Permit Application. The laboratory results were provided in Attachment 5 of the subject document.

For clarification purposes, CCR solids and semi-solids in Lakeside Ash Pond would consist of fly ash and bottom ash from the retired Lakeside Power Station, which ceased sending these materials in 2009. CCR solids exclusively sent to Lakeside Ash Pond consist of sludge from the Flue Gas Desulfurization Waste Water Treatment Plant (FGD WWTP). CCR solids and semi-solids exclusively sent to Dallman Ash Pond consists of bottom ash and fly ash generated from Dallman Units 31, 32 and 33.

Non-CCR solids exclusively sent to Lakeside Ash Pond consist of sludge from the Generating Facilities Waste Water Treatment Plant (FGD WWTP). Non-CCR solids in both Lakeside and Dallman Ash Ponds would consist of lime sludge from the water purification plant.

Analytical results for all of the referenced waste streams were provided in the initial application. Additionally, there is currently no surface water present in Lakeside Ash Pond. As such, no analytical information for these waste streams is available.

Dallman and Lakeside Ash Ponds ceased receiving all CCR and non-CCR waste streams on October 15, 2023. CWLP understands 35 Ill. Adm. Code 845.230(d)(2)(B) to require analysis of chemical constituents found within the CCR to be placed in the CCR surface impoundments. CWLP disagrees any additional analysis of chemical constituents found within the CCR to be placed in the CCR surface impoundments for all waste streams as defined by SW846, including TCLP/SPLP analysis is required or warranted per 35 Ill. Adm. Code 845.230(d)(2)(B). Additionally, CWLP disagrees there is a requirement to use SW 846 under 35 Ill Adm. Code 845.230(d)(2) for purposes of waste characterization of constituents found within the CCR to be placed in the CCR surface impoundments and requests clarification.

CWLP also disagrees that 35 Ill Adm. Code 845.230(d)(2)(B) or (C) requires leachate water analysis, surface water analysis or contaminated subsoils, if any above the water table and request further clarification.

CWLP agrees that additional geochemical analysis of in-place materials resulting from all waste streams contained within the surface impoundments is appropriate and warranted in accordance with 35 Ill Adm. Code 845.230(d)(2)(C). In May 2024, four borings were advanced in Lakeside Ash Pond (L1, L3, L4 and L5) and four borings were advanced in Dallman Ash Ponds (D1, D2, D3 and D4) for the purpose of obtaining representative samples of in place materials and porewater. Each boring was advanced with hollow stem augers and solids samples were collected via split barrel samplers. While drilling, a porewater sample was collected from the approximate midpoint of each boring. Once the final depth was obtained, a PVC monitoring well was constructed using 10-foot prepacked screens and isolated in the bottom 12 feet of the impoundment for the purpose of collecting additional porewater samples at a later date. As stated above, representative CCR materials and pore water were collected from each borehole and analyzed via TCLP for the parameters identified in Section 845.620(a)(1). A drawing showing the boring locations and the analytical results are provided in

Appendix B of Attachment A. A drawing showing the boring locations, boring logs, and well completion reports are provided in Appendix C to Attachment A (Groundwater Monitoring Program and Statistical Procedures).

Subsequent to well development, the four wells within Lakeside Ash Pond and the four wells in the Dallman Ash Pond were sampled on July 18, 2024. A final report from the testing laboratory has not been provided at this time. When complete, copies of the analyses will be provided to the Illinois EPA.

1.5 Emergency Action Plan (35 Ill. Adm. Code 845.230(d)(2)(G)]

1.5.1 The Emergency Action Plan must be updated to include the submittal of activation records to the Agency and documented in the operating record in accordance with Section 845.520(f).

Response

CWLP is unsure of what additional information Illinois EPA is seeking to be updated and requests clarification on this comment.

35 IAC 845.520(f) requires the owner or operator of the CCR surface impoundment to submit records documenting all activations of the EAP to the Agency and place the documentation in the facility's operating record as required by Section 845.800(d)(10).

The facility EAP would only be activated when events or circumstances involving the CCR surface impoundment that represent a safety emergency are detected, either by identifying conditions during structural stability assessments, annual inspections or inspections by qualified individuals.

To date, no such circumstances have warranted the activation of the EAP and therefore no such information is available or required to be provided to the Agency or placed in the facility operating record.

CWLP does conduct and document the annual face to face meetings and exercise with local emergency responders and this documentation is provided on our publicly available web site and is placed in our operating record.

1.5.2 The Emergency Action Plan must address floodplain areas as specified in Section 845.520.

Response

As stated in the response to the comment in 1.1.2 above, the FEMA flood zone map is incorrect. Additionally, there is no reference to floodplains in Section 845.520. Clarification is requested for this comment.

1.6 Fugitive Dust Control Plan [35 Ill. Adm. Code 845.230(d)(2)(H)]

1.6.1 The Fugitive Dust Control Plan must be updated to include procedures to log complaints from members of the public received by the applicant in accordance with Section 845.500(b)(2) and a description on how the owner or operator will periodically check the effectiveness of the Fugitive Dust Control Plan must be included in accordance-with Section 845.500(b)(3).

Response

The Fugitive Dust Control Plan has was updated in 2023 to include procedures to log complaints from the public and was placed on the facility website. The subject plan has been posted on the facility 845 public web site at https://www.cwlp.com/ILCCRHandler.ashx?imgID=2211. CWLP can provide a hard copy of the report if needed.

1.6.2 Multiple control measures to be used for the surface impoundments and surrounding areas are mentioned in the Fugitive Dust Control Plan. How are the measures appropriate and applicable for the site?

Response

The Fugitive Dust Control Plan has been updated to include narrative discussing the subject control measure and how such control measure is appropriate and applicable for the site. The plan has been placed in our operating record and is posted to our 845 public web site at https://www.cwlp.com/ILCCRHandler.ashx?imgID=2211. CWLP can provide a hard copy of the updated plan if needed.

1.7 Groundwater Monitoring Information [35 Ill. Adm. Code 845.230(d)(2)(1)]

The groundwater monitoring program must be amended as follows for the Agency to continue its review:

1.7.1 A multi-unit groundwater monitoring system, must be installed to determine the constituents and waste boundary of the CCR since Spring Creek and Lake Springfield are near the impoundments. The units to be monitored in accordance with Part 845 Subpart F must include the shallow clay that is in connection with Sugar Creek, unlithified aquifer (basal sand), and weathered shale (surficial shale unit).

Response

In the area of the CCR surface impoundments the basal sand/bedrock interface is identified as the uppermost aquifer for the site.

The bedrock at the project site consists of Pennsylvanian shales that are gray in color. The bedrock surface elevation varies from approximately 492 feet msl near the center of the existing landfill, to approximately 554 feet msl located on a bedrock outcrop near the landfill area (southeast corner of Cell 1). Along the down-gradient edge of the Dallman Ash Pond, the bedrock is at approximately 500 feet msl. In general, the bedrock surface slopes from the east and west towards the center of the landfill area.

The basal sand generally overlies the bedrock surface and underlies the lower cohesive deposit and is the lower-most unconsolidated deposit. There are some pockets of very hard, fine-grained silty clay to clay overlying bedrock in a few areas. The basal sand is present above these pockets of clayey deposits, thought to be weathered bedrock.

The basal sand is a gray colored, poorly graded, silty to clayey fine sand to well graded sand with minor amounts of fine gravel. This unit was encountered in a medium dense to dense condition. Across the CWLP facility (includes the Dallman and Lakeside Ash Ponds), the top elevation of the basal sand varies from 491 to 513 feet msl and is as much as 12.3 feet thick; however, it some locations it is absent, likely due to excessive erosion of the creek bottom. Along the down-gradient (northern) edge of the Dallman Ash Pond area, the basal sand was found to range from 3 to 11.5 feet in thickness, and have an average thickness of 7.3 feet.

At similar elevations as the basal sand, cohesive soils were encountered in the borings advanced within the limits of the former Sugar Creek channel. The location of the former Sugar Creek channel is depicted on the August 13, 1976 Grading Plan drawing from Burns & McDonnell (Drawing Y29 – Rev. 4). Borings conducted along the abandoned creek locations indicate that the creek fill materials consist of variable soils ranging from silty clays to silty sands. In some areas, the cohesive fill materials extended down to the top of bedrock. Where encountered, the granular fill materials are typically poorly graded silty to clayey sands and contain organics or wood fragments. In some areas, the granular fill materials also extended down to the top of bedrock. The referenced drawing (Drawing Y29 – Rev. 4) is included as Figure 3 in Appendix C of Attachment A (the August 2024, Hydrogeologic Report, Groundwater Monitoring Program and Statistical Procedures document).

The uppermost aquifer is characterized as the basal sand overlying the shale bedrock. In some CCR landfill locations the creek fill materials, ranging from silty clays and organic silty clays to silty sands and clayey sands, were found to be in direct hydraulic communication with the basal sand that directly overlies the bedrock surface. Due to the highly variable hydraulic characteristics and random placement of the creek fill materials, further characterization is difficult.

The lower cohesive deposit overlies the basal sand and consists of brown, gray, and brownish gray silty clays, clayey silts, and clays, having very soft to stiff consistency. Across the CWLP facility, the lower cohesive deposit is as much as 22 feet thick with an average thickness of about 15 feet. However, along the down-gradient (northern) edge of the Dallman Ash Pond the thickness of the lower cohesive deposit was found to range from 12.6 to 26.3 feet in thickness, and have an average thickness of 19.4 feet. The deposit was not encountered in isolated areas along the abandoned creek, possibly due to excessive erosion of the creek bottom in these areas. The bottom of the CCR surface impoundment rests directly on top of the lower cohesive deposit.

The lower cohesive deposit is generally overlain by the shallow sand and underlain by the basal sand. However, within the abandoned creek area, the lower cohesive deposit was encountered directly below the creek fill. In some areas the basal sand is not present and the lower cohesive deposit directly overlies the bedrock.

The shallow sand overlies the lower cohesive deposit and underlies the upper cohesive deposit. The unit consists of a brown to gray silty to clayey fine sand. It contains small lenses of silty clay and clayey silt. This unit is not continuous over the entire site. Its thickness ranges from one to three feet over most of the investigated area. The shallow sand does not underlay the CCR surface impoundment.

The upper cohesive deposit is an alluvial deposit consisting of brown, light brown to brownish-gray silty clays to clayey silts having soft to stiff consistency. The unit includes loess deposits and isolated pockets of fine-grained silty to clayey sand and at some location alluvial silts and silty

clays. The upper cohesive deposit is laterally adjacent to the sidewall of the CCR surface impoundment. Along the west perimeter of the impoundments, three wells are partially screened or the screen filter packs are located within the upper cohesive deposit. These include AP-2, AP-3, and AP-14. The screen intervals at AP-1 and AP-10 are close to the contact between the upper and lower cohesive soils. As described in the Site Geology and Site Hydrogeology sections of the Hydrogeologic Report, Groundwater Monitoring Program and Statistical Procedures (Attachment A), the soil characteristics of the upper and lower cohesive soils are very similar. Differentiating the two deposits for purposes of monitoring is not necessary.

The groundwater monitor well network was designed to monitor impoundments in the uppermost aquifer. No revisions to the network are necessary.

1.7.2 The waste boundary wells must be identified for comparison to the numerical values in Section 845.600(a)(1) and potential background values after review and approval by the Agency.

Response

The groundwater monitoring network consists of two upgradient monitoring wells AP-4 and AP-5 and eight downgradient monitoring wells RW-3, AP-1R, AP-2A, AP-3, AP-6, AP-8, AP-10 and AP-14. In addition to the eight downgradient wells, there are ten temporary assessment wells identified as AP-7, AP-9, AP-11, AP-12, AP-13, T1, T2, T4, T5 and T6. These wells assist in further evaluating groundwater quality pursuant to 35 IAC 845.650(d). The maps provided in Appendix C of Attachment A identify the upgradient, downgradient wells proximate to the waste boundary, the remaining downgradient wells and temporary assessment wells.

The temporary assessment wells may be sampled at alternate frequencies and for alternate constituents while further evaluating groundwater quality.

Appendix C of Attachment A provides the updated Hydrogeologic Report, Groundwater Monitoring Program and Statistical Procedures, provides maps, boring logs and well completion reports for the monitoring wells used in the groundwater monitoring network.

1.7.3 The laboratory reports for the background data used in the statistical evaluations must be provided. If the data is from historic data, then an electronic data dump directly from the laboratory can be provided instead of the laboratory reports.

Response

The Hydrogeologic Report, Groundwater Monitoring Program and Statistical Procedures has been updated and is provided in Appendix C of Attachment A. This updated program is intended to replace the program proposed in the original operating permit application. The updated program provides recalculated background concentrations, the laboratory analytical reports, statistical method and addition of groundwater monitoring wells.

Background concentrations have been recalculated using monitoring data from upgradient monitoring wells AP4 and AP5 from 2016 through 2017. For Antimony, Cobalt, Lead, Lithium and Thallium monitoring data from 2021 through 2022 was used.

CWLP is in the process of collecting additional groundwater data for total arsenic at a lower reporting limit. Groundwater analytical results for total arsenic prior to third quarter 2023 used a reporting limit above the groundwater protection standards listed in 35 Ill Adm. Code 845.600. To date, CWLP has collected seven of the eight required samples to calculate background concentrations. Once the additional groundwater data is collected, CWLP will provide an updated groundwater monitoring program with proposed backgrounds for total arsenic. .

1.7.4 Evidence that only upgradient wells were used in determining an alternative groundwater quality standard must be provided. Any alternative groundwater quality standards must not be used unless the groundwater protection standards have been reviewed and approved by the Agency.

Response

Pursuant to 35 IAC 845.640(d) background groundwater quality may be established at wells that are not located hydraulically upgradient from the CCR surface impoundment if it meets the requirements of Section 845.630(a)(1). Section 845.630(a)(1) states the performance standard, which in part is that the background wells must be installed at appropriate locations and depths to yield groundwater samples that accurately represent the quality of background groundwater that has not been affected by leakage from a CCR surface impoundment. A determination of background quality may include sampling of wells that are not hydraulically upgradient of the CCR management area where hydrogeologic conditions do not allow the owner or operator of the CCR surface impoundment to determine what wells are hydraulically upgradient; or sampling at other wells will provide an indication of background groundwater quality that is demonstratively as representative or more representative than that provided by the upgradient wells.

Groundwater monitoring well AP4 is characterized as a background groundwater monitoring well based upon its location and groundwater quality. Pursuant to Groundwater Sampling and Analysis Requirement at Section 845.640(d), the owner or operator of the CCR surface impoundment must establish background groundwater quality in a hydraulically upgradient or background well for each of the constituents listed in Section 845.600. Background groundwater quality may be established at wells that are not located hydraulically upgradient from the CCR surface impoundment if it meets the requirements of the performance standard at Section 845.630(a)(1), that is, the owner or operator of a CCR surface impoundment must install a groundwater monitoring system that consists of a sufficient number of wells, installed at appropriate locations and depths, to yield groundwater samples that:

1) Accurately represent the quality of background groundwater that has not been affected by leakage from a CCR surface impoundment. A determination of background quality may include sampling of wells that are not hydraulically upgradient of the CCR management area where:

A) Hydrogeologic conditions do not allow the owner or operator of the CCR surface impoundment to determine what wells are hydraulically upgradient; or

B) Sampling at other wells will provide an indication of background groundwater quality that is demonstratively as representative or more representative than that provided by the upgradient wells; and

2) Accurately represent the quality of groundwater passing the waste boundary of the CCR surface impoundment. The downgradient monitoring system must be installed at the waste

boundary that ensures detection of groundwater contamination. All potential contaminant pathways must be monitored.

Given the restraints of the physical boundaries of the facility, the choice of locations for positioning an upgradient/background monitoring well are limited. The position of wells AP-4 and AP-5 serve to represent background groundwater quality and were chosen in consultation with the Illinois EPA.

1.7.5 The groundwater monitoring program must exhibit that outliers will be evaluated after the collection and analysis of 32 or more samples. The dataset used to evaluate outliers must also have associated documentation required by Section 845.640(a).

Response

The Illinois EPA's direction to exhibit that outliers will be evaluated after the collection and analysis of 32 or more samples is not a regulatory requirement and furthermore is not statistically appropriate. CWLP requests additional clarification on this comment.

A narrative on the statistical treatment of outliers is provided in the updated Hydrogeologic Report, Groundwater Monitoring Program and Statistical Procedures provided as Appendix C of Attachment A. Documentation of the data set used to evaluate outliers is included in the narrative.

1.7.6 The permit application states that the background calculations are based on existing groundwater data for AP-4 and AP-5. Because reporting limits for arsenic and lead are above the Section 845.600(a)(l) numerical values, the data cannot be used to calculate background.

Response

CWLP is in the process of collecting additional groundwater data for total arsenic at a lower reporting limit. Groundwater analytical results prior to third quarter 2023 used a reporting limit for arsenic above the groundwater protection standards listed in 35 Ill Adm. Code 845.600. Groundwater analytical results prior to the third quarter 2019 used a reporting limit for total lead above the groundwater protection standards listed in 35 Ill Adm. Code 845.600. To date, CWLP has collected seven of the eight required samples to calculate background concentrations for arsenic. Once the additional groundwater data is collected, CWLP will provide an updated Hydrogeologic Report, Groundwater Monitoring Program and Statistical Procedures with proposed background for total arsenic and total lead for Illinois EPA review.

1.7.7 The background values for each constituent must be based solely on total constituent concentration compliant with Section 845.640(i).

Response

Background values for each constituent are based solely on total concentrations. The updated Hydrogeologic Report, Groundwater Monitoring Program and Statistical Procedures provided in Appendix C of Attachment A provides the laboratory analytical reports used to calculate background concentrations. As previously stated, CWLP is in the process of collecting additional background samples for total arsenic and will provide an updated Hydrogeologic Report,

Groundwater Monitoring Program and Statistical Procedures with proposed arsenic backgrounds for Illinois EPA review.

1.7.8 A certification from a qualified professional engineer stating the statistical method chosen is appropriate for evaluating groundwater monitoring data must be provided in accordance with Sections 845.640(f)(2) and 845.640(f)(3)(B).

Response

The updated Hydrogeologic Report, Groundwater Monitoring Program and Statistical Procedures provided in Appendix C of Attachment A includes the required certification.

1.7.9 The groundwater sampling and analysis program did not address all the sampling requirements in Section 845.640(a). The items below must be address. Laboratory reports, field purging, and sampling documentation must be provided to sufficiently address the requirements of Section 845.640(a).

- Sample collection,
- Sample preservation and shipment,
- Analytical procedures,
- Chain of custody control,
- Quality assurance and quality control including field and laboratory QA/QC measures, and
- Field and laboratory QA/QC measures.

Response

A sampling and analyses procedures document has been prepared to address the sampling requirements of Section 845.640(a). The sampling and analyses procedures document is included as part of the updated Hydrogeologic Report, Groundwater Monitoring Program and Statistical Procedures provided as Appendix C of Attachment A.

1.7.10 Evidence that the aforementioned aquifers and clay unit that are monitored for groundwater quality are also characterized in accordance with Section 845.640(c);

- Rate and direction of groundwater flow,
- Groundwater elevations in the location of CCR within a time period to avoid climate fluctuations, and
- Groundwater elevations in each well before purging.

Response

Groundwater elevations are obtained at each groundwater monitoring well immediately prior to purging, and all groundwater elevations are collected within as short of time span as possible to eliminate the potential for influence to the potentiometric surface due to climate fluctuations (barometric pressures, precipitation events, or snowmelt events). Elevations of Lake Springfield, Sugar Creek, the Clarification pond and water within the surface impoundments are recorded

during groundwater sampling events and are included on potentiometric surface maps as needed. Evidence of characterization being conducted in accordance with 845.640(c) is documented in the Annual Groundwater Monitoring and Corrective Action Report which is provided as part of the Annual Consolidated Reports posted to our public web site at https://www.cwlp.com/IllinoisCCRCompliance.aspx.

Detailed hydrogeologic characteristics were presented and discussed in Attachments 11 and 12 of the Closure Construction Permit Application. These included the rate and direction of groundwater movement.

The overall direction of groundwater movement is to the north, along the alluvial valley in which Sugar Creek has formed. The hydraulic gradients immediately adjacent to the surface impoundments may be somewhat radial, outward from the surface impoundments to the adjacent Sugar Creek river valley.

Groundwater flow velocity (Darcy velocity), was calculated for the horizontal component of the average linear velocity of groundwater. The Darcy velocity provides a good estimate of the time of travel for most soluble constituents in ground water. The results will be used to verify the collection of independent samples. Additional information is also contained in detail as part of the revisions to the Hydrogeologic Report, Groundwater Monitoring Program and Statistical Procedures provided in Appendix C to Attachment A of this correspondence.

It is presumed the clay unit referenced in the comment applies to both the upper and lower cohesive deposits as identified in the Hydrogeologic Report, Groundwater Monitoring Program and Statistical Procedures. The subject report lists the vertical hydraulic conductivities ranging from $9.4x10^{-9}$ to $8.24x10^{-6}$cm/sec for the two clayey deposits. With these low values, the two deposits will not meet the definition of an aquifer as defined in Section 845.120. The lower cohesive deposit is largely in contact with the upper-most aquifer which is monitored by numerous wells. The upper cohesive deposit partially monitored by wells with screen intervals that encounter the upper deposit (AP-2, AP3, and AP-14).

1.7.11 The laboratory used during the time of groundwater sampling must be identified and it must be shown that the lab was using SW-846, incorporated by reference in Section 845.150, methods for the analysis.

Response

The laboratory analytical reports providing the requested information are provided in the updated Hydrogeologic Report, Groundwater Monitoring Program and Statistical Procedures which is provided as Appendix C of Attachment A.

1.7.12 In accordance with Part 845 Subpart F, evaluations of total metals and the appropriate statistical analyses in accordance with Section 845.640(i) and Section 845.640(f) and (g) are required. The statistical evaluations of total metals constituents must be provided for Agency review and approval. Please note that total metals data must be substantiated by laboratory reports as required by Section 845.640(a).

Response

CWLP disagrees that 845.640(a) requires the submittal of laboratory reports. However, the laboratory analytical reports providing the requested information as well as the statistical analysis used to develop the revised background concentrations are provided in the updated Hydrogeologic Report, Groundwater Monitoring Program and Statistical Procedures which is provided as Appendix C of Attachment A.

1.7.13 The appropriate minimum detection limits for each constituent must be used to evaluate the constituent statistically and to compare against the numerical groundwater protection standard in 35 IAC 845.600(a)(l).

- The following constituents have a calculated groundwater protection/background value that does not exhibit the correct use of the statistics:
  - Arsenic
  - Barium
  - Beryllium
  - Boron
  - Cadmium
  - Calcium
  - Chromium
  - Cobalt
  - Lead
  - Mercury
  - Molybdenum
  - Radium 226/228
  - Selenium
  - Thallium
- The following constituents have a reporting limit higher than the GWPSs in 35 IAC 845.600(a)(l):
  - Arsenic
  - Lead
- The following constituent numerical groundwater protection standard is incorrectly cited from 35 IAC 845.600(a)(l)(I):
  - Cobalt

Response

The updated Hydrogeologic Report, Groundwater Monitoring Program and Statistical Procedures provided in Appendix C of Attachment A provides the laboratory analytical reports used to calculate the revised background concentrations. As previously stated, CWLP is in the process of collecting additional background samples for total arsenic and will provide updated background concentrations for arsenic and lead when available.

To comply with the application requirements of 35 Ill. Adm. Code 845.230(d)(2)(I)(i), the applicant must provide a full hydrogeologic assessment report and addenda that complies with Section 845.620. The

Hydrogeology Report must be amended as follows for the Agency to continue its review:

1.7.14 The permit application states that if any inadvertent leakage occurs that it will be minimal and would flow into the Sugar Creek. The permit application must provide data that substantiates this statement in a form that acknowledges and evaluates all possible human or ecological receptors and evaluates whether the constituents from the CCR are able to reach those receptors above accepted criteria based on known contaminant transport data available at the site.

Response

It appears the reference of inadvertent leakage was contained in Attachment 2 – CWLP 35 IAC 620 Ash Pond Assessment which is not part of the Hydrogeological Site Assessment and discusses inadvertent subsurface ash impoundment leakage of the ponds to groundwater. This report was written in 2010 at the request of Illinois EPA Bureau of Water Pollution Control to gauge compliance with 35 Ill. Adm. Code 620 groundwater quality standards. Subsequent investigations and reports detailed below provide assessments of impacts to human health and the environment.

Attachment 12 of the February 1, 2022 Closure Construction Permit Application characterizes impacts from the seepage of leachate to downgradient receptors. As characterized in Attachment 12, there are no receptors within the Sugar Creek basin within 3,400 feet of the CCR surface impoundments. Closure in place with a final cover system does not pose a risk to human health or the environment. The groundwater contaminant transport model demonstrates that concentrations detected above groundwater protection standards (GWPSs) will be limited in extent.

Such evaluation can be complex; however, this specific issue was addressed in the December 2014 USEPA document titled. Human and Ecological Risk Assessment of Coal Combustion Residuals[1]*. This document identified potential risks to human and ecological receptors from leaching of chemical constituents from CCR waste into surrounding environmental media. Risks to human health resulted from ingestion of ground water and fish, while risks to ecological receptors resulted from exposure to surface water. However, considerable dilution and attenuation would occur before constituent concentrations reach downgradient private wells and surface water bodies. As stated above, there are no receptors in the vicinity of the impoundments.*

1.7.15 The permit application states that the Lakeside Ash Pond base is at 535-feet asml and the Dallman Ash Pond base is at 533-feet asml. The FEMA flood insurance map indicates that flood zone AE encompasses the entirety of the Lakeside Ash Pond and the Dallman Ash Pond and is at an elevation of 546-feet asml and 545-feet asml, respectively. The permit application must provide the following:

- Boring logs or survey reports that verify the total depths of the ponds,
- Regular, temporal, or seasonal changes to the groundwater levels in relation to surface water levels in Lake Springfield,
- Events that would cause the flood plain to be inundated with flood waters, and
- Yearly minimums and maximums for groundwater elevations at the Lakeside Ash Pond and the Dallman Ash Pond.

[1] U.S. EPA. 2014. "Final Human and Ecological Risk Assessment of Coal Combustion Residuals." RIN: 2050-AE81. Prepared by the EPA Office of Solid Waste and Emergency Response. Washington, DC. December.

Response

As stated in the response to Comment 1.1.2, the FEMA flood insurance map is highly inaccurate. Any conclusions drawn based on the FEMA flood insurance map are suspect.

As part of the recent geotechnical investigations, CWLP advanced four borings in Lakeside Ash Pond and four borings in Dallman Ash Pond to confirm the bottom elevations of each impoundment. Borings L1, L3, L4 and L5 were advanced in Lakeside Ash pond where silty/clay materials were encountered at 534.5 feet msl, 530.5 feet msl, 553.0 feet msl and 530.0 feet msl, respectively. Borings D1, D2, D3 and D4 were advanced in Dallman Ash Pond where silty/clay materials were encountered at 526.0 feet msl, 523.0 feet msl, 526.2 feet msl and 529.5 feet msl respectively. A map depicting these locations and boring logs for these borings are provided in Appendix C of Attachment A.

Although monthly monitoring of groundwater elevations has been conducted since April 2021 per 35 Ill. Adm. Code 845.650(b)(2) and (3), the simultaneous recording of Sugar Creek did not begin until January 2023. Lake Springfield and Clarification Pond elevations were not collected until May 2023. Other historical elevations are available in the Annual Consolidated Reports for 2021 and 2022. Data for 2023 is provided below. It must be noted that the water levels within the impoundments may be below ground surface elevations of areas within the impoundments; i.e. the water levels are below grade. The Lakeside Ash Pond has been dry since October 2023. Available data for groundwater and surface water elevations for 2023 are as follows:

Unit	27-Jan-23	16-Feb-23	29-Mar-23	12-Apr-23	30-May-23	15-Jun-23	6-Jul-23	31-Aug-23	16-Sep-23	26-Oct-23	27-Nov-23	27-Dec-23
Lakeside Ash Pond	562.04	562	562.14	562.52	562.1	561.98	561.96	562.03	560.77	NM	NM	NM
Dallman Ash Pond	550.65	550.52	550.6	550.3	550.14	549.49	550.6	549.82	550.94	550.3	550.09	550.6
Sugar Creek	NM	NM	NM	NM	521.25	520.31	521.88	520.2	520.21	520.33	520.31	520.33
Lake Springfield	NM	NM	NM	NM	560.28	560.08	560.33	559.93	558.97	558.58	558.43	558.92
Clarification Pond	NM	NM	NM	NM	548.66	547.97	548.46	548.74	549.33	548.51	547.08	547.93
RW3	528.52	529.21	529.86	529.68	529.24	528.22	527.43	527.35	526.66	526.63	526.8	527.46
AP-1	525.48	526.15	526.63	525.45	525.28	524.31	525.18	524.24	523.88	523.95	524.16	524.64
AP-2	529.2	528.85	529.51	528.86	527.99	527.32	527.53	527.77	527.08	527.4	527.64	528.71
AP-3	525.93	526.31	526.52	525.77	525.74	525.33	524.69	524.41	525.24	525.31	525.31	525.81
AP-4	549.23	550.01	549.88	546.14	547.03	546.83	546.71	546.17	545.25	544.87	544.95	545.18
AP-5	569.03	568.43	570.86	570.85	570.33	569	569.82	568.88	566.63	565.73	565.16	566.1
AP-6	529.87	530	530.71	529.03	528.71	527.58	526.98	526.95	526.24	526.4	526.32	526.93
AP-7	NM	525.54	528.75	527.43	527.71	527.71	526.57	526.15	525.75	525.44	525.33	525.56
AP-8	532	532	533.21	535.95	535.38	533.99	533.56	533.4	532.42	532.23	532.77	533.72
AP-9	NM	529.27	529.34	525.07	524.94	523.74	524.72	523.61	523.19	523.33	523.65	524.48
AP-10	NM	534.82	535.01	534.45	533.74	532.44	532.54	532.29	531.29	530.93	531.67	532.67
AP-11	NM	524.49	525.4	523.9	524.29	522.77	523.39	522.69	522.27	522.14	522.82	522.98
AP-12	NM	524.49	526.14	525.64	525.68	523.58	523.97	522.66	522.42	522.16	522.72	523.03
AP-13	NM	523.3	529.36	528.09	527.28	524.67	524.43	523.52	522.53	522.12	522.68	523.02
AP-14	NM	538.58	538.23	537.2	537.66	537.23	538.12	537.57	536.41	535.88	536.52	537.56

The surface water level information along with the potentiometric surface data will be submitted to the Illinois EPA in the annual reports.

1.7.16 The hydrogeologic site characterization must address compliance with Sections 845.620(b)(2), 845.620(b)(6), 845.620(b)(11), 845.620(b)(13), 845.620(b)(15), and 845.620(b)(18) to demonstrate that floodplain inundation will not result in a release of CCR to Sugar Creek or other surface water bodies, public lands, or private lands.

Response

CWLP believes is has generally complied with the cited provisions. Based on the wording, it appears Illinois EPA means inundation of the floodplain as a result of surface water overbank flooding of Sugar Creek or other adjacent surface water bodies and the resultant impact of such flooding on the existing in-place CCR and the potential for redistribution of the CCR within the floodplain. The comment implies that floodplain inundation will occur.

As stated above, the FEMA Flood Insurance map is in error. While FEMA map shows there is

inundation during the 100-year storm event, the topographic information used in derivation of the flood elevations was highly inaccurate. There is no surface water inundation. In addition, CWLP updated its inflow design report in the 2023 Annual Consolidated Report to demonstrate that the ash ponds are designed and operated to contain a 1,000 year storm (previous demonstrations studied a 100 year storm). Attachment 5 of the 2023 Annual Consolidated Report also provides the Engineer Certification for the updated Inflow Design Flood Control System Plan.

Season fluctuations of the potentiometric surfaces as well as surface water body elevations were addressed in response to Comment 1.7.15 above. The hydrogeologic setting and potential migration pathways were discussed in detail in the Hydrogeologic Report, Groundwater Monitoring Program and Statistical Procedures provided in Appendix C to Attachment A of this document.

1.7.17 The climate aspects of the site including precipitation data, seasonal groundwater increases and decreases, and hydrologic effects of the Lake Springfield dam must be provided.

Response

CWLP is unsure of the regulatory citation for this information and requests additional clarification.

As documented in the 2024 Inflow Design Flood Control System Plan included as part of the Annual Consolidated Report, the impoundments are built in a manner in which there is no surficial flow of storm water into the impoundments during precipitation events. Therefore, only precipitation falling directly on the impoundments would be the precipitation entering the impoundments. The facility receives approximately 40 inches of precipitation annually according the National Weather Service web site https://www.weather.gov/ilx/spi2023.

Seasonal groundwater increases and decreases are provided above and on the potentiometric surface maps prepared for the Annual Consolidated Reports on our public web page at www.cwlp.com/IllinoisCCRCompliance.aspx. The CCR surface impoundments are separated from the hydraulic effects due to varying surface water elevations of Lake Springfield and by the presence of the Spaulding Dam.

1.7.18 Any potential migration pathways near both impoundments that have the potential for the CCR constituents listed in Section 845.600(a)(l) to leave the property or waste boundary.

Response

This is a reiteration of the requirement of 35 IAC 845.620(b)(11) - Identification of potential migration pathways. The pathways for migration have been identified as the basal sand/bedrock interface and where encountered the shallow intermittent silty/sandy intervals which is adequately monitored by the existing groundwater monitoring well network.

A significant amount of additional data were obtained as part of the geotechnical investigation and well installations that occurred within the impoundments and along the periphery of the impoundments. The hydrogeologic report contained within the original application has been updated to include the new information (Hydrogeologic Report, Groundwater Monitoring Program and Statistical Procedures) and is provided in Appendix C of Attachment A to this

document.

1.7.19 The hydrogeologic site characterization must include the following:

- Boring to 100 feet in accordance with Section 845.620(b)(l3), boring must be logged for lithologic, stratigraphic, and fracture/discontinuity characteristics including rock type, fractures and other discontinuities in accordance with applicable ASTM methods,
- Updated geologic setting with data from 100-feet boring in accordance with Section 845.620(b)(6),
- Updated fracture/discontinuity and potential secondary flow characteristics with data from 100-feet boring in accordance with Section 845.620(b)(7),
- Updated geologic cross-sections with data from 100-feet boring, groundwater elevations in wells, and hydraulic gradients in accordance with Section 845.620(b)(9),
- Updated geochemical and physical properties of the geologic layers with data from 100-feet boring in accordance with Section 845.620(b)(15),
- Updated hydraulic characteristics of the shallow cohesive unit/shallow sand in accordance with Section 845.620(b)(16) and determine if there is a risk to human health or the environment through the shallow cohesive unit/shallow sand to the Sugar Creek, and
- Updated monitoring network to include monitoring wells in the shallow cohesive/shallow sand unit in accordance with 35 IAC 845.630(d).

Response

A comprehensive geotechnical investigation of the impoundments which included borings and cone penetration testing were completed in the fall of 2023 and February 2024, respectively. The 100-foot boring required by Section 845.620 was completed in April 2024; information from the boring was used to augment the hydrogeologic characteristics of the site.

The deep bedrock boring was advanced to a total depth of 103.5 feet bgs (429.5 ft msl). The materials encountered in the deep bedrock boring were continuously logged in the field by an Andrews Engineering professional geologist describing the lithologic, stratigraphic, and fracture/discontinuity characteristics including rock type, fractures and other discontinuities. The log for boring B100 is included in the updated Hydrogeologic Report, Groundwater Monitoring Program and Statistical Procedures document included as Appendix C of Attachment A. Minor weathering fractures were observed in the upper portion of the bedrock at this location. No secondary flow fractures were observed. No voids directly or indirectly associated with the underground mining at this location were observed.

Packer testing was completed within boring B100. A summary sheet of the packer testing is provided in Appendix C. Packer testing was completed at 7 intervals (i.e., 93 to 103.5 feet bgs, 82.5 to 93 feet bgs, 72 to 82.5 feet bgs, 61.5 to 72 feet bgs and 51 to 61.5 feet bgs and with the final 2 intervals overlapping 40.5 to 51 and 38.5 to 49 feet below surface). Test results indicate hydraulic conductivity below 482 feet msl is less than 1 x 10-9 cm/sec. The results for the intervals tested above 482 feet msl are invalid as a result of hydraulic fracturing of the bedrock and the resultant inability to establish a seal within the shallow bedrock portion of the borehole. The results confirm that bedrock below the weathered zone is relatively impermeable; the shallow weathered bedrock and in direct hydraulic communication with the overlying basal sand comprise the uppermost aquifer.

No new information has been collected which alters the understanding of the physical and/or chemical characteristics of the shallow cohesive/shallow sand. Our conclusions regarding the extent of the shallow cohesive/shallow sand has not changed.

1.7.20 The hydraulic characteristics must be updated with data from migration pathways and include the following:

- Water table depths,
- Effective and total porosities in each aquifer,
- Hydraulic conductivities in each aquifer,
- Direction and velocity of groundwater flow in each aquifer, and
- Updated map of potentiometric surfaces reflecting the different migration pathways being monitored-weathered bedrock and unlithified aquifer.

Response

These hydrogeologic characteristics, identified in 35 IAC 845.620(b)(16), where the information was available, were characterized in the initial operating permit Sections 2.1 and 2.2 of Attachment 11 of the Initial Operating Permit Application.

A comprehensive geotechnical investigation of the impoundments which included borings and cone penetration testing were completed in the fall of 2023 and February 2024, respectively. Additionally, further hydrogeologic characterization was completed in April/May of 2024 which included the boring and installation of additional wells at locations opposite the CCR surface impoundments, across Sugar Creek, a deep bedrock boring located along the northern edge of Dallman Ash Pond and the boring and installation of 4 leachate wells in each of the CCR surface impoundments. Information from these investigations was used to augment in the revised Hydrogeologic Report, Groundwater Monitoring Program and Statistical Procedures included as Appendix C of Attachment A. The revised report includes a summary of groundwater elevations, geotechnical testing results, porosities, hydraulic conductivities, the direction and velocity of groundwater flow and updated map of potentiometric surfaces for the uppermost aquifer.

As stated above in the response to 1.7.10, the characteristics of clay deposits do not meet the definition of an aquifer and are not considered migration pathways.

1.7.21 The groundwater classification in accordance with Section 845.620(b)(17) must be addressed.

Response

Dependent upon the specific location, the groundwater may be Class I or Class II. The hydraulic conductivity of the uppermost aquifer will vary. Based on information provided in the revised Hydrogeologic Report, Groundwater Monitoring Program and Statistical Procedures, where the basal sand present, the groundwater is Class 1. .Due to the low horizontal and vertical hydraulic

conductivities of the clay deposits (upper and lower cohesive deposits being less than $1x10^{-4}$ cm/sec), water that may be present within the pore space will be Class II groundwater.

1.8 Preliminary Written Closure Plan [35 IAC 845.230(d)(2)(J)]

The provided closure plan must be revised to include the following:

1.8.1 The dewatering activities seems to indicate that the CCR will no longer be saturated, which is not exhibited by data. However, no groundwater plume mitigation measures are proposed. An update with a means and methods to adequately address the groundwater plume mitigation exhibiting that saturated CCR will not impact groundwater past the waste boundary and will not discharge to the Sugar Creek or Lake Springfield. Alternatively, details to the dewatering and drainage section detailing how the CCR will be protected from interaction with the groundwater and surface water must be provided in accordance with Section 845.750(b).

Response

Lakeside and Dallman Ash Ponds are required to close under 35 Ill Adm. Code 845.700(a)(1)(A) and therefore a Preliminary Written Closure Plan is not required pursuant to 35 IAC 845.720(a)(1). As a closure plan had already been developed for the Closure Construction Permit Application the general closure plan was provided as Attachment 8 of the Initial Operating Permit Application. The included plan as submitted in the Initial Operating Permit Application is not intended to meet the requirements of 35 Ill Adm. Code 845.720 and no revisions to that plan will be proposed. However, CWLP will address and update relevant portions of the Closure Plan provided in the Construction Closure Permit Application as necessary.

Dewatering and CCR material stabilization studies at Lakeside and Dallman Ash Ponds began in April 2024 and are anticipated to continue into 2025. The information obtained from the studies will be used to update the Final Closure Plan and will be provided in a Closure Construction Permit Application at a later date.

1.8.2 CCR material stabilization does not seem achievable as proposed. Details on the grading and compaction plan that will ensure compaction and CCR stabilization being achieved even where CCR is fully saturated below the water table must be provided accordance with Sections 845.750(b)(l) and 845.750(c)(3).

Response

Lakeside and Dallman Ash Ponds are required to close under 35 Ill Adm. Code 845.700(a)(1)(A) and therefore a Preliminary Written Closure Plan is not required pursuant to 35 IAC 845.720(a)(1). As a closure plan had already been developed for the Closure Construction Permit Application the general closure plan was provided as Attachment 8 of the Initial Operating Permit Application. The included plan as submitted in the Initial Operating Permit Application is not intended to meet the requirements of 35 Ill Adm. Code 845.720 and no revisions to that plan will be proposed. However, CWLP will address and update relevant portions of the Closure Plan provided in the Construction Closure Permit Application as necessary.

Dewatering and CCR material stabilization studies at Lakeside and Dallman Ash Ponds began in

April 2024 and are anticipated to continue into 2025. The information obtained from the studies will be used to update the planned grading and compaction sections of the Final Closure Plan and will be provided in a Closure Construction Permit Application at a later date.

1.8.3 The hydraulic conductivity or permeability data collection records and data analysis records of the lower native unit or bottom liner must be provided for the Agency to adequately review and approve of the low permeability layer in accordance with Section 845.750(c)(1).

Response

Lakeside and Dallman Ash Ponds are required to close under 35 Ill Adm. Code 845.700(a)(1)(A) and therefore a Preliminary Written Closure Plan is not required pursuant to 35 IAC 845.720(a)(1). As a closure plan had already been developed for the Closure Construction Permit Application the general closure plan was provided as Attachment 8 of the Initial Operating Permit Application. The included plan as submitted in the Initial Operating Permit Application is not intended to meet the requirements of 35 Ill Adm. Code 845.720 and no revisions to that plan will be proposed. However, CWLP will address and update relevant portions of the Closure Plan provided in the Construction Closure Permit Application as necessary.

A comprehensive hydrogeological and geotechnical investigation were completed between October 2023 and April 2024 to obtain information on the in-situ materials beneath and adjacent to the impoundments. Four borings were advanced to the underlying material in each impoundment for a total of eight. One Shelby-tube sample was obtained from the bottom of each borehole immediately beneath the bottom of the impoundments. Laboratory vertical hydraulic conductivity testing was conducted on each Shelby tube sample. The results ranged from a high of $6.80x10^{-6}$ cm/sec to a low of $1.70x10^{-8}$ cm/sec. The geometric mean was $3.42x10^{-7}$cm/sec. The information obtained from these investigations, including the information requested for hydraulic conductivity are included in the geotechnical investigation report provided in Appendix A of Attachment A.

1.8.4 If saturated CCR is left in place without solidification to ensure that the CCR is stable, then details of means and methods that will be used to comply with Section 845.750(c)(3) must be provided.

Response

Lakeside and Dallman Ash Ponds are required to close under 35 Ill Adm. Code 845.700(a)(1)(A) and therefore a Preliminary Written Closure Plan is not required pursuant to 35 IAC 845.720(a)(1). As a closure plan had already been developed for the Closure Construction Permit Application the general closure plan was provided as Attachment 8 of the Initial Operating Permit Application. The included plan as submitted in the Initial Operating Permit Application is not intended to meet the requirements of 35 Ill Adm. Code 845.720 and no revisions to that plan will be proposed. However, CWLP will address and update relevant portions of the Closure Plan provided in the Construction Closure Permit Application as necessary.

Dewatering and CCR material stabilization studies were initiated in April 2024 and are anticipated to be completed in 2025. The design of the final cover system accounts for potential settlement to ensure continued proper drainage throughout the post closure care period. The information obtained from the dewatering and CCR material stabilization studies will be used to amend the final closure plan as needed and would be provided in a Closure Construction Permit Application

at a later date.

1.8.5 The low permeability layer soils are not to be contaminated and will not pose a threat to human health and the environment in addition to being acceptable soil type and hydraulic conductivity. The material that is placed must be tested under compacted conditions to prove a minimum, not maximum, hydraulic conductivity of $1x10^{-7}$ cm/sec. CWLP must provide details on how they will comply with the hydraulic conductivity requirement and how often they will test to meet quality objectives and ensure that all soil types are determined to be acceptable geotechnically and environmentally.

- Borrow source sampling must be conducted using SW846 Test Method 1312 for SPLP for SVOCs, VOCs, and PCBs listed in 35 IAC 620 and Metals listed in 35 IAC 845.600; or, alternatively, the borrow source material must be certified "uncontaminated soil" to ensure that the borrow source material does not pose a risk to human health and the environment.
- Borrow source sampling must also include hydraulic conductivity, compaction, and soil type testing including hydraulic conductivity testing of compacted materials, Atterberg limits, and other soils testing to prove that the soils are adequate for the intended application.

Response

Lakeside and Dallman Ash Ponds are required to close under 35 Ill Adm. Code 845.700(a)(1)(A) and therefore a Preliminary Written Closure Plan is not required pursuant to 35 IAC 845.720(a)(1). As a closure plan had already been developed for the Closure Construction Permit Application the general closure plan was provided as Attachment 8 of the Initial Operating Permit Application. The included plan is not intended to meet the requirements of 35 Ill Adm. Code 845.720 and no revisions to that plan will be proposed. However, CWLP will address and update relevant portions of the Closure Plan provided in the Construction Closure Permit Application as necessary.

Although CWLP has historically used borrow materials from nearby properties, the borrow source area for procurement of the low permeability layer soils has not been determined. CWLP agrees borrow source testing should be a condition of the Closure Construction Permit but disagrees the preliminary written Closure Plan must be revised to include unavailable and indeterminate information.

Section 2.3.1 of the provided closure plan clearly states three-inch diameter Shelby tube samples will be collected from compacted soil layers and provides the minimum testing frequency for nuclear density testing, Atterberg Limits, Grain Size Distribution, Standard Proctor Density and Laboratory Permeability. CWLP is unsure what additional information Illinois EPA is seeking and requests clarification.

The maximum (not to exceed) hydraulic conductivity for the low permeability layer is $1x10^{-7}$ cm/sec. The use of minimum is incorrect

1.8.6 A detailed explanation of how the proposed erosion and final grading layers meet Section 845.750(c)(2) requirements for the final protective layer.

- Borrow source sampling must be conducted using SW846 Test Method 1312 for SPLP for

SVOCs, VOCs, and PCBs listed in 35 IAC 620 and Metals listed in 35 IAC 845.600 or alternatively, the borrow source material must be certified "uncontaminated soil" to ensure that the borrow source material does not pose a risk to human health and the environment.

- Borrow source sampling must also include soils testing to prove that the soils are adequate for the intended application.

Response

Lakeside and Dallman Ash Ponds are required to close under 35 Ill Adm. Code 845.700(a)(1)(A) and therefore a Preliminary Written Closure Plan is not required pursuant to 35 IAC 845.720(a)(1). As a closure plan had already been developed for the Closure Construction Permit Application the general closure plan was provided as Attachment 8 of the Initial Operating Permit Application. However, the included plan is not intended to meet the requirements of 35 Ill Adm. Code 845.720 and no revisions to that plan will be proposed. However, CWLP will address and update relevant portions of the Closure Plan provided in the Construction Closure Permit Application as necessary.

As stated above, although CWLP has historically used borrow materials from nearby properties, the borrow source area for procurement of the erosion and final grading layer soils has not been determined. CWLP agrees borrow source testing should be conducted and the results should be required to be submitted as a condition of the Closure Construction Permit.

1.8.7 Details on whether CCR generated at the facility for fill during the placement of the final cover will be used must be provided. Details of any CCR being beneficially reused on site in accordance with 35 IAC 845.750(d) must be provided.

Response:

Lakeside and Dallman Ash Ponds are required to close under 35 Ill Adm. Code 845.700(a)(1)(A) and therefore a Preliminary Written Closure Plan is not required pursuant to 35 IAC 845.720(a)(1). As a closure plan had already been developed for the Closure Construction Permit Application the general closure plan was provided as Attachment 8 of the Initial Operating Permit Application. However, the included plan is not intended to meet the requirements of 35 Ill Adm. Code 845.720 and no revisions to that plan will be proposed. However, CWLP will address and update relevant portions of the Closure Plan provided in the Construction Closure Permit Application as necessary.

CWLP will not be using the exemptions in 845.750(d) to bring additional CCR material on-site for closure purposes.

1.8.8 Data to substantiate the claims of capacity in Section 3 of the closure plan must be provided. A bottom depth of each CCR surface impoundment must be provided.

Response

Lakeside and Dallman Ash Ponds are required to close under 35 Ill Adm. Code 845.700(a)(1)(A) and therefore a Preliminary Written Closure Plan is not required pursuant to 35 IAC 845.720(a)(1). As a closure plan had already been developed for the Closure Construction Permit

Application the general closure plan was provided as Attachment 8 of the Initial Operating Permit Application. However, the included plan is not intended to meet the requirements of 35 Ill Adm. Code 845.720 and no revisions to that plan will be proposed. However, CWLP will address and update relevant portions of the Closure Plan provided in the Construction Closure Permit Application as necessary.

Verification of the bottom depth of each CCR surface impoundment was completed in 2024. Details of the verification are provided in the geotechnical investigation report provided in Appendix A of Attachment A.

1.8.9 The data inputs that were utilized to create the final cover area estimates and a survey of the extents of Lakeside Ash Pond and Dallman Ash Pond must be provided.

Response

Lakeside and Dallman Ash Ponds are required to close under 35 Ill Adm. Code 845.700(a)(1)(A) and therefore a Preliminary Written Closure Plan is not required pursuant to 35 IAC 845.720(a)(1). As a closure plan had already been developed for the Closure Construction Permit Application the general closure plan was provided as Attachment 8 of the Initial Operating Permit Application. However, the included plan is not intended to meet the requirements of 35 Ill Adm. Code 845.720 and no revisions to that plan will be proposed. However, CWLP will address and update relevant portions of the Closure Plan provided in the Construction Closure Permit Application as necessary.

The final cover area estimates described in Section 3 provide the assumed final cover area based on existing conditions. The estimates provided are not intended to represent the area that will be placed under final cover during closure activities as the areas are subject to change upon completion of dewatering and CCR stabilization activities. The final cover design was based on the October 15, 2018 LiDAR survey. Drawings containing that information were provided in the Plans and Specifications located in Attachment 8 to the Closure Construction Permit Application. Available construction documentation of the Lakeside Ash Pond and Dallman Ash Pond were provided in the February 1, 2022 Closure Construction Permit Application. The extents of the Lakeside Ash Pond and Dallman Ash Pond were based on multiple surveys defining the extents of the perimeter berms for the impoundments. These include on-site surveys as well as aerial surveys. LiDAR surveys were conducted most recently in 2018 and 2023. The extent of the impoundments have not changed since construction of the berms.

Dewatering and CCR material stabilization studies were initiated in April 2024 and are anticipated to be completed in 2025. The information obtained from the dewatering and CCR material stabilization studies will be used to amend the final closure plan as needed and would be provided in a Closure Construction Permit Application at a later date. In addition, final cover construction details will be provided in a Construction Certification Report which will be signed and sealed by a licensed professional engineer in the State of Illinois.

1.8.10 A schedule for the closure of the Lakeside Ash Pond and the Dallman Ash Pond must be provided for the Agency to consider the closure schedule.

Response

Lakeside and Dallman Ash Ponds are required to close under 35 Ill Adm. Code 845.700(a)(1)(A) and therefore a Preliminary Written Closure Plan is not required pursuant to 35 IAC 845.720(a)(1). As a closure plan had already been developed for the Closure Construction Permit Application the general closure plan was provided as Attachment 8 of the Initial Operating Permit Application. However, the included plan is not intended to meet the requirements of 35 Ill Adm. Code 845.720 and no revisions to that plan will be proposed. However, CWLP will address and update relevant portions of the Closure Plan provided in the Construction Closure Permit Application as necessary.

The closure schedule is an estimate as the final cover system design is also being evaluated by the U.S. EPA. The actual closure schedule will depend upon approval of the design by both the U.S. EPA and the State of Illinois. Detail variations by either entity will cause changes to the schedule.

CWLP agrees that the closure schedule proposed in the Closure Construction Permit Application should be considered by Illinois EPA but disagrees we should be held to any preliminary schedule proposed in the Operating Permit Application.

1.9 Initial Written Post-Closure Care Plan [35 IAC 845.230(d)(2)(K)]

The Post-Closure Care Plan states that the end use of the Lakeside Ash Pond and Dallman Ash Pond is to be a natural area with passive vegetation and native grasses that will not disturb the final cover or system. How will this be met post-closure?

Response

CWLP believes this comment was answered in the original application and does not understand the nature of this question but would be happy to provide additional clarification.

The inspection and maintenance activities discussed in the Post Closure Care Plan describe methods to identify and repair any conditions that would affect the final cover including: filling of erosional features, revegetation, mowing, controlling vegetation with tap roots, etc. As required per 35 Ill Adm. Code 845.760(h), a deed restriction will be placed on the property restricting use during the post-closure care period and the Illinois EPA must be notified that said deed has been recorded.

1.10 Liner Status or Statement [35 IAC 845.230(d)(2)(L)]

The Liner Status Report must be revised to include comments made under the History of Construction section.

Response

CWLP is unsure of what additional comments must be included and requests clarification. A statement regarding the liner status was provided in October 28, 2021 Initial Operating Permit Application. Section 12 of the Initial Operating Permit Application states that no engineered liner system exists beneath either Lakeside or Dallman Ash Ponds meeting the requirements of 35 Ill Adm. Code 845.400(b) or (c).

1.11 Hazard Potential Classification Assessment and Certification [35 IAC 845.230(d)(2)(M)]

1.11.1 The Hazard Potential Classification Assessment must be revised to include comments made under the History of Construction section.

Response

CWLP is unsure what specific information from the History of Construction Report the Illinois EPA is seeking to have added and requests clarification.

The Hazard Potential Classification Assessment was updated in 2024 in accordance with 35 Ill. Adm. Code 845.440. This updated assessment was submitted as Attachment 2 of the 2023 Annual Consolidated Report. A digital copy of the application was uploaded to the following address https://www.cwlp.com/ILCCRHandler.ashx?imgID=2221. CWLP can provide a hard copy of the Hazard Potential Classification Assessment of needed.

1.11.2 The Hazard Potential Classification Assessment indicates a classification of a low hazard potential for the CCR surface impoundment in accordance with 8 IAC 3702.30(a)(1). The hazard potential classification assessment for the CCR surface impoundments must be in accordance with Section 845.440. Please explain how the provided hazard potential classification assessment meets Section 845.440.

Response:

The Hazard Potential Classification Assessment was updated in 2024. This updated assessment was conducted in accordance with 35 Ill. Adm. Code 845.440 and submitted as Attachment 2 of the 2023 Annual Consolidated Report. A digital copy of the application was uploaded to the following address https://www.cwlp.com/ILCCRHandler.ashx?imgID=2221. CWLP can provide a hard copy of the Hazard Potential Classification if needed.

1.12 Structural Stability Assessment and Certification [35 IAC 845.230(d)(2)(P)]

The Structural Stability Assessment must be revised to include comments made under the History of Construction and Documentation and Maintenance of Slope Protection sections.

Response

CWLP is unsure what specific information from the History of Construction Report the Illinois EPA is seeking to have added and requests clarification.

The Structural Stability Assessment was updated in 2024. This updated assessment and certification was submitted as part of the Annual Consolidated Report and is available on our publicly accessible web site at https://www.cwlp.com/ILCCRHandler.ashx?imgID=2221.

1.13 Inflow Design Flood Control System Plan and Certification [35 IAC 845.230(d)(2)(R)]

1.13.1 The Inflow Design Flood Control System Plan must be revised to include comments made under the History of Construction section.

Response

CWLP is unsure what specific information from the History of Construction Report the Illinois EPA is seeking to have added and requests clarification.

The Inflow Design Control System Plan and certification was updated in 2024. This updated plan was submitted as part of the Annual Consolidated Report and is also is available on our publicly accessible web site at https://www.cwlp.com/ILCCRHandler.ashx?imgID=2221.

1.13.2 The Inflow Design Flood Control System Plan must address floodplain areas, use a hazard potential classification in accordance with Section 845.440 for the inflow design flood, and specify how discharges from the CCR surface impoundments will be handled with in accordance with Section 845.110(b)(3).

Response

The Inflow Design Control System Plan and certification was updated in 2024. This updated plan was submitted as part of the Annual Consolidated Report and is also is available on our publicly accessible web site at https://www.cwlp.com/ILCCRHandler.ashx?imgID=2221.

1.13.3 The Safety and Health Plan must indicate where the hazard communication signs are located on the property in accordance with Section 845.530(f).

Response:

The Safety and Health Plan was updated in 2023 and includes the requested items. This plan is available on our publicly accessible web site at www.cwlp.com/IllinoisCCRCompliance.aspx. CWLP can provide a hard copy if needed.

1.13.4 A number of procedures are listed but does not make them available as attachments to the document. The health and safety plan must have clear instructions on what to do to upgrade PPE in the event of an emergency in accordance with Sections 845.530(c)(2)(C), (D), and (G).

Response

The Safety and Health Plan was updated in 2023 and includes the requested items. This plan is available on our publicly accessible web site at www.cwlp.com/IllinoisCCRCompliance.aspx.

2 CONSTRUCTION PERMIT APPLICATION

2.1 History of Construction [35 Ill. Adm. Code 845.220(a)(l)]

2.1.1 The History of Construction and other permit application documents do not provide adequate data to verify the claims within the permit application pertaining to the following:

- Total depth or elevation of the bottom of the Lakeside Ash Pond and the Dallman Ash Pond.
- Engineering properties and hydraulic properties of the materials underlying the Lakeside Ash Pond and Dallman Ash Pond.

Response

As part of the recent geotechnical investigations, CWLP advanced four borings in Lakeside Ash Pond and four borings in Dallman Ash Pond to confirm the bottom elevations of each impoundment. Borings L1, L3, L4 and L5 were advanced in Lakeside Ash pond where silty/clay materials were encountered at 534.5 feet msl, 530.5 feet msl, 553.0 feet msl and 530.0 feet msl, respectively. Borings D1, D2, D3 and D4 were advanced in Dalman Ash Pond where silty/clay materials were encountered at 526.0 feet msl, 523.0 feet msl, 526.2 feet msl and 529.5 feet msl respectively. The range of hydraulic conductivities for the silty/clay materials beneath Lakeside Ash Pond are from 6.8 x 10^{-6} cm/sec to 8.5 x 10^{-8} cm/sec with a geometric mean of 2.58 x 10^{-7} cm/sec. The range of hydraulic conductivities for the silty/clay materials beneath Dallman Ash Pond are from 2.1 x 10^{-6} cm/sec to 5.1 x 10^{-8} cm/sec with a geometric mean of 4.53 x 10^{-7} cm/sec. A map depicting these locations and boring logs for these borings are provided in Appendix C of Attachment A.

2.1.2 The types of CCR found in the Lakeside Ash Pond and what the usages were for the Lakeside Ash Pond and Dallman Ash Pond must be addressed.

Response

Lakeside Ash Pond historically received fly ash and bottom ash from the now retired Lakeside Power Station. Lakeside Ash Pond also historically received non-CCR sludge from the CWLP Water Purification Plant.

Dallman Ash Pond historically received fly ash and bottom ash from now retired Units 31, 32 and 33 at Dallman Power Station in addition to FGDS scrubber sludge and landfill leachate. Dallman Ash Pond also received non-CCR sludge from the Water Purification Plant and miscellaneous storm water.

2.1.3 A survey of the extents of the Lakeside Ash Pond and Dallman Ash Pond and the data inputs that were utilized to create the final cover area estimates must be provided.

Response

Available construction documentation of the Lakeside Ash Pond and Dallman Ash Pond were provided in the February 1, 2022 Closure Construction Permit Application. The extents of the Lakeside Ash Pond and Dallman Ash Pond were based on multiple surveys defining the extents of the perimeter berms for the impoundments. These include on-site surveys as well as aerial surveys. LiDAR surveys were conducted most recently in 2018 and 2023. The extent of the impoundments have not changed since construction of the berms.

The final cover design was based on the October 15, 2018 LiDAR survey. Drawings containing

that information were provided in the Plans and Specifications located in Attachment 8 to the Closure Construction Permit Application.

Dewatering and CCR material stabilization studies were initiated in April 2024 and are anticipated to be completed in 2025. The design of the final cover system accounts for potential settlement to ensure continued proper drainage throughout the post closure care period. The information obtained from the dewatering and CCR material stabilization studies will be used to amend the final closure plan as needed and would be provided in a Closure Construction Permit Application at a later date. Final cover construction details will be provided in a Construction Certification Report which will be signed and sealed by a licensed professional engineer in the State of Illinois.

2.2 Narrative Description of the Facility [35 Ill. Adm. Code 845.220(a)(2)]

The CCR waste characterization must include all waste streams as defined by SW846, incorporated by reference, which includes appropriate number of samples to characterize each waste type and identification of all waste types which includes solids, semi-solids, liquids, and air born parts that come from the CCR. SW846 Chapter 9 defines a minimum number of samples of each waste stream as totaling four and must include additional sampling as warranted. The Agency reviewed the data submitted and found that CWLP must provide, at a minimum, additional sampling for the following waste streams:

- CCR solids and semi-solids-Lakeside Ash Pond
- Non-CCR solids-Dallman Ash Pond
- Contaminated subsoils, if any are above the water table
- Leachate water--Lakeside Ash Pond
- Surface water-Lakeside Ash Pond and Dallman Ash Pond
- Scrubber sludge-Lakeside Ash Pond
- Any other wastestream as defined by SW846 Compendium

Response

A comprehensive description of the waste streams directed to the impoundments was provided in Section 3 of the Initial Operating Permit Application. The laboratory results were provided in Attachment 5 of the subject document.

For clarification purposes, CCR solids and semi-solids in Lakeside Ash Pond would consist of fly ash and bottom ash from the retired Lakeside Power Station, which ceased sending these materials in 2009. CCR solids exclusively sent to Lakeside Ash Pond consist of sludge from the Flue Gas Desulfurization Waste Water Treatment Plant (FGD WWTP). CCR solids and semi-solids exclusively sent to Dallman Ash Pond consists of bottom ash and fly ash generated from Dallman Units 31, 32 and 33.

Non-CCR solids exclusively sent to Lakeside Ash Pond consist of sludge from the Generating Facilities Waste Water Treatment Plant (FGD WWTP). Non-CCR solids in both Lakeside and Dallman Ash Ponds would consist of lime sludge from the water purification plant.

Analytical results for all of the referenced waste streams were provided in the initial application.

Additionally, there is currently no surface water present in Lakeside Ash Pond. As such, no analytical information for these waste streams is available.

Dallman and Lakeside Ash Ponds ceased receiving all CCR and non-CCR waste streams on October 15, 2023. CWLP understands 35 Ill. Adm. Code 845.230(d)(2)(B) to require analysis of chemical constituents found ***within the CCR to be placed in the CCR surface impoundments (emphasis added)****. CWLP disagrees any additional analysis of chemical constituents found within the CCR to be placed in the CCR surface impoundments for all waste streams as defined by SW846, including TCLP/SPLP analysis is required or warranted per 35 Ill. Adm. Code 845.230(d)(2)(B). Additionally, CWLP disagrees there is a requirement to use SW 846 under 35 Ill Adm. Code 845.230(d)(2) for purposes of waste characterization of constituents found within the CCR to be placed in the CCR surface impoundments and requests clarification.*

CWLP also disagrees that 35 Ill Adm. Code 845.230(d)(2)(B) or (C) requires leachate water analysis, surface water analysis or contaminated subsoils, if any above the water table and request further clarification.

CWLP agrees that additional geochemical analysis of in-place materials resulting from all waste streams contained within the surface impoundments is appropriate and warranted in accordance with 35 Ill Adm. Code 845.230(d)(2)(C). In May 2024, four borings were advanced in Lakeside Ash Pond (L1, L3, L4 and L5) and four borings were advanced in Dallman Ash Ponds (D1, D2, D3 and D4) for the purpose of obtaining representative samples of in place materials and porewater. Each boring was advanced with hollow stem augers and solids samples were collected via split barrel samplers. While drilling, a porewater sample was collected from the approximate midpoint of each boring. Once the final depth was obtained, a PVC monitoring well was constructed using 10-foot prepacked screens and isolated in the bottom 12 feet of the impoundment for the purpose of collecting additional porewater samples at a later date. As stated above, representative CCR materials and pore water were collected from each borehole and analyzed via TCLP for the parameters identified in Section 845.620(a)(1). A drawing showing the boring locations and the analytical results are provided in Appendix B of Attachment A. A drawing showing the boring locations, boring logs, and well completion reports are also provided in Appendix C to Attachment A (Groundwater Monitoring Program and Statistical Procedures).

Sampling of the new impoundment wells occurred July 18, 2024; the laboratory has not finalized the analytical data as of the date of this response. The will be provided subsequent to receipt of the laboratory results.

2.3 Groundwater Monitoring Program [35 Ill. Adm. Code 845.220(a)(7) and Subpart F]

The groundwater monitoring program must be amended as follows for the Agency to continue its review:

2.3.1 A multi-unit groundwater monitoring system, must be installed to determine the constituents and waste boundary of the CCR since Sugar Creek and Lake Springfield are near the impoundments. The units to be monitored in accordance with Part 845 Subpart F must include the shallow clay that is in connection with Sugar Creek, unlithified aquifer, weathered shale (surficial shale unit), and any other aquifer identified migration pathways.

Response

In the area of the CCR surface impoundments the basal sand/bedrock interface is the only saturated zone and is identified as the uppermost aquifer for the site.

The bedrock at the project site consists of Pennsylvanian shales that are gray in color. The bedrock surface elevation varies from approximately 492 feet msl near the center of the existing landfill, to approximately 554 feet msl located on a bedrock outcrop near the landfill area (southeast corner of Cell 1). Along the down-gradient edge of the Dallman Ash Pond, the bedrock is at approximately 500 feet msl. In general, the bedrock surface slopes from the east and west towards the center of the landfill area.

The basal sand generally overlies the bedrock surface and underlies the lower cohesive deposit and is the lower-most unconsolidated deposit. There are some pockets of very hard, fine-grained silty clay to clay overlying bedrock in a few areas. The basal sand is present above these pockets of clayey deposits, thought to be weathered bedrock.

The basal sand is a gray colored, poorly graded, silty to clayey fine sand to well graded sand with minor amounts of fine gravel. This unit was encountered in a medium dense to dense condition. Across the CWLP facility (includes the Dallman and Lakeside Ash Ponds), the top elevation of the basal sand varies from 491 to 513 feet mean sea level (msl) and is as much as 12.3 feet thick; however, it some locations it is absent, likely due to excessive erosion of the creek bottom. Along the down-gradient (northern) edge of the Dallman Ash Pond area, the basal sand was found to range from 3 to 11.5 feet in thickness, and have an average thickness of 7.3 feet.

At similar elevations as the basal sand, cohesive soils were encountered in the borings advanced with the limits of the former Sugar Creek channel. The location of the former Sugar Creek channel is depicted on the August 13, 1976 Grading Plan drawing from Burns & McDonnell (Drawing Y29 – Rev. 4). Borings conducted along the abandoned creek locations indicate that the creek fill materials consist of variable soils ranging from silty clays to silty sands. In some areas, the cohesive fill materials extended down to the top of bedrock. Where encountered, the granular fill materials are typically poorly graded silty to clayey sands and contain organics or wood fragments. In some areas, the granular fill materials also extended down to the top of bedrock. The referenced drawing (Drawing Y29 – Rev. 4) was included as Figure 3 of Attachment 2 of Attachment 11 of the February 1, 2022 Closure Construction Permit application for the Lakeside Ash Pond and Dallman Ash Pond and is provided in the updated Hydrogeologic Report, Groundwater Monitoring Program and Statistical Procedures in Appendix C of Attachment A.

The uppermost aquifer is characterized as the basal sand overlying the shale bedrock. In some CCR landfill locations the creek fill materials, ranging from silty clays and organic silty clays to silty sands and clayey sands, were found to be in direct hydraulic communication with the basal sand that directly overlies the bedrock surface. Due to the highly variable hydraulic characteristics and random placement of the creek fill materials, further characterization is difficult.

The lower cohesive deposit overlies the basal sand and consists of brown, gray, and brownish gray silty clays, clayey silts, and clays, having very soft to stiff consistency. Across the CWLP facility, the lower cohesive deposit is as much as 22 feet thick with an average thickness of about 15 feet. However, along the down-gradient (northern) edge of the Dallman Ash Pond the thickness of the lower cohesive deposit was found to range from 12.6 to 26.3 feet in thickness, and have an average thickness of 19.4 feet. The deposit was not encountered in isolated areas along the abandoned creek, possibly due to excessive erosion of the creek bottom in these areas. The bottom of the CCR surface impoundment rests directly on top of the lower cohesive deposit.

The lower cohesive deposit is generally overlain by the shallow sand and underlain by the basal sand. However, within the abandoned creek area, the lower cohesive deposit was encountered directly below the creek fill. In some areas the basal sand is not present and the lower cohesive deposit directly overlies the bedrock.

The shallow sand overlies the lower cohesive deposit and underlies the upper cohesive deposit. The unit consists of a brown to gray silty to clayey fine sand. It contains small lenses of silty clay and clayey silt. This unit is not continuous over the entire site. Its thickness ranges from one to three feet over most of the investigated area. The shallow sand does not underlay the CCR surface impoundment.

The upper cohesive deposit is an alluvial deposit consisting of brown, light brown to brownish-gray silty clays to clayey silts having soft to stiff consistency. The unit includes loess deposits and isolated pockets of fine-grained silty to clayey sand and at some location alluvial silts and silty clays. The upper cohesive deposit is laterally adjacent to the sidewall of the CCR surface impoundment.

Along the west perimeter of the impoundments, three wells are partially screened or the screen filter packs are located within the upper cohesive deposit. These include AP-2, AP-3, and AP-14. The screen intervals at AP-1 and AP-10 are close to the contact between the upper and lower cohesive soils. As described in the Site Geology and Site Hydrogeology sections of the Hydrogeologic Report, Groundwater Monitoring Program and Statistical Procedures (Attachment A), the soil characteristics of the upper and lower cohesive soils are very similar. Differentiating the two deposits for purposes of monitoring is not necessary.

The groundwater monitor well network was designed to monitor impoundments in the uppermost aquifer. No revisions to the network are necessary.

2.3.2 The groundwater sampling and analysis program did not address all the sampling requirements in Section 845.640(a). The items below must be address. Laboratory reports, field purging, and sampling documentation must be provided to sufficiently address the requirements of Section 845.640(a).

- Sample collection,
- Sample preservation and shipment,
- Analytical procedures,
- Chain of custody control,
- Quality assurance and quality control including field and laboratory QA/QC measures, and

- Field and laboratory QA/QC measures.

Response

The Hydrogeologic Report, Groundwater Monitoring Program and Statistical Procedures has been updated to include the requested information and is provided in Appendix C of Attachment A. This updated program is intended to replace to program proposed in the original operating permit application. The updated program provides recalculated background concentrations, the laboratory analytical reports, statistical method and addition of groundwater monitoring wells.

2.3.3 Evidence that the aforementioned aquifers and clay unit that are monitored for groundwater quality are also characterized in accordance with Section 845.640(c).

- Rate and direction of groundwater flow,
- Groundwater elevations in the location of CCR within a time period to avoid climate fluctuations, and
- Groundwater elevations in each well before purging.

Response

Groundwater movement is controlled by recharge along topographic highs and discharge along the original stream valley. The pre-surface impoundment flow direction in the uppermost aquifer was dominantly horizontal from the adjacent banks toward the natural convergence along Sugar Creek, which formerly drained the site. The overall flow was from south to north with local deviations. This dominant flow pattern persists under present day conditions but with localized variation introduced by the hydrologic discontinuity created upon construction of the CCR landfill and CCR surface impoundments.

Existing wells at the site, including wells from the CCR landfill, were used to derive potentiometric surface maps. As discussed, overall groundwater flow is from south to north. The east perimeter of the Lakeside Ash Pond is largely up-gradient, and the west side is largely side-gradient where groundwater movement is parallel to the perimeter. Excavated areas within the landfill boundary act as a groundwater sink along the east side of the Dallman Ash Pond. Groundwater generally moves northward under the Dallman Ash Pond but also moves easterly towards the FGDS Landfill and westerly towards Sugar Creek. Groundwater beneath the Lakeside Ash Pond also moves northward and westerly along Sugar Creek.

The basal sand generally consists of 0% to 34% gravel, 50% to 91% sand, and 6% to 44% silt/clay; and exhibits a horizontal hydraulic conductivity of ranging from 6.4 x 10^{-4} to 7.64 x 10^{-2} cm/sec. The geometric mean hydraulic conductivity is 6.75 x 10^{-3} cm/sec. The basal sand was saturated in all locations where it was encountered.

The horizontal hydraulic gradient of the basal sand was calculated based on groundwater flow from well G120 to well RW-3. Using these wells, horizontal hydraulic gradients were calculated for four consecutive quarterly measurements dating from second quarter 2022 to first quarter 2024. As presented below, the horizontal hydraulic gradients within the basal sand ranges from 0.00825 to 0.0128. The average horizontal hydraulic gradient is 0.011.

For the basal sand, the effective porosity is based on the saturation water content data of sand. The range provided is from 37% to 49% (Sharp-Hansen et al., 1990). A mean effective porosity value of 43% was selected for the baseline model.

The average horizontal velocity within the Basal Sand is estimated to be 0.49 ft/day (i.e., $v_{in} = Ki/n_e$ = (0.000675 cm/sec · 0.011) / 0.43 = 0.000173 cm/sec · 0.0328 ft/cm · 86400 sec/day = 0.49 ft/day).

Additional information can be found is response to 1.7.10 above.

2.3.4 The laboratory used during the time of groundwater sampling must be identified and it must be shown that the lab was using SW-846, incorporated by reference in Section 845.150, methods for the analysis.

Response

The Hydrogeologic Report, Groundwater Monitoring Program and Statistical Procedures has been updated to include the requested information and is provided in Appendix C of Attachment A. This updated program is intended to replace to program proposed in the original operating permit application. The updated program provides recalculated background concentrations, the laboratory analytical reports, statistical method and addition of groundwater monitoring wells.

2.3.5 The permit application states that there is no evidence of subsidence, altered groundwater flow patterns, bedrock fracturing from the underground mining that underlies Dallman Ash Pond. However, the Agency is unaware of any data substantiating this claim, Attachment 2 provides an engineering report on the proposed modifications to an existing embankment at Lakeside Ash Pond. Additionally, the underground mine is only mentioned in the Hydrogeologic Report. There is no previous monitoring of potential subsidence with any instrumentation or data presented exhibiting that the total overburden load once Dallman Ash Pond is closed with a final cover will not exceed the maximum load that can be supported by the bedrock. Evidence to prove that the Dallman Ash Pond is not at risk to subsidence or settlement must be provided.

Response

CWLP has completed a comprehensive geotechnical investigation and has prepared location restriction documentation for 35 Ill Adm. Code 845.340 Unstable Areas and Floodplains that addresses the underground mine in the area of Dallman Ash Pond, which is provided as Appendix A of Attachment A.

2.3.6 The permit application states that the Lakeside Ash Pond base is at 535-feet asml and the Dallman Ash Pond base is at 533-feet asml. The FEMA flood insurance map indicates that flood zone AE encompasses the entirety of the Lakeside Ash Pond and the Dallman Ash Pond and is at an elevation of 546-feet asml and 545-feet asml, respectively. The permit application must provide the following:

- Boring logs or survey reports that verify the total depths of the ponds,
- Regular, temporal, or seasonal changes to the groundwater levels in relation to

surface water levels in Lake Springfield,
- Events that would cause the flood plain to be inundated with flood waters, and
- Yearly minimums and maximums for groundwater elevations at the Lakeside Ash Pond and the Dallman Ash Pond.

Response

As stated in the response to Comment 1.1.2, the FEMA flood insurance map is highly inaccurate. Any conclusions drawn based on the FEMA flood insurance map are suspect.

As part of the recent geotechnical investigations, CWLP advanced four borings in Lakeside Ash Pond and four borings in Dallman Ash Pond to confirm the bottom elevations of each impoundment. Borings L1, L3, L4 and L5 were advanced in Lakeside Ash pond where silty/clay materials were encountered at 534.5 feet msl, 530.5 feet msl, 553.0 feet msl and 530.0 feet msl, respectively. Borings D1, D2, D3 and D4 were advanced in Dalman Ash Pond where silty/clay materials were encountered at 526.0 feet msl, 523.0 feet msl, 526.0 feet msl and 529.5 feet msl respectively. A map depicting these locations and boring logs for these borings are provided in Appendix C of Attachment A.

Although monthly monitoring of groundwater elevations has been conducted since April 2021 per 35 Ill. Adm. Code 845.650(b)(2) and (3), the simultaneous recording of Sugar Creek did not begin until January 2023. Lake Springfield and Clarification Pond elevations were not collected until May 2023. Other historical elevations are available in the Annual Consolidated Reports for 2021 and 2022. Data for 2023 is provided below. It must be noted that the water levels within the impoundments may be below ground surface elevations of areas within the impoundments; i.e. the water levels are below grade. The Lakeside Ash Pond has been dry since October 2023. Available data for groundwater and surface water elevations for 2023 are as follows:

Unit	27-Jan-23	16-Feb-23	29-Mar-23	12-Apr-23	30-May-23	15-Jun-23	6-Jul-23	31-Aug-23	16-Sep-23	26-Oct-23	27-Nov-23	27-Dec-23
Lakeside Ash Pond	562.04	562	562.14	562.52	562.1	561.98	561.96	562.03	560.77	NM	NM	NM
Dallman Ash Pond	550.65	550.52	550.6	550.3	550.14	549.49	550.6	549.82	550.94	550.3	550.09	550.6
Sugar Creek	NM	NM	NM	NM	521.25	520.31	521.88	520.2	520.21	520.33	520.31	520.33
Lake Springfield	NM	NM	NM	NM	560.28	560.08	560.33	559.93	558.97	558.58	558.43	558.92
Clarification Pond	NM	NM	NM	NM	548.66	547.97	548.46	548.74	549.33	548.51	547.08	547.93
RW3	528.52	529.21	529.86	529.68	529.24	528.22	527.43	527.35	526.66	526.63	526.8	527.46
AP-1	525.48	526.15	526.63	525.45	525.28	524.31	525.18	524.24	523.88	523.95	524.16	524.64
AP-2	529.2	528.85	529.51	528.86	527.99	527.32	527.53	527.77	527.08	527.4	527.64	528.71
AP-3	525.93	526.31	526.52	525.77	525.74	525.33	524.69	524.41	525.24	525.31	525.31	525.81
AP-4	549.23	550.01	549.88	546.14	547.03	546.83	546.71	546.17	545.25	544.87	544.95	545.18
AP-5	569.03	568.43	570.86	570.85	570.33	569	569.82	568.88	566.63	565.73	565.16	566.1
AP-6	529.87	530	530.71	529.03	528.71	527.58	526.98	526.95	526.24	526.4	526.32	526.93
AP-7	NM	525.54	528.75	527.43	527.71	527.71	526.57	526.15	525.75	525.44	525.33	525.56
AP-8	532	532	533.21	535.95	535.38	533.99	533.56	533.4	532.42	532.23	532.77	533.72
AP-9	NM	529.27	529.34	525.07	524.94	523.74	524.72	523.61	523.19	523.33	523.65	524.48
AP-10	NM	534.82	535.01	534.45	533.74	532.44	532.54	532.29	531.29	530.93	531.67	532.67
AP-11	NM	524.49	525.4	523.9	524.29	522.77	523.39	522.69	522.27	522.14	522.82	522.98
AP-12	NM	524.49	526.14	525.64	525.68	523.58	523.97	522.66	522.42	522.16	522.72	523.03
AP-13	NM	523.3	529.36	528.09	527.28	524.67	524.43	523.52	522.53	522.12	522.68	523.02
AP-14	NM	538.58	538.23	537.2	537.66	537.23	538.12	537.57	536.41	535.88	536.52	537.56

The surface water level information along with the potentiometric surface data will be submitted to the Illinois EPA in the annual reports.

2.3.7 The hydrogeologic site characterization must address compliance with Sections 845.620(b)(2), 845.620(b)(6), 845.620(b)(1 1), 845.620(b)(13), 845.620(b)(15), and 845.620(b)(18) to demonstrate that floodplain inundation will not result in a release of CCR to Sugar Creek or other surface water bodies, public lands, or private lands.

Response

CWLP believes it has generally complied with the cited provisions. Based on the wording, it appears Illinois EPA means inundation of the floodplain as a result of surface water overbank flooding of Sugar Creek or other adjacent surface water bodies and the resultant impact of such flooding on the existing in-place CCR and the potential for redistribution of the CCR within the floodplain. The comment implies that floodplain inundation will occur.

As stated above, the FEMA Flood Insurance map is in error. While FEMA map shows there is inundation during the 100-year storm event, the topographic information used in derivation of the

flood elevations was highly inaccurate. There is no surface water inundation. In addition, CWLP updated its inflow design report in the 2023 Annual Consolidated Report to demonstrate that the ash ponds are designed and operated to contain a 1,000 year storm (previous demonstrations studied a 100 year storm). Attachment 5 of the 2023 Annual Consolidated Report also provides the Engineer Certification for the updated Inflow Design Flood Control System Plan.

To comply with the application requirements of 35 Ill. Adm. Code 845.220(a)(7)(A), the Hydrogeology Report must be amended as follows for the Agency to continue its review:

2.3.8 The climate aspects of the site including any seasonal fluctuations that would affect the sampling procedures or the characterization of the groundwater must be provided in accordance with Section 845.620(b)(2).

Response

The local weather conditions and climate patterns specific to the location includes temperature, precipitation, humidity, wind patterns. The seasonal fluctuations of these climate characteristics are summarized on https://www.weather.gov/ilx/spi-climate. The only weather conditions which impact sampling procedures and groundwater sampling are freezing conditions and flooding conditions.

Seasonal fluctuations of the potentiometric surfaces as well as surface water body elevations were addressed in response to Comment 1.7.15 above. The hydrogeologic setting and potential migration pathways were discussed in detail in the Hydrogeologic Report, Groundwater Monitoring Program and Statistical Procedures provided in Appendix C to Attachment A of this document. The monitor wells are appropriately located to account for any seasonal variations.

2.3.9 Identify any potential migration pathways near both impoundments that could leak CCR into surface water, community wells, or private wells in accordance with Section 845.620(b)(11).

Response

Potential migration pathways are limited to the occurrence of seeps, and or the migration through the uppermost aquifer in the event of vertical seepage from the CCR surface impoundments. The two surface water intakes were identified in Section 3.3.1 of the hydrogeologic report are upgradient and disassociated with the surface impoundments. No community water supply wells or private potable water wells were identified within 2,500 feet of the impoundments.

Attachment 12 of the February 1, 2022 Closure Construction Permit Application characterizes impacts from the seepage of leachate to downgradient receptors. As characterized in Attachment 12, there are no receptors within the Sugar Creek basin within 3,400 feet of the CCR surface impoundments. Closure in place with a final cover system does not pose a risk to human health or the environment. The groundwater contaminant transport model demonstrates that concentrations detected above groundwater protection standards (GWPSs) will be limited in extent.

Such evaluation can be complex; however, this specific issue was addressed in the December 2014

USEPA document titled. Human and Ecological Risk Assessment of Coal Combustion Residuals[2]. This document identified potential risks to human and ecological receptors from leaching of chemical constituents from CCR waste into surrounding environmental media. Risks to human health resulted from ingestion of ground water and fish, while risks to ecological receptors resulted from exposure to surface water. However, considerable dilution and attenuation would occur before constituent concentrations reach downgradient private wells and surface water bodies. As stated above, there are no receptors in the vicinity of the impoundments.

2.3.10 Boring to 100 feet in accordance with Section 845.620(b)(13), boring must be logged for lithologic, stratigraphic, and fracture/discontinuity characteristics including rock type, fractures and other discontinuities in accordance with applicable ASTM methods.

Response

The deep bedrock boring was advanced to a total depth of 103.5 feet bgs (429.5 ft msl). The materials encountered in the deep bedrock boring were continuously logged in the field by an Andrews Engineering professional geologist noting the lithologic, stratigraphic, and fracture/discontinuity characteristics including rock type, fractures and other discontinuities. The log for boring B100 is included in the updated hydrogeologic report and groundwater monitoring program document included as Appendix C of Attachment A. Weathering fractures were observed in the upper portion of the bedrock at this location. No secondary flow fractures were observed. No voids directly or indirectly associated with the underground mining at this location were observed.

2.3.11 Updated geologic setting with data from 100-feet boring in accordance with Section 845.620(b)(6) .

Response

The 100-foot boring required by Section 845.620 was completed in April 2024; information from the boring was used to augment the hydrogeologic characteristics of the site. The updated hydrogeologic report and groundwater monitoring program document is included as Appendix C of Attachment A.

2.3.12 Updated fracture/discontinuity and potential secondary flow characteristics with data from 100-feet boring in accordance with Section 845.620(b)(7).

Response

The log for boring B100 is included in the updated hydrogeologic report and groundwater monitoring program document included as Appendix C of Attachment A. Weathering fractures were observed in the upper portion of the bedrock at this location. No secondary flow fractures were observed. No voids directly or indirectly associated with the underground mining at this

[2] U.S. EPA. 2014. "Final Human and Ecological Risk Assessment of Coal Combustion Residuals." RIN: 2050-AE81. Prepared by the EPA Office of Solid Waste and Emergency Response. Washington, DC. December.

location were observed.

2.3.13 Updated geologic cross-sections with data from 100-feet boring, groundwater elevations in wells, and hydraulic gradients in accordance with Section 845.620(b)(9).

Response

The log for boring B100 is included in the updated hydrogeologic report and groundwater monitoring program document included as Appendix C of Attachment A. The geologic cross-sections have been updated using data collected from the 100-feet boring. Groundwater elevations and hydraulic gradients have been summarized and calculated for the 2nd quarter 2022 through 1st quarter 2024.

2.3.14 Updated geochemical and physical properties of the geologic layers with data from 100-feet boring in accordance with Section 845.620(b)(15).

Response

Where applicable the information gathered from the 100-feet boring was used to update the hydrogeologic report and groundwater monitoring program document included as Appendix C of Attachment A.

2.3.15 Updated hydraulic characteristics of the shallow cohesive unit/shallow sand in accordance with Section 845.620(b)(16) and determine if there is a risk to human health or the environment through the shallow cohesive unit/shallow sand to the Sugar Creek.

Response

The migration pathway of concern in the area of the CCR surface impoundments is the basal sand/shallow bedrock interface. The shallow sand is the only other migration pathway present at the facility and was only encountered in a few shallow wells which monitor the FGDS landfill Disposal Area. A detailed discussion of the upper cohesive soils is provided in the response to Item 1.7.7 above.

2.3.16 Updated monitoring network to include monitoring wells in the shallow cohesive/shallow sand unit in accordance with 35 IAC 845.630(d).

Response

The shallow sand overlies the lower cohesive deposit and underlies the upper cohesive deposit. The unit consists of a brown to gray silty to clayey fine sand. It contains small lenses of silty clay and clayey silt. This unit is not continuous over the entire site. Its thickness ranges from one to three feet where encountered. The shallow sand was not encountered in borings advanced in the vicinity of the CCR surface impoundments and does not underlay the CCR surface impoundments.

The shallow sand overlies the lower cohesive deposit and underlies the upper cohesive deposit. The unit consists of a brown to gray silty to clayey fine sand. It contains small lenses of silty clay and

clayey silt. This unit is not continuous over the entire site. Its thickness ranges from one to three feet over most of the investigated area. The shallow sand does not underlay the CCR surface impoundment.

The upper cohesive deposit is an alluvial deposit consisting of brown, light brown to brownish-gray silty clays to clayey silts having soft to stiff consistency. The unit includes loess deposits and isolated pockets of fine-grained silty to clayey sand and at some location alluvial silts and silty clays. The upper cohesive deposit is laterally adjacent to the sidewall of the CCR surface impoundment. Along the west perimeter of the impoundments, three wells are partially screened or the screen filter packs are located within the upper cohesive deposit. These include AP-2, AP-3, and AP-14. The screen intervals at AP-1 and AP-10 are close to the contact between the upper and lower cohesive soils. As described in the Site Geology and Site Hydrogeology sections of the Hydrogeologic Report, Groundwater Monitoring Program and Statistical Procedures (Attachment A), the soil characteristics of the upper and lower cohesive soils are very similar. Differentiating the two deposits for purposes of monitoring is not necessary.

The groundwater monitor well network was designed to monitor impoundments in the uppermost aquifer. No revisions to the network are necessary.

2.3.17 The hydraulic characteristics must be updated with data from migration pathways and include the following:

- Water table depths,
- Effective and total porosities in each aquifer,
- Hydraulic conductivities in each aquifer,
- Direction and velocity of groundwater flow in each aquifer, and
- Updated map of potentiometric surfaces reflecting the different migration pathways.

Response

Where applicable the information gathered from the 2023 and 2024 investigations has been used to update the Groundwater Monitoring Program and Statistical Procedures included as Appendix C of Attachment A.

2.3.18 The groundwater classification in accordance with Section 845.620(b)(l7) must be addressed.

Response

The Hydrogeologic Report, Groundwater Monitoring Program and Statistical Procedures has been updated to include the requested information and is provided in Appendix C of Attachment A. This updated program is intended to replace to program proposed in the original operating permit application. The updated program provides recalculated background concentrations, the laboratory analytical reports, statistical method and addition of groundwater monitoring wells.

2.4 Final Closure Plan [35 Ill. Adm. Code 845.220(d)(2)]

The Final Closure Plan must be revised to include the following:

2.4.1 The Closure Alternative Analysis in accordance with Section 845.710.

Response

CWLP is unsure what information in the Final Closure Plan must be revised and requests clarification. The Closure Alternatives Analysis was completed concurrently with the Assessment of Corrective Measures and was provided in Attachment 11 of the Closure Construction Permit Application.

2.4.2 The CCR surface impoundments must be closed in a manner that will preclude the probability of future impoundment of water, sediment, or slurry, provide major slope stability, and be completed in the shortest amount of time in accordance with Section 845.750(a).

Response

The final closure of the CCR surface impoundments will include a sloped final cover system to drain storm water off of and away from the impoundments, encapsulate the CCR and will be designed to prevent instability. Once given approval of the final closure plan leaving CCR in-place, closure will take approximately 18 to 24 months, weather dependent.

2.4.3 The dewatering activities seems to indicate that the CCR will no longer be saturated, which is not exhibited by data. However, no groundwater plume mitigation measures are proposed such as a slurry wall or other containment structures. Details to the dewatering and drainage section detailing how the CCR will be protected from interaction with the groundwater and surface water must be provided in accordance with Section 845.750(b).

Response

Dewatering and CCR material stabilization studies at Lakeside and Dallman Ash Ponds began in April 2024 and are anticipated to continue into 2025. The information obtained from the studies will be used to update the Final Closure Plan and will be provided in a Closure Construction Permit Application at a later date.

HELP modeling was provided to predict the rate of CCR surface impoundment head decrease in the Contaminant Transport Model, Attachment 2 of the Closure Alternatives Analysis of the Closure Construction Permit Application and conservatively assumed the full thickness of CCR material was present and saturated. Plume mitigation measures were evaluated as part of the Assessment of Corrective Measures which was completed concurrently with the Closure Alternatives Analysis. This included evaluation of vertical barriers, groundwater extraction and groundwater treatment. The Assessment of Corrective Measures evaluated the performance, reliability and ease of implementation for each option such as slurry walls, grout curtains, cut off walls and sheet pilings. No groundwater plume mitigation measures outside of closure with a final cover systems are proposed.

2.4.4 Details on the grading and compaction plan that will ensure compaction and CCR stabilization being achieved even where CCR is fully saturated below the water table must be provided accordance with Sections 845.750(b)(l) and 845.750(c)(3).

Response

Final grading and compaction plans have been developed but will likely be amended during the final engineering design as discussed in Attachment 13 of the Closure Construction Permit Application. Compaction and potential settlement of the CCR has been accounted for in the final cover system design. Any modifications to the final engineering design after upon completion of dewatering and stabilization activities will be submitted in a future Closure Construction Permit Application.

Dewatering and CCR material stabilization studies at Lakeside and Dallman Ash Ponds began in April 2024 and are anticipated to continue into 2025. The information obtained from the studies will be used to update the Final Closure Plan and will be provided in a Closure Construction Permit Application at a later date.

2.4.5 If saturated CCR is left in place without solidification to ensure that the CCR is stable, then details of means and methods that will be used to comply with Section 845.750(c)(3) must be provided.

Response

Dewatering and stabilization studies at Lakeside and Dallman Ash Ponds began in April 2024 and are anticipated to continue into 2025. The information obtained from the dewatering study will be used to update the Final Closure Plan and will be provided in a Closure Construction Permit Application at a later date.

2.4.6 A final protective layer is not proposed. The closure plan must be revised to include the following:

- Ensure that there is a final protective layer installed over the low permeability layer in accordance with Section 845.750(c)(2)(A),
- Ensure that the final protective layer is at least 3 feet thick in accordance with Section 845.750(c)(2)(B) or demonstrate that another final protective layer provides equivalent or superior performance,

Response

The final protective layer is discussed in Section 3.5 of the Final Closure Plan., which specifies a 3 feet thick final protective layer. CWLP is unsure what additional information is needed and requests clarification.

- The final protective layer soils must not be contaminated and must not pose a threat to human health and the environment. No analytical data is provided ensuring that the final protective layer (erosional layer) is uncontaminated. Soils for use in covering the CCR surface impoundments or other construction at the site must comply with the following:
  - Borrow source sampling must be conducted using SW846 Test Method 1312 for SPLP

for SVOCs, VOCs, and PCBs listed in 35 Ill. Adm. Code Part 620 and metals listed in Section 845.600 or, alternatively, the borrow source material must be certified "uncontaminated soil" to ensure that the borrow source material does not pose a risk to human health and the environment.

Response

Although CWLP has historically used nearby properties for borrow materials, the borrow source area for procurement of the final protective layer soils has not been determined. CWLP agrees this testing should be a condition of the closure construction permit.

- A certification by a professional engineer that the final cover system meets the requirements of Section 845.750 must be provided in accordance with Section 845.750(c)(4).

Response

See Attachment 9 of the February 1, 2022 Closure Construction Permit application for the Lakeside Ash Pond and Dallman Ash Pond. CWLP believes this certification meets the requirements of 35 Ill Adm. Code 845.750. However, a separate certification can be prepared if needed.

2.4.7 Details on whether CCR generated at the facility for fill during the placement of the final cover will be used must be provided. Details of any CCR being beneficially reused on site in accordance with 35 IAC 845.750(d) must be provided.

Response

CWLP will not be using the exemptions in 845.750(d) to bring additional CCR material on-site for closure purposes. Only CCR material generated at the facility and located at the facility at the time closure was initiated will be used.

2.4.8 Modeling data and survey data to substantiate the claims of capacity in Section 4 of the Final Closure Plan must be provided. A bottom depth of each CCR surface impoundment must be provided.

Response

As part of the recent geotechnical investigations, CWLP advanced four borings in Lakeside Ash Pond and four borings in Dallman Ash Pond to confirm the bottom elevations of each impoundment. Borings L1, L3, L4 and L5 were advanced in Lakeside Ash pond where silty/clay materials were encountered at 534.5 feet msl, 530.5 feet msl, 553.0 feet msl and 530.0 feet msl, respectively. Borings D1, D2, D3 and D4 were advanced in Dalman Ash Pond where silty/clay materials were encountered at 526.0 feet msl, 523.0 feet msl, 526.2 feet msl and 529.5 feet msl, respectively. A map depicting these locations and boring logs for these borings are provided in the geotechnical report contained in Appendix A of Attachment A.

Evaluation of the CCR quantities is ongoing for purposes of final cover elevation revisions and

redistribution for the slope configurations for both impoundments. Once completed, the applicable data and design will be provided to the Illinois EPA for review.

2.4.9 The data inputs that were utilized to create the final cover area estimates and, for the purpose of construction and adequate estimation of costs, quantities of materials and quality control, a survey of the extents of the Lakeside Ash Pond and the Dallman Ash Pond must be provided.

Response

Available construction documentation of the Lakeside Ash Pond and Dallman Ash Pond were provided in the February 1, 2022 Closure Construction Permit Application. The extents of the Lakeside Ash Pond and Dallman Ash Pond were based on multiple surveys defining the extents of the perimeter berms for the impoundments. These include on-site surveys as well as aerial surveys. LiDAR surveys were conducted most recently in 2018 and 2023. The extent of the impoundments have not changed since construction of the berms.

The final cover design was based on the October 15, 2018 LiDAR survey. Drawings containing that information were provided in the Plans and Specifications located in Attachment 8 to the Closure Construction Permit Application.

Final cover construction details will be provided in a Construction Certification Report which will be signed and sealed by a licensed professional engineer in the State of Illinois.

In the meantime, now that no additional CCR or non-CCR material will be sent to the surface impoundments, CWLP has been able to engage an engineering firm to evaluate dewatering and material stabilization studies as well as evaluation of cover designs and options that will be used to update the final cover design provided to the Agency.

2.4.10 A schedule for the closure of the Lakeside Ash Pond and the Dallman Ash Pond must be provided for the Agency to consider the closure schedule.

Response

A closure schedule was provided on Pages 3-4 of the Final Closure Plan (see Attachment 13 of the February 1, 2022 Closure Construction Permit application for the Lakeside Ash Pond and Dallman Ash Pond.

CWLP has initiated dewatering and CCR material stabilization studies which are anticipated to be completed in 2025. CWLP can work on developing and submitting a more detailed construction schedule now that it has initiated closure by ceasing receipt of CCR material and applying for a closure permit. The new closure schedule will be based on activities to take place once the permit is issued.

Specific dates cannot be provided until a Closure Construction Permit is issued detailing the approved method of closure, i.e. closure with a final cover system or closure by removal. 35 Ill Adm. Code 845.760(a) would require the owner or operator to complete closure within the timeframe approved by the Agency, or within five years of obtaining a construction permit for closure, whichever is less. However, CWLP is open to providing additional details if Illinois EPA

clarifies what specifically was found lacking in the initial schedule.

- A certification by a professional engineer that the Final Closure Plan meets the requirements of Section 845.720(b) must be provided in accordance with Section 845.720(b)(5).

Response

See Attachment 9 of the February 1, 2022 Closure Construction Permit application for the Lakeside Ash Pond and Dallman Ash Pond. CWLP believes this certification meets the requirements of 35 Ill Adm. Code 845.720. However, a separate certification can be prepared if needed.

2.5 Closure Alternatives Analysis and Corrective Action [35 Ill. Adm. Code 845.220(d)(2) and 845.220(c)]

The closure alternatives analysis must be revised to include the following:

2.5.1 The permit application does not discuss the long-term risks of closure with a final cover. The long-term risks of the Dallman Ash Pond and the Lakeside Ash Pond being in the FEMA flood zone, possibility of dam failure, and any other potential events that could cause a release of the CCR to the Spring Creek or other environmental release must be delineated. Additionally, because it is known that the CCR at the Dallman Ash Pond and the Lakeside Ash Pond are partially submerged in groundwater, an investigation, discussion and propose mitigation measures for the groundwater with the closure with a final cover must be provided.

Response

The current FEMA flood zone map is inaccurate. The flood zone highlighted by FEMA is based on topographic contours from a USGS quadrangle map from 1965, which did not show the Lakeside impoundment that existed at that time. The Dallman Ash Pond was not shown as it had not been constructed yet. However, the FEMA floodplain elevations were based on the old topographic information.

FEMA identifies the 100-year floodplain at the Dallman Ash Pond as elevation 545 feet above mean sea level (msl). The berm elevation at the northwest corner of the Dallman Ash Pond (lowest point) is approximately 553 feet above msl. The perimeter berm elevations around the impoundments increase to the south by approximately 10 feet to transition to the top of dam/bridge elevation. Therefore, there is no chance the structures will be inundated by floodwaters from the Sugar Creek floodplain during a 100-year storm event.

The impacts of the FEMA flood zone on the foundation and construction of the current CCR surface impoundments was presented in the February 1, 2022 Closure Construction Permit Application. However, further hydrogeologic characterization was completed in April/May of 2024 which included the boring and installation of additional wells at locations opposite the CCR surface impoundments, across Sugar Creek, a deep bedrock boring located along the northern edge of Dallman Ash Pond and the boring and installation of 4 leachate wells in each of the CCR surface impoundments. Information from these investigations was used to augment in the revised Hydrogeologic Report, Groundwater Monitoring Program and Statistical Procedures included as Appendix C of Attachment A.

Neither impoundment is partially submerged. Since sluicing activities halted, water levels within the CCR at both impoundments have decreased. In addition, dewatering and material stabilization studies began in April 2024 and are expected to continue through 2025. Dewatering, in conjunction with material stabilization and grading and ultimately placement of the final cover system will reduce water levels within the impoundments.

The submitted contaminant transport modeling was based in part on the premise that pore water levels would decrease via gravity and that background concentrations or groundwater protection standards would be achieved. Inclusion of dewatering activities within the impoundments will shorten the time needed to achieve the background concentrations or groundwater protection standards.

2.5.2 A survey of the extents of the Lakeside Ash Pond and Dallman Ash Pond and the data inputs that were utilized to create the final cover area estimates must be provided.

Response

Available construction documentation of the Lakeside Ash Pond and Dallman Ash Pond were provided in the February 1, 2022 Closure Construction Permit Application. The extents of the Lakeside Ash Pond and Dallman Ash Pond were based on multiple surveys defining the extents of the perimeter berms for the impoundments. These include on-site surveys as well as aerial surveys. LiDAR surveys were conducted most recently in 2018 and 2023. The extent of the impoundments have not changed since construction of the berms. The final cover design was based on the October 15, 2018 LiDAR survey. Drawings containing that information were provided in the Plans and Specifications located in Attachment 8 to the Closure Construction Permit Application. Final design details will be based on actual field conditions at the time of construction.

CWLP has initiated dewatering and CCR stabilization studies which are anticipated to be completed in 2025.

As the final cover area is subject to change based on dewatering, material stabilization and material consolidation, final cover construction details will be provided in a Construction Certification Report which will be signed and sealed by a licensed professional engineer in the State of Illinois.

CWLP agrees that the submittal of final cover construction details should be a permit condition of an issued Closure Construction Permit.

2.5.3 The permit application states multiple short-term risks that might be posed to a community or environment through closure by removal. The closure alternatives must accurately address how those short-term risks are mitigated in accordance with OSHA standards and other existing regulations.

Response

35 Ill. Adm. Code 845.710(b) requires the applicant to examine the short term risk that might be posed to a community or the environment during a closure, including potential threats to human health and the environment associated with excavation, transportation and re-disposal of contaminants. The closure alternatives analysis accurately identified the short term risks

that might be posed as during closure by removal as required per regulation. CWLP disagrees that the closure alternatives analysis must address mitigation of short term risks to a community or environment with OSHA standards and requests clarification from Illinois EPA. OSHA standards set for the requirements for employers to protect employees from hazards. In general, protection of communities and environment during short term removal would incorporate best practices of tarping trucks, using wash pads to prevent tracking of materials onto roadways, etc.

The Closure Construction Permit application proposes closure by installation of a final cover system and not closure by removal. If closure by removal were to be required, CWLP agrees a Closure Construction Permit application would be required to address risk mitigation for employees, contractors and third party contractors as well as best practices for protection of communities and environment. Additionally, these factors would be addressed under the Safety and Health Plan as required per 35 Ill. Adm. Code 845.530.

2.5.4 The permit application must address the groundwater contamination nature and extent and provide a framework for measures that will be taken to prevent it from leaving the property.

Response

The nature, extent and measures taken to prevent migration of groundwater contamination are discussed in Section 3.2.1 of the Closure Alternatives Assessment and Assessment of Corrective Measures, Attachment 11 of the February 1, 2022 Closure Construction Permit application for the Lakeside Ash Pond and Dallman Ash Pond. Closure in place with a final cover system was the framework selected corrective action to prevent further releases to the environment. The corrective action selected is closure in place with a final cover system which will achieve compliance with groundwater protection standards..

The Hydrogeologic Report, Groundwater Monitoring Program and Statistical Procedures has been updated and is provided in Appendix C of Attachment A. This updated program is intended to replace to program proposed in the original operating permit application. The updated program provides recalculated background concentrations, the laboratory analytical reports, statistical method and discussions of the addition of groundwater monitoring wells on the periphery of the west and northern boundary of the impoundments.

CWLP is in the process of collecting additional groundwater data for total arsenic at a lower reporting limit. Groundwater analytical results for total arsenic prior to third quarter 2023 used a reporting limit above the groundwater protection standards listed in 35 Ill Adm. Code 845.600. To date, CWLP has collected four of the eight required samples to calculate background concentrations. Once the additional groundwater data is collected, CWLP will provide an updated Hydrogeologic Report, Groundwater Monitoring Program and Statistical Procedures with proposed backgrounds for total arsenic.

2.5.5 The permit application states the extent to which containment practices will reduce further releases by closure in place with a final cover system. How the closure by removal will reduce further releases in the groundwater and from extreme events must be addressed.

Response

Both closure by removal and closure in place eliminate risk by eliminating the source of contaminants, either by complete removal or encapsulation which would ultimately prevent further solute migration. Closure by removal will result in the disruption of the redox conditions likely resulting in the potential for migration due to increased dissolution and chemical reactions mobilizing contaminant ions.

Extreme events would be related to a catastrophic failure of an earthen berm either as a result of seismic event or by flooding conditions along Sugar Creek which could compromise the berm integrity. These are conditions evaluated in the hazard analyses of the Safety Factor Assessment submitted as Attachment 3 of the February 1, 2022 Closure Construction Permit application for the Lakeside Ash Pond and Dallman Ash Pond and updated in 2024. Closure by removal would eliminate the berms, reducing the effects due to extreme events.

Contaminant transport modeling presented in the Closure Construction Permit Application addressed both closure methods result in achieving groundwater protection standards.

2.5.6 The permit application states that the Lakeside Ash Pond and the Dallman Ash Pond pose no risk to human health or the environment, so it is not necessary to use treatment technologies. Evidence that the Lakeside Ash Pond and the Dallman Ash pond pose no threat to human health or the environment must be provided.

Response

In its current state, and the conditions expected during in-place closure/capping, the threat to human health is reduced to groundwater ingestion and/or fugitive dust. Regarding groundwater ingestion, there are no groundwater receptors within the limits of the expected contaminant migration with closure in-place (see the Closure Alternatives Assessment and Assessment of Corrective Action included as Attachment 11 of the February 1, 2022 Closure Construction Permit application for the Lakeside Ash Pond and Dallman Ash Pond). Fugitive dust emissions should be minimized through closure in-place and would expected to be much greater as a result of closure-by-removal. In addition to potential threat to human health or the environment from the CCR material or leaching of CCR constituents to groundwater, the additional potential impacts/hazards are related to the loading and trucking of CCR material to a disposal facility.

Human health protections during closure will be covered by the Safety and Health plan pursuant to 35 Ill. Adm. Code 845.530.

2.5.7 A description and associated environmental data, data analyses, and recommendations pertaining to the contaminants and transport variations that could occur over time during each closure alternative, including seasonal variations must be provided.

Response

This was discussed in great detail in the assessment of corrective measures document. (See Section 2.3.of the Closure Alternatives Assessment and Assessment of Corrective Action which is Attachment 11 of the February 1, 2022 Closure Construction Permit application for the Lakeside Ash Pond and Dallman Ash Pond).

This discussion included, but was not limited to the long and short-term effectiveness, magnitude of reduction of existing risks, magnitude of residual risks, long term management, reliability of engineering and institutional controls, potential for future corrective action and potential for future releases. Given closure is required to be completed within five years of issuance of a closure construction permit, seasonal variations affecting contaminant transport would effectively be limited to dewatering activities and seasonal precipitation events. The contaminant transport model typically utilized worst-case input values which accounted for seasonal variability as discussed in the aforementioned document. Using a transient model will only reduce the solute transport over time. The model assumed an outward hydraulic gradient the entire model period, representing worst-case.

CWLP is unsure of what additional seasonal variation information is required and requests clarification.

2.5.8 The Corrective Action must be revised to include the following:

To comply with the application requirements of 35 Ill. Adm. Code 845.220(c)(1), the applicant must provide a corrective action plan. The permit application states that the corrective action plan is in various attachments. The corrective action plan must be compiled together in a single attachment.

Response

The corrective action plan is based on the assessment of corrective measures is contained in the Closure Alternatives Assessment and Assessment of Corrective Action which is Attachment 11 of the February 1, 2022 Closure Construction Permit application for the Lakeside Ash Pond and Dallman Ash Pond. The corrective action being closure-in place with a final cover; as such, the closure plan is the corrective action plan.

35 Ill. Adm. Code 845.670(b) requires the owner/operator to submit a construction permit application that identifies the selected remedy within one year after completing the assessment of corrective measures and public meeting. The assessment of corrective measures identified closure in place with a final cover system as the selected remedy. CWLP is unsure how to proceed with this requirement and requests clarification as a determination of the Closure Alternatives Assessment is still under review by Illinois EPA.

2.5.9 A certification by a professional engineer that the corrective action demonstration is accurate and complete must be provided in accordance with Section 845.660(a)(2).

Response

See Attachment 9 of the February 1, 2022 Closure Construction Permit application for the Lakeside Ash Pond and Dallman Ash Pond. . CWLP believes this certification is sufficient but can provide a separate certification if needed. Future corrective action permit applications will also contain appropriate professional engineer certifications.

2.5.10 The permit application states multiple methods that might be used for groundwater corrective action. Any corrective action taken must be compliant with Sections 845.660, 845.670, and 845.680.

Response

The Closure Alternatives Assessment and Assessment of Corrective Measures discusses the various corrective measures that were evaluated for groundwater corrective action. The groundwater corrective action to be implemented at the facility is based on the in-place closure of the CCR surface impoundments with a final cover system. Although other corrective actions were evaluated as part of the Assessment of Corrective Measures, this is the only proposed corrective action. This effort requires dewatering and capping of the CCR surface impoundments to mitigate infiltration. Contaminant transport modeling demonstrates that the impacts to groundwater will not migrate beyond the facility property and will achieve compliance with the groundwater protection standards following implementation.

CWLP is unsure what additional information Illinois EPA requires and requests clarification.

2.5.11 The permit application must apply appropriate minimum detection limits for each constituent in order to evaluate the constituent statistically and to compare against the numerical groundwater protection standard in 35 IAC 845.600(a)(l).

- The following constituents have a calculated groundwater protection/background value that does not exhibit the correct use of the statistics:
  - Arsenic
  - Barium
  - Beryllium
  - Boron
  - Cadmium
  - Calcium
  - Chromium
  - Cobalt
  - Lead
  - Mercury
  - Molybdenum
  - Selenium
  - Thallium
- The following constituents have a reporting limit higher than the GWPSs in 35 IAC 845.600(a)(l) that exceed the numerical value in 35 IAC 845.600(a)(l):
  - Arsenic
  - Lead
- The following constituent numerical groundwater protection standard is incorrectly cited from 35 IAC 845.600(a)(l)(I):
  - Cobalt

Response

CWLP is in the process of collecting additional groundwater data for total arsenic at a lower reporting limit. Groundwater analytical results for total arsenic prior to third quarter 2023 used a reporting limit above the groundwater protection standards listed in 35 Ill Adm. Code 845.600. To date, CWLP has collected four of the eight required samples to calculate background concentrations. Once the additional groundwater data is collected, CWLP will provide an updated Hydrogeologic Report, Groundwater Monitoring Program and Statistical Procedures (Appendix C to Attachment A) with proposed backgrounds for total arsenic. Additionally, CWLP will use existing groundwater analytical data to propose a new background concentration for total lead per 35 Ill Adm. Code 845.600 for Illinois EPA review.

The updated Hydrogeologic Report, Groundwater Monitoring Program and Statistical Procedures provided in Appendix C of Attachment A provides the laboratory analytical reports used to calculate the revised background concentrations. As previously stated, CWLP is in the process of collecting additional background samples for total arsenic and will provide updated background concentrations for arsenic and lead when available.

2.6 Post-Closure Care Plan [35 IAC 845.220(d)(5)]

2.6.1 The specific statistical procedures that have been proposed or at least the reference to the appropriate statistical procedure in Sections 845.640(f) or (g) must be cited.

Response

CWLP is not proposing to change any statistical procedures during post-closure care from the Hydrogeologic Report, Groundwater Monitoring Program and Statistical Procedures. CWLP shall continue to use the appropriate certified statistical procedures as referenced in the Groundwater Monitoring Program of record. See Appendix E of Attachment 12 of the February 1, 2022 Closure Construction Permit application for the Lakeside Ash Pond and Dallman Ash Pond. As stated in Attachment 12, the statistical analysis chosen is the site specific upper confidence limit in accordance with 35 Ill. Adm. Code 845.640(f)(1)(c) and 845.640(g).

2.6.2 Any change to future use would constitute an amendment of the written post-closure plan and must be submitted for review and approval by the Agency in accordance with Section 845.780(d)(3)(C). The text of Section 5.0 of the Post-Closure Care Plan must be amended to state that review and approval will be sought from the Agency prior to changes to the Post-Closure Care Plan are implemented.

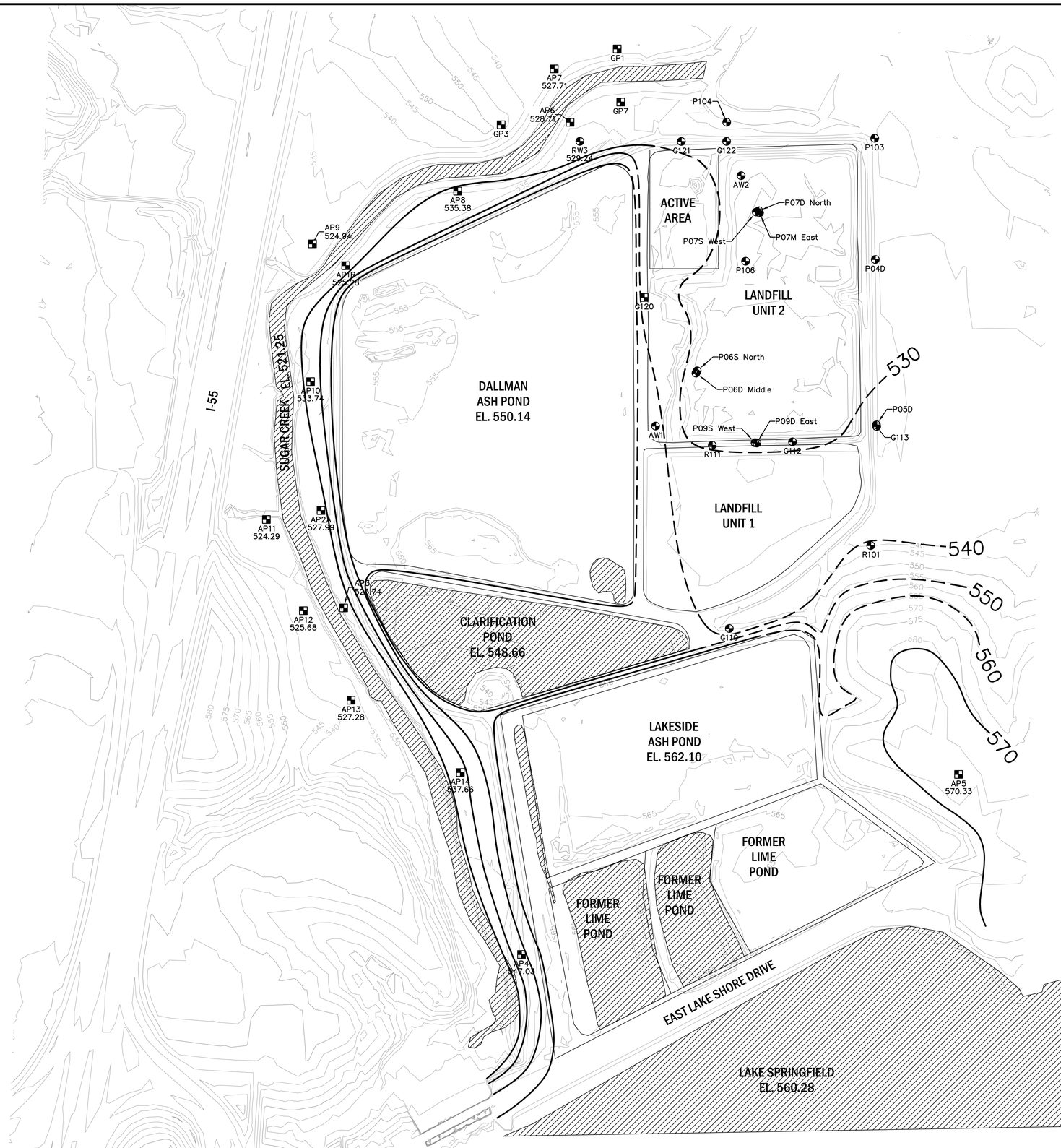
Response

CWLP agrees with Illinois EPA's statement of the legal requirements to change future use of the impoundments and believes that Section 5.0 of the Post-Closure Plan reflects this understanding and is not deficient. Section 5 of the Post-Closure Care Plan specifically states that "If future use of the impoundments is considered, a demonstration must be made to the Illinois EPA prior to such use that no disturbance will occur resulting in an increase of potential threat to human health and environment". Section 5.0 further states "Any demonstration must be certified by a qualified professional engineer." This language clearly demonstrates the intent of CWLP to seek approval by the Agency prior to the change of any future use as required pursuant to 35 Ill Adm. Code 845.480(d)(3)(C).

2.6.3 A certification by a professional engineer that the Post-Closure Care Plan meets the requirements of Section 845.780 must be provided.

Response

See Attachment 9 of the February 1, 2022 Closure Construction Permit application for the Lakeside Ash Pond and Dallman Ash Pond. CWLP believes this certification of closure construction is sufficient. If Illinois EPA disagrees, a separate professional engineer certification can be provided.



LEGEND

- 550 — EXISTING GROUND CONTOURS
- —540— GROUNDWATER CONTOURS
- CCR SURFACE IMPOUNDMENT WELL
- FGDS LANDFILL WELL
- APPROXIMATE LIMITS OF SURFACE WATER BODY
- --540-- ASSUMED CONTOUR

NOTES

1. LIDAR DATA DERIVED FROM USGS WEBSITE (FLIGHT DATE: OCTOBER 15, 2018).
2. POTENTIOMETRIC CONTOUR INTERVAL SHOWN IS 10 FEET.
3. TOPOGRAPHIC CONTOUR INTERVAL SHOWN IS 5 FEET.
4. SAMPLING DATE: 5/30/2023.
5. SUGAR CREEK SURFACE WATER ELEVATION IS BASED ON AVERAGE OF USGS GAGE 05576250 FOR 5/30/2023.
6. "NM" – NOT MEASURED
7. BOUNDARIES OF THE SITE FEATURES ARE APPROXIMATE.

N

0 200 400 800

SCALE: IN FEET

NO.	DATE	REVISION DESCRIPTION	BY

ANDREWS ENGINEERING
3300 GINGER CREEK DRIVE
SPRINGFIELD, ILLINOIS 62711-7233
PH (217) 787-2334 WWW.ANDREWS-ENG.COM
PONTIAC, IL • LOMBARD, IL • INDIANAPOLIS, IN • WARRENTON, MO

APPROVED BY: MTH | DESIGNED BY: MTH | DRAWN BY: BCK | CHK'D BY: MTH

POTENTIOMETRIC SURFACE MAP
MAY 30, 2023

PREPARED FOR
CITY WATER, LIGHT, AND POWER
SPRINGFIELD, SANGAMON COUNTY, ILLINOIS

DATE: JANUARY 2024

PROJECT ID: 240227/0029

SHEET NUMBER:

FIG. 5

© 2024 Andrews Engineering, Inc.

Tab: Layout1 Last Saved: September 5, 2024, by Ben Korpus Plotted: Thursday, September 5, 2024 10:10:28 AM
J:\S\Springfield CWLP\CWLP Ash Pond\DWG\PMAPS\2024\5-30-23.dwg