Former Patterson Avenue Fly Ash Pond Legacy CCR Surface Impoundment Applicability Extension Report

Ohio Edison Company
Former Gorge Power Station
Summit County, Ohio

November 2024

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Attachment – Field Investigation Work Plan

Operator Statement

In accordance with the applicable requirements §257.100(f)(1)(iii)(A)(2) of the United States Environmental Protection Agency's 40 Code of Federal Register (CFR) Part 257, Criteria for Classification of Solid Waste Disposal Facilities and Practices (CCR Rule), to the best of my knowledge or belief, existing and available information does not provide a sufficient basis to determine that the former Patterson Avenue Fly Ash Pond contained free liquids on or after October 19, 2015.

Dave Frederick
Director, Environmental

11/8/2024
Date

1.0 Introduction

The former Patterson Avenue Fly Ash Pond (Fly Ash Pond) is a potential legacy coal combustion residuals (CCR) surface impoundment located approximately 0.75 miles southwest of the former Gorge Power Station (Station), an inactive electric utility located along the Cuyahoga River in the City of Akron in Summit County, Ohio (OH). The Station was closed in 1991, and demolition activities were completed in 2009. The former Fly Ash Pond was used for CCR disposal when the Station was operating. The former Fly Ash Pond was closed and covered with a clay cap in 1998 and the site was subsequently converted into the Patterson Avenue Sports Complex, which consists of six baseball fields and associated infrastructure.

This Legacy CCR Surface Impoundment Applicability Extension Report was prepared in accordance with the applicable requirements §257.100(f)(1) of the United States Environmental Protection Agency's 40 Code of Federal Register (CFR) Part 257, Criteria for Classification of Solid Waste Disposal Facilities and Practices (CCR Rule).

2.0 Applicability Extension Report Requirements at §257.100(f)(1)(iii)(A)(1)

Regulatory Requirement / Reference	Description
Owner and Operator. The name and address of the person(s) owning and operating the legacy CCR surface impoundment with their business phone number and email address. *40 CFR §257.100(f)(1)(i)(A)*	Ohio Edison Company 321 White Pond Drive Akron, OH 44320 (724) 837-3000 CCR@firstenergycorp.com
Impoundment Name. The name associated with the legacy CCR surface impoundment. *40 CFR §257.100(f)(1)(i)(B)*	Former Patterson Avenue Fly Ash Pond
Impoundment Identification. Information to identify the legacy CCR surface impoundment, including a figure of the facility and where the unit is located at the facility, facility address, and the latitude and longitude of the facility. *40 CFR §257.100(f)(1)(i)(C)*	955 Patterson Ave Akron, OH 44310 Latitude: 41.110784 Longitude: -81.500175 See the attached Figure for a plan view of the facility and former unit.
Identification Number. The identification number of the legacy CCR surface impoundment if one has been assigned by the state. *40 CFR §257.100(f)(1)(i)(D)*	Available Station records reviewed prior to the date of posting do not contain record of an identification number assigned to the former Fly Ash Pond by the state.

3.0 Field Investigation Work Plan [§ 257.100(f)(1)(iii)(A)(3)]

Please see Attachment 1 for the Field Investigation Work Plan.

FIGURE

NOTES:

1. THE BOUNDARY SHOWN IS APPROXIMATE AND WAS DEVELOPED THROUGH A REVIEW OF HISTORIC AERIAL IMAGERY AND CURRENT TOPOGRAPHY.
2. THE FORMER GORGE POWER STATION WAS LOCATED APPROXIMATELY 0.75 MILES NORTHEAST OF THE DISPOSAL AREA.

REFERENCE: AERIAL IMAGERY WAS ACCESSED IN JULY 2024 FROM THE AUTOCAD CIVIL 3D GEOLOCATION MAP FEATURE (BING 2021 MICROSOFT CORPORATION, 2021, MAXAR, 2021 CNES DISTRIBUTION ARIBUS DS)

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DRAWING TITLE

FORMER PATTERSON AVENUE FLY ASH DISPOSAL FACILITY

PROJECT		CLIENT
APPLICABILITY EXTENSION REPORT LEGACY CCR SURFACE IMPOUNDMENT FORMER GORGE POWER STATION SUMMIT COUNTY, OH	gai consultants	OHIO EDISON COMPANY 321 WHITE POND DRIVE AKRON, OH 44320

GAI FILE NUMBER:	GAI DRAWING NUMBER:
C150917-54-000-00-GOR001	GOR001

DRAWN BY:	ISSUE DATE:
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ATTACHMENT 1

Former Patterson Avenue Fly Ash Pond
Field Investigation Work Plan

Ohio Edison Company
Former Gorge Power Station
Summit County, Ohio

November 2024

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Certification / Statement of Professional Opinion

The Field Investigation Work Plan (Work Plan) for the former Patterson Avenue Fly Ash Pond at the former Gorge Power Station was prepared by GAI Consultants, Inc. (GAI). It is my professional opinion as a Professional Engineer licensed in the State of Ohio that this Work Plan has been prepared in accordance with good and accepted engineering practices as exercised by other engineers practicing in the same discipline(s), under similar circumstances, and at the same time and in the same locale. It is my professional opinion that the Work Plan was prepared consistent with the requirements at Section 257.100(f)(1)(iii)(A)(3) of the United States Environmental Protection Agency's "Standards for the Disposal of Coal Combustion Residuals in Landfills and Surface Impoundments", published in the Federal Register on April 17, 2015 with an effective date of October 19, 2015 and amended on May 8, 2024 with an effective date of November 8, 2024.

The use of the words "certification" and/or "certify" in this document shall be interpreted and construed as a Statement of Professional Opinion, and is not and shall not be interpreted or construed as a guarantee, warranty, or legal opinion.

STATE OF OHIO
ARICA LEE
DITULLIO
E-80930
REGISTERED
PROFESSIONAL ENGINEER

Seal

11/7/2024
Date

1.0 Introduction

The former Patterson Avenue Fly Ash Pond (Fly Ash Pond) is a potential legacy coal combustion residuals (CCR) surface impoundment located in Summit County, Ohio and owned by the Ohio Edison Company. This Field Investigation Work Plan (Work Plan) outlines the actions to be taken to determine through a field investigation whether the former Fly Ash Pond contained both CCR and liquids on or after October 19, 2015, and as a result, may meet the definition of a legacy CCR surface impoundment. This Work Plan was prepared in accordance with the applicable requirements at Section 257.100(f)(1)(iii)(A)(3) of the United States Environmental Protection Agency's 40 Code of Federal Register (CFR) Part 257, Criteria for Classification of Solid Waste Disposal Facilities and Practices (CCR Rule).

2.0 Characterization Approach [§257.100(f)(1)(iii)(A)(3)(i)]

Characterization of the potential legacy CCR surface impoundment, as well as native geologic materials beneath and surrounding the potential unit, is important to investigate the presence of free liquids within the potential legacy CCR surface impoundment. Relevant site features, such as topography, geology, hydrogeology, hydraulic, and physical properties of materials, characteristics of the CCR, and other factors are used to develop a plan for identification of free liquids. To evaluate relevant factors as they relate to the former Fly Ash Pond, a Conceptual Site Model (CSM) will be developed. The first steps to develop the CSM consist of two general components:

- Characterization of physical, hydraulic, geotechnical, and chemical properties of CCR deposits and other layers in and immediately surrounding the potential legacy CCR surface impoundment (Section 2.1).
- Determination of the extent, spatial position, and volume of emplaced CCR (Section 2.2).

To characterize the above items, geophysical surveys may be performed followed by geologic borings in strategic locations throughout the potential legacy CCR surface impoundment and beyond its boundaries. The information available from twelve existing monitoring wells (MWs) will be evaluated to determine where additional borings may be needed beyond the boundary of the former Fly Ash Pond. Borings will be advanced until native geologic materials beneath the potential legacy CCR surface impoundment are encountered, and borings will be completed outside of the boundaries of the potential unit where needed to confirm the absence of CCR and classify geologic materials in the vicinity of the potential unit. The number and location of borings completed in the vicinity of the potential legacy CCR surface impoundment will be determined based on evaluation of geophysical survey results (if any), a review of available historic documentation, current site knowledge, and engineering judgement. Should additional information be necessary following the completion of the initial subsurface investigation, additional borings can be completed. Section 3.0 below discusses the tools and methods that will be employed to complete the borings and other aspects of the Work Plan.

The CSM will also include information about the presence of liquids (if any) that are in the vicinity of the potential legacy CCR surface impoundment, including both groundwater and surface water that may infiltrate the potential unit from the bottom, sides, and top. Groundwater considerations for the CSM are discussed in Section 4.0. Stormwater considerations for the CSM are discussed in Section 5.0.

2.1 Characterization of Material Properties

The material within and immediately surrounding the potential legacy CCR surface impoundment must be classified and characterized in order to understand its propensity for retaining liquids. To characterize the material within and surrounding the potential legacy CCR surface impoundment, geologic borings will be completed in strategic locations throughout the potential unit and beyond its boundaries as discussed above. The following tests and evaluations will be performed and included in the CSM as necessary to characterize the CCR and geologic materials within and surrounding the potential legacy CCR surface impoundment:

- Geotechnical data such as grain size, Atterberg limits, and Unified Soil Classification System (USCS) classification.
- Hydraulic data such as permeability including spatial distribution of permeability.
- Identification of any impermeable and highly permeable layers or zones in CCR or in geologic materials surrounding the potential legacy CCR surface impoundment.
- Identification of preferential pathways related to geologic materials or engineered structures in CCR or in geologic materials surrounding the potential legacy CCR surface impoundment.
- Groundwater levels and porewater pressure distribution in CCR and geologic materials surrounding the potential legacy CCR surface impoundment (as described in Section 4.0).

2.2 Determination of Emplaced CCR Extents

To understand whether the former Fly Ash Pond contains free liquids, the extents of the CCR must first be delineated. The CSM will include information about the spatial position, elevation, and general shape of the CCR within the former Fly Ash Pond. This information will again be obtained through drilling borings in strategic locations throughout the potential legacy CCR impoundment and beyond the boundaries of the potential unit as discussed above. Borings will be advanced until the native geologic materials beneath the CCR are encountered to establish the bottom elevation of CCR within the potential unit for comparison with groundwater elevations.

Visual inspection of the material obtained from each boring will be used to classify CCR and determine its lowermost and uppermost depths. Inspection of the material will provide information about whether or what type of cap material was placed on the potential legacy CCR surface impoundment after closure. Information gained from visual inspection of the borings will be used to create cross sections of the potential legacy CCR surface impoundment to refine and update the CSM as needed. From these cross sections, high-points and low areas of CCR can be identified (if any) and the geologic features surrounding the CCR can be characterized.

Samples of material obtained throughout the drilling process can be classified as explained in Section 2.1 above. Classification of each type of material within and surrounding the potential legacy CCR surface impoundment will provide insight about the nature and physical and hydraulic characteristics of both the ash and the surrounding geologic materials.

3.0 Description of Tools and Methods [§257.100(f)(1)(iii)(A)(3)(ii)]

Various tools and methods are available for assessment of free liquids within the potential legacy CCR surface impoundment. These include tools for characterizing both the CCR and the groundwater using direct and indirect methods.

Geophysical surveys are an indirect method of delineating the extent of coal ash disposal and differentiating native soils from CCR. Geophysical methods such as Electromagnetic Induction, Electrical Resistivity, Ground Penetrating Radar, Seismic Refraction, and Multi/Hyper-Spectral Imaging can be useful at for sites for which little or no previous subsurface investigations have been performed or where access may be limited due to dense vegetation, topography, or incompatible land use (such as the baseball fields at the former Fly Ash Pond). Some methods may also be useful for identifying areas of water saturation, pore fluid conductivity, and the interface between soil and rock. Compared to conventional investigation methods that require intrusive sampling, geophysical methods are not invasive, can cover large areas over a relatively short time span, and may be more cost effective than intrusive investigations.

Although geophysical surveys can’t replace conventional site characterization methods, they can be used to fill data gaps between more direct measurements or be used to identify areas to target with follow-up subsurface investigations. The use of one or more geophysical surveying methods will be evaluated based on site-specific conditions and the quality and amount of currently available hydrogeologic and geotechnical data.

Both Cone Penetration Testing (CPT) and Standard Penetration Testing (SPT) methods may be used, as necessary, to characterize the potential legacy CCR surface impoundment and surrounding area. The main purpose of the CPT (indirect method) is to measure tip resistance, sleeve friction, dynamic pore pressure, and to perform periodic pore pressure dissipation tests and determine in-situ shear wave velocity. CPT provides nearly continuous in-situ field data which can be correlated to classification and in-situ strength values based on established procedures in the literature. The CPT program may consist of collecting direct push tip and side resistance measurements assessing the variability of material parameters with depth, estimating the CCR boundary interfaces and recording dynamic pore pressure during testing. Pore pressure dissipation tests will be performed, when practical, at select intervals to correlate consolidation and permeability data and assess static phreatic levels. Limited seismic shear wave velocity testing can also be performed as needed to obtain shear wave data for additional correlation of material strength parameters.

In addition to CPT, a direct investigation method like SPT can also be performed for site characterization and to obtain high quality, undisturbed samples for laboratory testing as needed, as well as for installation of piezometers at various boring locations specific to the former Fly Ash Pond and surrounding area (more details on piezometers are provided in Section 4.0). SPT drilling operations may include using a hollow stem auger rotary drilling method, or any other appropriate method depending on site-specific conditions. The drilled boreholes will be useful to assess subsurface conditions by visual inspection, logging and classifying the materials, and determining the material boundary by direct inspection. SPT is a standardized, widely accepted test which provides a measure of penetration resistance (called blow counts or N-values) which can be correlated to the engineering properties of soils such as strength and density and can also provide information on saturation of encountered soil samples (dry, moist, wet, etc.) for initial qualitative assessment.

In addition to CPT and SPT, test pits can be excavated as needed for direct visual inspection of materials and to determine if CCR is exposed on the test pit sidewalls. These can also prove useful in assessing whether free liquid is present in the potential legacy CCR surface impoundment by direct observation of whether water is infiltrating into the test pit.

In addition to site characterization and initial qualitative assessment of free liquids using the above methods, conventional vertical standpipe piezometers (small diameter MWs) can be installed for direct assessment of the presence or absence of free liquids within the potential legacy CCR surface impoundment. The subsurface characterization and material boundary information obtained from SPT and CPT will provide the information necessary to install screens at appropriate depths to best capture the free liquids (if present) from various geologic layers and CCR within the potential legacy CCR surface impoundment. Standpipe piezometers will also be used to obtain groundwater levels, if applicable. Similarly, after developing an understanding of the geological features of the potential legacy CCR surface impoundment, in situ testing like standard slug testing, field pump testing, and/or packer testing can be performed for more robust characterization of hydrogeological features of the potential unit, as needed.

Along with the standpipe piezometers, nested, rapid response, pneumatic or vibrating-wire piezometers may be used to measure any porewater pressures that may be present in the CCR and other geologic materials. Standpipe piezometers can take a long time to respond if screened in low permeability materials, and rapid response piezometers can be useful in such materials to get more timely understanding of the groundwater conditions and assess for the presence of free liquids.

The field methods will be supplemented by laboratory testing, and samples collected from SPT drilling and/or excavated test pits will be analyzed to update the CSM and help strengthen the knowledge of the potential legacy CCR surface impoundment, including whether free liquids are present.

Some of the laboratory tests that could be performed are:

- Moisture content;
- Porosity; and
- Hydraulic conductivity.

Laboratory tests to determine additional physical, geotechnical, and hydraulic parameters can be performed, as needed, based on the information necessary to characterize the site.

4.0 Determination of Groundwater Elevations [§257.100(f)(1)(iii)(A)(3)(iii)]

One potential source of free liquids within the potential legacy CCR surface impoundment is groundwater that may intersect CCR within an impoundment. As such, it is necessary to understand the location and extents of the water table and uppermost aquifer and/or whether any perched aquifers are in the vicinity of the potential legacy CCR surface impoundment. Water level elevation data from the existing MWs will be incorporated into the CSM as needed to accurately depict site conditions. To obtain information about groundwater in the vicinity of the potential legacy CCR surface impoundment, borings will be completed at strategic locations as discussed in Section 2.0. Visual inspection of the material removed for each boring can be used to estimate the elevation associated with the uppermost aquifer and identify impermeable layers or perched zones (if any) above the aquifer.

To further characterize groundwater flow in the vicinity of the site, additional MWs and piezometers may be installed if data from the existing MW network inadequately characterizes site conditions. Locations of MWs and piezometers will be chosen based on information obtained during the subsurface investigation, historic documentation (if any), topography, and engineering judgement. Similarly, elevations of screened intervals and instrumentation will be chosen based on information obtained during the subsurface investigation, historic documentation (if any), and professional judgement.

Water levels and porewater pressures as obtained from the MWs and piezometers will be reviewed throughout the Work Plan implementation to gain an understanding of the flow patterns and how they may vary seasonally. From this data, contour maps of groundwater flow can be created as necessary to represent groundwater flow beneath and around the potential legacy CCR surface impoundment and assess whether groundwater intersects the CCR within the potential unit.

As part of this effort, various external factors that have the potential to influence water levels and porewater pressures will also be assessed. These factors include items related to surface water, man-made infrastructure within, surrounding, or in the vicinity of the potential legacy CCR surface impoundment, topography, industrial operations nearby, and preferred pathways in/out of the CCR.

The following items will be completed as necessary to characterize the liquids distribution in the vicinity of the potential legacy CCR surface impoundment:

- Providing details of piezometer monitoring including locations, depths, screened intervals, or measurement intervals of different types of piezometers (which may include MWs, vibrating wire piezometers, pressure transducers or any other device).
- Identifying sufficient number of monitoring points, which will be installed at appropriate locations and depths depending on complexity of the potential legacy CCR surface impoundment and CCR identified during characterization. The monitoring points will generally be less than 500 feet apart laterally to sufficiently capture any subsurface geologic variations. However, this distance can be increased if the data indicates little geological variability. Similarly, these monitoring points will be screened or instrumented at vertical intervals close enough to capture different layers that may contribute to free liquids (if any).

- Identifying if additional water level measuring devices are needed at units where groundwater may intersect the potential legacy CCR surface impoundment, and to identify if any preferential pathways exist.
- Identifying any perched or hydraulically isolated zones within the potential legacy CCR surface impoundment.
- Identifying the possibility of upward vertical gradients beneath the CCR material.
- Identifying surface water features, including impounded water, rivers, streams, wetlands, etc., at locations above and adjacent to the potential legacy CCR surface impoundment, and their impact on water levels and hydraulic head pressure within the CCR.
- Identifying presence and magnitude of groundwater mounding.
- Identifying seasonal or temporal variations of groundwater levels and porewater pressures.

5.0 Stormwater Evaluation [§257.100(f)(1)(iii)(A)(3)(iv)]

As part of the field investigation, stormwater flow processes at the former Fly Ash Pond will be evaluated to understand how these processes may result in the formation of free liquids in the potential unit. Stormwater processes to be evaluated include flow over the surface of the potential unit, drainage from the potential unit, and infiltration into the potential unit. The CSM will be updated to include relevant findings from the evaluation of stormwater flow processes. The attached Figure includes a current topographic map of the former Fly Ash Pond with arrows to indicate the general flow of surface water over the former Fly Ash Pond. This figure also includes labels for natural or man-made features pertinent to stormwater drainage, infiltration, and related processes, if any.

To better understand the site conditions and gather information for the stormwater evaluation, a site visit will be conducted to inspect for evidence of drainage onto or off of the potential legacy CCR surface impoundment and surrounding area, view and verify terrain and topographic features, and identify any signs of erosion or other markings which may indicate stormwater flow patterns. If drainage features are observed, the locations of each feature will be noted. If possible, design details of drainage features, such as dimensions, will be recorded.

Stormwater flow over the surface of the potential unit and drainage from the potential unit will be evaluated using the Soil Conservation Service (SCS) Runoff Curve Number (CN) method or similar process. Drainage areas at the site will be delineated based on current topography, aerial imagery, and additional knowledge gained from the site visit. Drainage area delineation will provide insight into sources and quantity of stormwater flowing onto and away from the site and identify any low points where stormwater may to collect. CNs will be developed for each drainage area identified based on aerial imagery, cover type knowledge gained from the site visit, and soil data obtained from Natural Resources Conservation Service (NRCS) Web Soil Survey. CN development will further refine knowledge of the potential unit, stormwater flows in the vicinity of the potential unit, and the potential for infiltration.

Results of the stormwater evaluation will be used to identify areas where stormwater is likely to infiltrate and result in the formation of free liquids in the potential legacy CCR surface impoundment. This information may be used in part to determine the location of soil borings as described in Section 2.0 above.

If needed, additional evaluation of stormwater surface flows to and from the potential unit can be completed to assess erosion potential or the effectiveness of existing drainage features. In this instance, stormwater flows to and/or from the potential unit could be calculated using the United States Department of Agriculture's Technical Report 55, Urban Hydrology for Small Watersheds (TR-55) or similar method. Times of concentration (TOCs) for each drainage area could be developed based on current topography, aerial imagery, and additional knowledge gained from the site visit. Peak flows for select precipitation events could be obtained using Hydraflow Hydrographs Extension for Autodesk® Civil 3D® or similar method.

The potential for stormwater infiltration into the potential unit can be modeled to assess whether it may contribute to the formation of free liquids. Any model used to assess stormwater infiltration potential will be created using site-specific data gained from the site characterization efforts described in Section 2.0 and the site visit described above.

6.0 Estimated Timeline [§257.100(f)(1)(iii)(A)(3)(v)]

The project includes components related to site characterization, monitoring, calculations, and data evaluation. Engineering efforts for design of the site characterization program are also anticipated to be required. The major phases of the project in the anticipated order of completion are discussed below:

1. ***Secure Engineering Design Firm (1-2 months).*** An engineering design firm will be retained to execute the work plan, including design of the geotechnical investigation.
2. ***Engineering Design for Geotechnical Investigation (1-2 months).*** A desktop review of available data will be completed, and a preliminary CSM will be developed. The preliminary CSM will be used to develop a design for the drilling investigation.
3. ***Secure Drilling Contractor (1 month, concurrent with Item 2).*** A bid package with the preliminary engineering design for the geotechnical investigation will be sent out to drilling contractors to select one for the geotechnical investigation.
4. ***Stormwater Site Visit (1 week, concurrent with Items 2 and 3).*** Representatives will visit the site and conduct a review of existing topography and drainage features as described in Section 5.0.
5. ***Geotechnical Investigation and Piezometer Installation (1-2 months).*** The selected drilling contractor will complete the subsurface geotechnical investigation as designed in Item 2 above. The subsurface investigation tools and methods are described in Section 3.0.
6. ***Stormwater Evaluation (2 months, concurrent with Items 2, 3, and 5).*** Calculations and assessments to evaluate stormwater flow over the potential unit, from the potential unit, and infiltration into the potential unit will be completed as described in Section 5.0.
7. ***Geotechnical Report and CSM Update (4 – 6 months, concurrent with Item 6).*** A report summarizing the drilling program, piezometer installation, monitoring program, and boring information will be prepared. An update to the preliminary CSM will also be completed to include all relevant information gathered from the subsurface investigation.
8. ***Piezometer Data Collection (1 year, concurrent with Items 6 and 7).*** Data will be collected from the piezometers and other instrumentation installed as part of the Work Plan implementation. One year of data is anticipated to be required to demonstrate that groundwater level fluctuation does not create free liquids within the emplaced CCR.
9. ***Groundwater Evaluation (1 year, concurrent with Items 6 – 8).*** As data is collected from the installed piezometers and other instrumentation, it must be evaluated. Data evaluation will occur concurrently with data collection. Resources such as groundwater contour maps will be created to help interpret the data and for use in determining whether free liquids exist within the potential legacy CCR surface impoundment.
10. ***Determination if Potential Unit Contains Free Liquids (1 year, concurrent with Items 6 – 9).*** Results from Items 6 through 9 above will be incorporated into the CSM and evaluated to make a determination about whether the potential unit contains free liquids.

7.0 Work Plan Results [§257.100(f)(1)(iii)(A)(3)(vi)]

Implementation of the Work Plan will result in observations that can be made about the potential legacy CCR surface impoundment based on the field investigations and calculations performed. Individual Work Plan results are anticipated to be as follows:

- Classification of subsurface materials obtained during the subsurface investigation.
- Boring logs indicating the characterization of the encountered materials, and presence or absence of moisture or free liquids during the subsurface investigation.
- Groundwater elevations in piezometers throughout the full monitoring period.
- Identifying the possibility of upward vertical gradients beneath the CCR material.
- Calculations providing insight about the direction of stormwater flow and cover types.
- Evaluation of the potential for infiltration of stormwater through the potential unit.

Results of the Work Plan will be reviewed first individually and then in conjunction with one another to determine whether the potential legacy CCR surface impoundment contains free liquids. A CSM consisting of characterization of physical, hydraulic, geotechnical and chemical properties of CCR deposits and other layers in and immediately surrounding the potential legacy CCR surface impoundment, as well as determination of the shape, spatial position, and volume of emplaced CCR will be developed. This will aid in looking at the wholistic picture of the site and determining the presence or absence of free liquids. Since the monitoring is anticipated to take place at least over the period of one year after the installation of the monitoring points, this will be useful in making assessments over short time frames, as well as over a long period of time so that the relevant performance standard has been met if no free liquid is encountered.

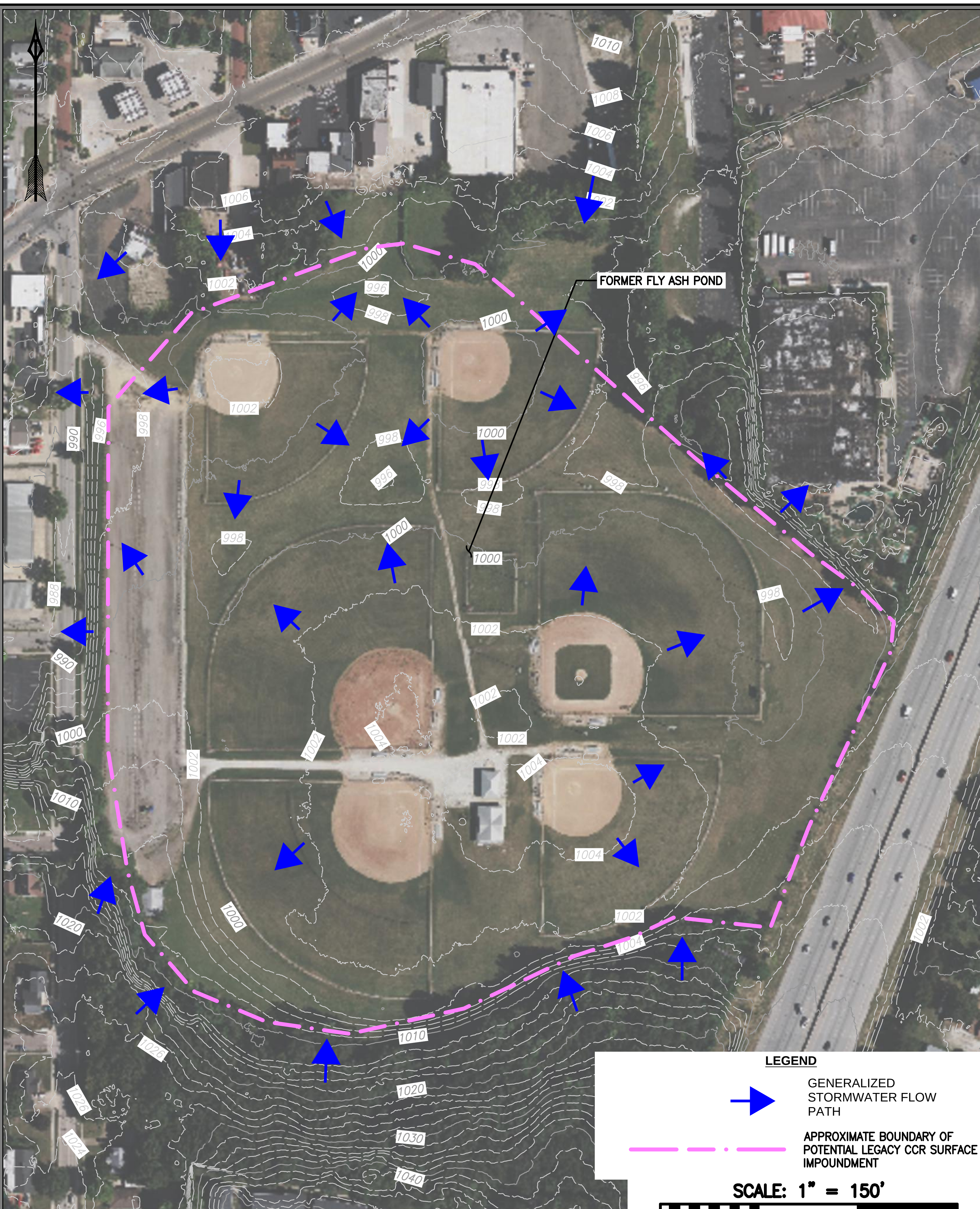
8.0 Anticipated Problems [§257.100(f)(1)(iii)(A)(3)(vii)]

Problems that could arise during the implementation of this Work Plan include:

- ***Availability of drilling contractor (1 – 2+ month delay).*** Securing a drilling contractor to complete the subsurface investigation and piezometer installation is a critical part of the overall project schedule. The availability of drilling contractors depends on a variety of factors, including time of year, previously contracted engagements and demand from other clients. Implementation of CCR Legacy Rule may cause short-term driller shortages as multiple facilities attempt to characterize potential legacy CCR surface impoundments or comply with future requirements of the CCR Legacy Rule for additional units. Additionally, the type of drill rig required for a site may influence the availability of the driller. Should availability of a driller or drill rig become an issue to the schedule, other drilling contractors can be contacted to inquire about whether the work can be completed more quickly with another company.
- ***Drill rig malfunction or inadequacy (1+ month delay).*** The drill rig used for the subsurface investigation is critical to the implementation of the Work Plan; as such, a malfunctioning drill rig has the potential to delay the project. Similarly, sometimes subsurface conditions encountered after drilling has already started require that a different method for drilling be used. Should an issue with the drill rig arise, the contractor will be asked to provide a replacement rig. If a replacement rig cannot be provided, other drilling contractors can be contacted to determine whether a different company could complete the subsurface investigation more quickly.
- ***Piezometer / instrumentation malfunction (1+ month delay).*** Piezometers installed as part of the Work Plan may malfunction. This may cause a need to reinstall an additional piezometer and/or repair the existing equipment to collect data. Should an issue with a piezometer or other instrumentation arise, effort will be made to engage the contractor to replace the piezometer or repair the existing one as soon as practical.

- ***Delays or other issues with analytical laboratory testing (2+ week delay).*** Samples of material collected during the subsurface investigation will be sent to a laboratory for testing services. Laboratory analysis issues, such as malfunctioning equipment or a lost sample, can cause delays in the range of one day to multiple weeks. Similarly, securing a laboratory to complete the sample testing depends on a variety of factors, including previously contracted engagements and demand from other clients. Should an issue with obtaining analytical laboratory results arise, samples may be sent to a different laboratory that is able to complete the required testing without delay.
- ***Coordination with stakeholders (1+ week delay).*** Although the former Fly Ash Pond is owned by the Ohio Edison Comany, the land is used as a sports complex for baseball through an agreement with the City of Akron. Access to the site to conduct the subsurface investigation will need to be discussed with city representatives prior to mobilization to the site to maintain a safe work area.
- ***Weather delays (1+ week delay).*** Weather conditions can significantly affect project schedules. While some weather conditions can be predicted and accounted for in the schedule, the weather in Ohio is variable, and conditions can change on a daily or weekly basis. Frozen ground and freezing temperatures may prevent or slow drilling efforts. Heavy rains, winds, and fog may occur periodically, and these weather events can also prevent or slow drilling efforts. The safety of all individuals involved with the project is paramount and, as such, field work efforts will be delayed if a potentially dangerous weather event arises. In the event of a weather delay, the schedule for work will be reviewed and updated as necessary to accommodate the delay without impact to the overall project schedule.

FIGURE



NOTES:

1. THE BOUNDARY SHOWN IS APPROXIMATE AND WAS DEVELOPED THROUGH A REVIEW OF HISTORIC AERIAL IMAGERY AND CURRENT TOPOGRAPHY.
2. THE FORMER GORGE POWER STATION WAS LOCATED APPROXIMATELY 0.75 MILES NORTHEAST OF THE DISPOSAL AREA.

REFERENCE: AERIAL IMAGERY WAS ACCESSED IN JULY 2024 FROM THE AUTOCAD CIVIL 3D GEOLOCATION MAP FEATURE (BING 2021 MICROSOFT CORPORATION, 2021, MAXAR, 2021 CNES DISTRIBUTION ARIBUS DS)

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DRAWING TITLE

STORMWATER PLAN - FORMER FLY ASH POND

PROJECT		CLIENT	DRAWN BY:	ISSUE DATE:
APPLICABILITY EXTENSION REPORT LEGACY CCR SURFACE IMPOUNDMENT FORMER GORGE POWER STATION SUMMIT COUNTY, OH	gai consultants	OHIO EDISON COMPANY 321 WHITE POND DRIVE AKRON, OH 44320	WOLFESM	10/29/2024
			CHECKED BY: ROUNCLL	SCALE: AS SHOWN
GAI FILE NUMBER: C150917-54-000-00-GOR002		GAI DRAWING NUMBER: GOR002	APPROVED BY: DITULAL	SHEET NO.: 001 OF 001

This drawing was produced with computer aided drafting technology and is supported by electronic drawing files. Do not revise this drawing via manual drafting methods.

ISSUING OFFICE: Pittsburgh | 385 E. Waterfront Drive, Homestead, PA 15120

PLOTTED ON: 11/7/2024 4:07:24 PM PLOTTED BY: Staci Wolfe PLOT FILE: GAI.stb

GAI CAD FILE PATH: Z:\Energy\2015\C150917.54 – FE CCR Legacy Rule Initial\CAD\ACAD\Production Drawings\APPLICABILITY REPORT FIGURES\C150917-54-000-00-GOR002.dwg