



OHIO VALLEY ELECTRIC CORPORATION

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740-289-7200

WRITER'S DIRECT DIAL NO:
740-897-7768

March 1, 2023

Delivered Electronically

Ms. Anne Vogel, Director
Ohio Environmental Protection Agency
50 West Town Street, Suite 700
P.O. Box 1049
Columbus, OH 43216-1049

Dear Ms. Vogel:

**Re: Ohio Valley Electric Corporation
2022 Annual Groundwater Monitoring and Corrective Actions Report**

As required by 40 CFR 257.106(h)(1), the Ohio Valley Electric Corporation (OVEC) is providing notification to the Director of the Ohio Environmental Protection Agency that the sixth Annual CCR Groundwater Monitoring and Corrective Actions Report has been completed in compliance with 40 CFR 257.90(e) for OVEC's Kyger Creek Station. The groundwater monitoring report and corrective action report was prepared by AGES, Inc., the site's hydrogeologist, summarizing the findings for 2022. The report has been placed in the facility's operating record in accordance with 40 CFR 257.105(h)(1), as well as, on the company's publicly accessible internet site in accordance with 40 CFR 257.107(h)(1), which can be viewed at <https://www.ovec.com/CCRCompliance.php>.

If you have any questions, or require any additional information, please call me at (740) 289-7259 or Tim Fulk at (740) 897-7768.

Sincerely,

A handwritten signature in black ink that reads "Jeremy Galloway". The signature is written in a cursive, flowing style.

Jeremy Galloway
Environmental Specialist II

JDG:tlf



Stantec Consulting Services Inc.
11687 Lebanon Road, Cincinnati OH 45241-2012

January 31, 2023

File: 175532011

Ohio Valley Electric Corporation
Indiana-Kentucky Electric Corporation
Attention: Mr. Jeremy Galloway
3932 U.S. Route 23
P.O. Box 468
Piketon, Ohio 45661

**Reference: 2022 Annual Groundwater Monitoring and Corrective Action Report
EPA Final Coal Combustion Residuals (CCR) Rule
Kyger Creek Generating Station
Cheshire, Ohio**

Dear Mr. Galloway,

The EPA Final CCR Rule requires owners or operators of existing CCR landfills and surface impoundments to prepare an annual groundwater monitoring and corrective action report no later than January 31 of the year following the calendar year a groundwater monitoring system has been established for such CCR unit as required by 40 CFR 257.90(e). For the Ohio Valley Electric Corporation (OVEC), this applies to the Kyger Creek Station's South Fly Ash Pond, Boiler Slag Pond, and CCR Landfill.

The annual report must document the status of the groundwater monitoring and corrective action program for the CCR unit, summarize key actions completed, describe any problems encountered, discuss actions to resolve the problems, and project key activities for the upcoming year. At a minimum, the annual groundwater monitoring and corrective action report must contain the following information, to the extent available:

1. A map, aerial image, or diagram showing the CCR unit and all background (or upgradient) and downgradient monitoring wells, to include the well identification numbers, that are part of the groundwater monitoring program for the CCR unit;
2. Identification of any monitoring wells that were installed or decommissioned during the preceding year, along with a narrative description of why those actions were taken;
3. In addition to all the monitoring data obtained under §§257.90 through 257.98, a summary including the number of groundwater samples that were collected for analysis for each background and downgradient well, the dates the samples were collected, and whether the sample was required by the detection monitoring or assessment monitoring programs;
4. A narrative discussion of any transition between monitoring programs (e.g., the date and circumstances for transitioning from detection monitoring to assessment monitoring in



January 31, 2023
Mr. Jeremy Galloway
Page 2 of 2

**Reference: 2022 Annual Groundwater Monitoring and Corrective Action Report
EPA Final Coal Combustion Residuals (CCR) Rule
Kyger Creek Generating Station
Cheshire, Ohio**

addition to identifying the constituent(s) detected at a statistically significant increase over background level); and

5. Other information required to be included in the annual report as specified in §§257.90 through 257.98.

OVEC has retained Applied Geology and Environmental Science, Inc. of Clinton, Pennsylvania (AGES) to perform the Kyger Creek Station's groundwater monitoring and corrective action support under the EPA Final CCR Rule. The 2022 CCR Regulation Groundwater Monitoring and Corrective Action Report (GWCAR) was prepared by AGES to present the annual groundwater monitoring at the South Fly Ash Pond, Boiler Slag Pond, and CCR Landfill of the Kyger Creek Station. Stantec Consulting Services Inc. (Stantec) has reviewed AGES (2023), and it meets the requirements specified in 40 CFR 257.90(e).

Please contact us with any questions or concerns. We appreciate the opportunity to continue to work with the Kyger Creek Generating Station and the Ohio Valley Electric Corporation.

Regards,

Stantec Consulting Services Inc.

Jacqueline S. Harmon, P.E.
Project Manager
Phone: (513) 842-8200 ext 8220
Jacqueline.Harmon@stantec.com

Attachment: AGES (2023). Coal Combustion Residuals Regulation, 2022 Groundwater Monitoring and Corrective Action Report, Ohio Valley Electric Corporation, Kyger Creek Station, Cheshire, Ohio, January.

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AGES

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Clinton, PA 15026

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COAL COMBUSTION RESIDUALS REGULATION 2022 GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT

**OHIO VALLEY ELECTRIC CORPORATION
KYGER CREEK STATION
CHESHIRE, OHIO**

JANUARY 2023

Prepared for:

OHIO VALLEY ELECTRIC CORPORATION (OVEC)

By:

APPLIED GEOLOGY AND ENVIRONMENTAL SCIENCE, INC.

**COAL COMBUSTION RESIDUALS REGULATION
2022 GROUNDWATER MONITORING AND
CORRECTIVE ACTION REPORT
OHIO VALLEY ELECTRIC CORPORATION
KYGER CREEK STATION
CHESHIRE, OHIO**

JANUARY 2023

Prepared for:

OHIO VALLEY ELECTRIC CORPORATION (OVEC)

Prepared By:

Applied Geology and Environmental Science, Inc.



Bethany Flaherty
Senior Scientist II



Robert W. King, P.G.
President/Chief Hydrogeologist

**COAL COMBUSTION RESIDUALS REGULATION
2022 GROUNDWATER MONITORING AND
CORRECTIVE ACTION REPORT
OHIO VALLEY ELECTRIC CORPORATION
KYGER CREEK STATION
CHESHIRE, OHIO**

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2022 GROUNDWATER MONITORING AND
CORRECTIVE ACTION REPORT
OHIO VALLEY ELECTRIC CORPORATION
KYGER CREEK STATION
CHESHIRE, OHIO**

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- C Appendix III and Appendix IV Constituents
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LIST OF ACRONYMS

AGES	Applied Geology and Environmental Science, Inc.
ASD	Alternate Source Demonstration
BSP	Boiler Slag Pond
CCR	Coal Combustion Residuals
GMPP	Groundwater Monitoring Program Plan
GWPS	Groundwater Protection Standard
Landfill	Class III Residual Waste Landfill
LCL	Lower Confidence Limit
MCL	Maximum Contaminant Level
OEPA	Ohio Environmental Protection Agency
OVEC	Ohio Valley Electric Corporation
RCRA	Resource Conservation and Recovery Act
StAP	Statistical Analysis Plan
SFAP	South Fly Ash Pond
Stantec	Stantec Consulting Services Inc.
SSI	Statistically Significant Increase
SSL	Statistically Significant Increase
TDS	Total Dissolved Solids
ug/L	Micrograms per liter
U.S. EPA	United States Environmental Protection Agency

**COAL COMBUSTION RESIDUALS REGULATION
2022 GROUNDWATER MONITORING AND
CORRECTIVE ACTION REPORT
OHIO VALLEY ELECTRIC CORPORATION
KYGER CREEK STATION
CHESHIRE, OHIO**

EXECUTIVE SUMMARY

The Kyger Creek Station, located in Cheshire, Ohio, is a 1.1 gigawatt coal-fired generating station operated by Ohio Valley Electric Corporation (OVEC). The Kyger Creek Station has five (5), 217-megawatt generating units and has been in operation since 1955. Beginning in 1955, Coal Combustion Residuals (CCRs) were sluiced to surface impoundments located in the plant site. During the course of plant operations, CCRs have been managed in various units at the station.

There are three (3) CCR units at the Kyger Creek Station:

- Class III Residual Waste Landfill (Landfill);
- Boiler Slag Pond (BSP); and
- South Fly Ash Pond (SFAP).

A brief overview of the current status of groundwater monitoring and corrective action programs for the CCR units is provided below:

Landfill

At the start of this 2022 reporting period, the Landfill was operating under the Detection Monitoring program in accordance with §257.94 of the CCR Rule. The ninth and tenth rounds of Detection Monitoring were conducted in March and October 2022, respectively. Based on the sampling results, it was determined that there were no Appendix III constituent SSIs over background for either Detection Monitoring events. Therefore, the Landfill will remain operating under the Detection Monitoring program in accordance with §257.94 of the CCR Rule.

BSP

At the start of this 2022 reporting period, the BSP was operating under the Assessment Monitoring program in accordance with §257.95 of the CCR Rule. Based on exceedances of the Groundwater Protection Standard (GWPS) for an Appendix IV constituent (Arsenic at well KC-15-07), an assessment of corrective measures was initiated on May 15, 2019. An Assessment of Corrective Measures Report was completed on September 19, 2019 (Revision 1.0, November 2020); a public meeting was held on November 6, 2019.

The eighth and ninth rounds of Assessment Monitoring were conducted in March and October 2022, respectively. Based on the sampling results, it was determined that there were Appendix III SSIs over background. SSIs were confirmed in well KC-15-08 (Boron, Calcium, Total Dissolved Solids [TDS] and Sulfate) during the March 2022 Assessment Monitoring event and in well KC-15-08 (Boron, Calcium and TDS) during the October 2022 Assessment Monitoring event.

Arsenic, an Appendix IV constituent, exceeded the GWPS in well KC-15-07 during both Assessment Monitoring events. Arsenic did not exceed the GWPS in wells located at the property boundary downgradient of the BSP indicating that Arsenic exceedances are confined to the site. Based on these results, the BSP will remain operating under the Assessment Monitoring program in accordance with §257.95 of the CCR Rule.

To support the selection of a remedy, field monitoring activities, including the collection of water level measurements and ongoing groundwater sampling, were performed during 2022. Although a remedy was not selected pursuant to §257.97 of the CCR Rule during this current annual reporting period, the continued evaluation of remedial activities pursuant to §257.97 and §257.98 of the CCR Rule will continue during the 2023 annual reporting period.

SFAP

At the start of this 2022 reporting period, the SFAP was operating under the Assessment Monitoring program in accordance with §257.95 of the CCR Rule. The eighth and ninth rounds of rounds of Assessment Monitoring were conducted in March and October 2022, respectively. Based on the sampling results, it was determined that there were Appendix III SSIs over background. During the March 2022 Assessment Monitoring event SSIs were confirmed in wells KC-15-18 (Calcium, Chloride, TDS and Sulfate), KC-15-19 (Boron, Calcium, TDS and Sulfate), KC-15-20 (Calcium) and KC-15-21 (Calcium). During the October 2022 Assessment Monitoring event SSIs were confirmed in wells KC-15-18 (Calcium and Chloride), KC-15-20 (Calcium) and KC-15-21 (Calcium).

As part of the Assessment Monitoring program, concentrations of the Appendix IV constituents are compared to the applicable GWPS. No exceedances were noted during the March and October 2022 Assessment Monitoring events for any well included in the approved monitoring program. The SFAP will remain operating under the Assessment Monitoring program in accordance with §257.95 of the CCR Rule.

**COAL COMBUSTION RESIDUALS REGULATION
2022 GROUNDWATER MONITORING AND
CORRECTIVE ACTION REPORT
OHIO VALLEY ELECTRIC CORPORATION
KYGER CREEK STATION
CHESHIRE, OHIO**

1.0 INTRODUCTION

On December 19, 2014, the United States Environmental Protection Agency (U.S. EPA) issued their final Coal Combustion Residuals (CCR) regulation which regulates CCR as a non-hazardous waste under Subtitle D of Resource Conservation and Recovery Act (RCRA) and became effective six (6) months from the date of its publication (April 17, 2015) in the Federal Register, referred to as the “CCR Rule.” The rule applies to new and existing landfills, and surface impoundments used to dispose of or otherwise manage CCR generated by electric utilities and independent power producers. Because the rule was promulgated under Subtitle D of RCRA, it does not require regulated facilities to obtain permits, does not require state adoption, and cannot be enforced by U.S. EPA.

This Groundwater Monitoring and Corrective Action Report has been prepared in accordance with §257.90 (e) of the CCR Rule and documents the status of the groundwater monitoring and corrective action program for each CCR unit, summarizes the key actions completed during 2022, describes any problems encountered, discusses actions to resolve the problems, and projects key activities for the upcoming year.

2.0 BACKGROUND

The Kyger Creek Station, located in Cheshire, Ohio, is a 1.1 gigawatt coal-fired generating station operated by Ohio Valley Electric Corporation (OVEC). The Kyger Creek Station has five (5), 217-megawatt generating units and has been in operation since 1955. Beginning in 1955, CCRs were sluiced to surface impoundments located in the plant site. During the course of plant operations, CCRs have been managed in various units at the station.

There are three (3) CCR units at the Kyger Creek Station (Figure 1):

- Class III Residual Waste Landfill (Landfill);
- Boiler Slag Pond (BSP); and
- South Fly Ash Pond (SFAP).

A discussion of the status of the groundwater monitoring program for each CCR unit is presented in the following sections of this report.

3.0 CLASS III RESIDUAL WASTE LANDFILL

The Landfill is a residual solid waste landfill located approximately one-half mile south of the intersection of Little Kyger Creek Road and Shaver Road in Addison Township, Gallia County, Ohio (Figure 1). The Landfill is bordered on the east by Shaver Road, and on the west, north and south by vacant, forested land owned by OVEC. The proposed permitted footprint of the Landfill occupies approximately 98 acres and is capable of managing approximately 20.4 million cubic yards (approximately 4,000 tons per day) of Class III residual waste generated by the coal-powered Kyger Creek Station located approximately two (2) miles southeast of the Landfill.

3.1 Groundwater Monitoring Network

As detailed in the Monitoring Well Installation Report (Applied Geology and Environmental Science, Inc. [AGES] 2016a), the CCR groundwater monitoring network for the Landfill consists of the following 13 wells:

- BUSW-1 (Downgradient);
- BUSW-2 (Upgradient);
- BUSW-3 (Variable: usually side or downgradient);
- BUSW-4 (Downgradient);
- BUSW-5 (Upgradient);
- IMW-1BU (Upgradient);
- BUSW-8 (Upgradient);
- BUSW-10 (Downgradient);
- MW-3D (Upgradient);
- IMW-2BU (Upgradient);
- MW-4D (Upgradient);
- CCR-1BU (Downgradient); and
- CCR-2BU (Downgradient).

The locations of all of the wells in the groundwater monitoring network are shown on Figure 2. As listed above and shown on Table 3-1, the CCR groundwater monitoring network for the Landfill includes seven (7) upgradient monitoring wells and six (6) downgradient monitoring wells, which satisfies the requirements of the CCR Rule.

At the time of the October 2022 sampling event, the sample team determined that well BuSW-5 had been destroyed. The well could not be sampled, and a replacement well will be installed prior to the next semi-annual sampling event in the spring of 2023. Sampling results from the replacement well will be used to evaluate whether the well is a representative replacement for the original well.

Groundwater levels measured in 2022 are included in Table A-1 of Appendix A. Groundwater flow maps for the two (2) monitoring events completed in 2022 are included in Appendix B.

3.2 Groundwater Sampling

In accordance with §257.94 of the CCR Rule, OVEC completed two (2) rounds of groundwater monitoring in 2022 in accordance with the requirements of the Detection Monitoring Program at the Landfill. The ninth round of Detection Monitoring samples was collected in March 2022 and the tenth round of Detection Monitoring groundwater samples was collected in October 2022. In accordance with §257.90(e)(3), Table 3-2 presents a sampling summary, including the number of groundwater samples collected for analysis for each background and downgradient well, the dates the samples were collected, and whether the sample was required by the Detection or the Assessment Monitoring program. Table 3-3 summarizes the measurements of field parameters collected at the completion of purging, immediately prior to collection of each sample. All samples were collected in accordance with the Groundwater Monitoring Program Plan (GMPP) (AGES 2016b) and shipped to an analytical laboratory to be analyzed for all of the parameters listed in Appendix III of the CCR Rule (Appendix C).

3.3 Analytical Results

Upon receipt of the March and October 2022 analytical results, the groundwater monitoring data were statistically evaluated in accordance with §257.93(f) of the CCR Rule and the Kyger Creek Station CCR Statistical Analysis Plan (StAP) (Stantec Consulting Services Inc. [Stantec] 2021). Appendix D summarizes the analytical results for groundwater samples collected in 2022. No potential SSIs were identified during either Detection Monitoring events. Therefore, the Landfill will remain in Detection Monitoring.

4.0 BOILER SLAG POND

The BSP is located at the south end of the Kyger Creek Station and is approximately 32 acres in size (Figure 3). The BSP was built in 1955 to serve as a process and disposal area for the coal combustion waste products generated at the station. Overflow from the BSP is carried into a reinforced concrete intake structure at the south end of the Boiler Slag Complex. Water entering the intake structure is discharged into the Clearwater Pond. The Clearwater Pond was built in 1980, is approximately nine (9) acres in size and is located to the southwest end of the BSP. The Clearwater Pond is not a CCR unit and monitoring is not required.

In 2019, OVEC conducted additional groundwater sampling to characterize the nature and extent of the release and an Assessment of Corrective Measures (ACM) in accordance with §257.95(g). As part of this assessment, in April 2019, three (3) additional wells (KC-19-27, KC-19-28 and KC-19-29) were installed in the uppermost aquifer at the property boundary downgradient from the BSP (Figure 3). Details regarding the installation of these wells and potential corrective measures

are included in the ACM Report for the BSP (AGES 2020a). All details regarding the monitoring and corrective action associated with this unit in 2019 are provided in the 2019 Groundwater Monitoring and Corrective Action Report, Revision 1.0 (AGES 2020b).

4.1 Groundwater Monitoring Network

As detailed in the Monitoring Well Installation Report (AGES 2016a) and 2019 Groundwater Monitoring and Corrective Action Report, Revision 1.0 (AGES 2020b), the CCR groundwater monitoring network for the BSP consists of the following eleven (11) wells:

- KC-15-01 (Upgradient);
- KC-15-02 (Upgradient);
- KC-15-03 (Upgradient);
- KC-15-04 (Downgradient);
- KC-15-05 (Downgradient);
- KC-15-06 (Downgradient);
- KC-15-07 (Downgradient);
- KC-15-08 (Downgradient);
- KC-19-27 (Downgradient/Boundary);
- KC-19-28 (Downgradient/Boundary); and
- KC-19-29 (Downgradient/Boundary).

The locations of all the wells in the groundwater monitoring network are shown on Figure 3. As listed above and shown on Table 4-1, the CCR groundwater monitoring network for the BSP includes three (3) upgradient wells and five (5) downgradient wells, which satisfies the requirements of the CCR Rule. Three (3) wells (KC-19-27, KC-19-28 and KC-19-29) are located at the property boundary downgradient from the BSP.

At the time of the March 2022 sampling event, the sample team determined that well KC-15-05 had been destroyed. The well could not be sampled, and a replacement well (KC-15-05a) was installed in August 2022. Well KC-15-05a was installed approximately 10 feet north of original well KC-15-05 at the same depth and with the same construction as the original well. During the October 2022 sampling event, well KC-15-05a could not be safely accessed due to ongoing site construction activities. This replacement well will therefore be sampled in during future events; the results of the sampling will be used to evaluate whether the well KC-15-05a is a representative replacement for original well KC-15-05.

At the time of the October 2022 sampling event, the sample team determined that well KC-15-01 had been destroyed. The well could not be sampled, and a replacement well will be installed prior to the next semi-annual sampling event in the spring of 2023. Additionally, wells KC-15-03 and KC-15-06 could not be safely accessed to ongoing site construction activities and the wells were not sampled.

Groundwater levels measured in 2022 are included in Table A-2 of Appendix A. Groundwater flow maps for the two (2) monitoring events completed in 2022 are included in Appendix B. Groundwater in the BSP flows from the northwest to the south and southeast toward the Ohio River. Because the BSP is located adjacent to the Ohio River, during periods when the water level in the Ohio River rises significantly and flooding occurs, groundwater flow in the uppermost aquifer may temporarily reverse and groundwater will flow toward the north and west beneath the BSP.

4.2 Groundwater Sampling

In accordance with §257.95 of the CCR Rule, the eighth and ninth rounds of Assessment Monitoring were conducted in March and October 2022, respectively.

All samples were collected in accordance with the GMPP (AGES 2016b) and analyzed for all Appendix III and Appendix IV constituents, which are listed in Appendix C. In accordance with §257.90(e)(3), Table 4-2 presents a sampling summary, including the number of groundwater samples collected for analysis for each background and downgradient well, the dates the samples were collected, and whether the sample was required by the Detection or the Assessment Monitoring program. Table 4-3 summarizes the measurements of field parameters collected at the completion of purging, immediately prior to collection of each sample. All samples were shipped to an analytical laboratory to be analyzed.

4.3 Analytical Results

4.3.1 Analytical Results-Appendix III Constituents

Upon receipt, the groundwater monitoring data were statistically evaluated in accordance with §257.93(f) of the CCR Rule and the Kyger Creek Station CCR StAP (Stantec 2021). Appendix D summarizes the analytical results for groundwater samples collected in 2022.

The statistical evaluation of the data identified potential SSIs of one (1) or more Appendix III constituents in monitoring wells KC-15-04 and KC-15-08 in the March 2022 Assessment Monitoring Event and in monitoring well KC-15-08 in the October 2022 Assessment Monitoring Event (Table 4-4). In accordance with the StAP, OVEC resampled the wells for those constituents with potential SSIs. Based on the results of the resampling events, the following Appendix III SSIs were confirmed at the BSP in 2022 (Table 4-4):

March 2022 Assessment Monitoring Event Appendix III SSIs

- KC-15-08: Boron, Calcium, Total Dissolved Solids (TDS) and Sulfate.

October 2022 Assessment Monitoring Event Appendix III SSIs

- KC-15-08: Boron, Calcium and TDS.

4.3.2 Analytical Results-Appendix IV Constituents

Based on previous detections of Appendix IV constituents in groundwater at the BSP, OVEC established a Groundwater Protection Standard (GWPS) for each detected Appendix IV constituent in accordance with the §257.95(h)(1) through §257.95(h)(3) as follows:

- (1) *For constituents for which the U.S. EPA has established a Maximum Contaminant Level (MCL), the GWPS shall be the MCL for that constituent.*
- (2) *On July 30, 2018, the U.S. EPA published alternate limits to be used for several constituents that did not have previously established MCLs to be used as the GWPS for those constituents.*
- (3) *For constituents for which the background level is higher than the MCL or the alternate limit, the background concentration shall be the GWPS for that constituent.*

Table 4-5 presents the list of GWPSs for the Assessment Monitoring program at the BSP that were developed in accordance with the above requirements.

During the eighth (March 2022) and ninth (October 2022) Assessment Monitoring Events, it was confirmed that Arsenic in well KC-15-07 exceeded the GWPS of 10 micrograms per liter (ug/L) (Table 4-6).

Arsenic concentrations did not exceed the GWPS at the wells located at the property boundary downgradient from the BSP (wells KC-19-27, KC-19-28 and KC-19-29). These results indicate that Arsenic concentrations in the uppermost aquifer exceeding the GWPS are confined to the site and are not reaching the Ohio River.

5.0 SOUTH FLY ASH POND

The SFAP is located at the northwest end of the station (Figure 4). The SFAP was built in 1955 to serve as a process and disposal area for the coal combustion waste products generated at the station. This collection pond is approximately 67 acres in size and banked on all sides.

5.1 Groundwater Monitoring Network

As detailed in the Monitoring Well Installation Report (AGES 2016a), the CCR groundwater monitoring network for the SFAP consists of the following 14 wells. The wells, along with revised location designations based on updated groundwater flow directions, are:

- KC-15-09 (Upgradient);
- KC-15-10 (Upgradient);

- KC-15-11 (Upgradient);
- KC-15-12 (Upgradient);
- KC-15-13 (Upgradient);
- KC-15-14 (Upgradient);
- KC-15-15 (Variable);
- KC-15-16 (Variable);
- KC-15-17 (Variable);
- KC-15-18 (Downgradient);
- KC-15-19 (Downgradient);
- KC-15-20 (Downgradient);
- KC-15-21 (Downgradient); and
- KC-15-22 (Downgradient).

The locations of the monitoring wells are shown on Figure 4. As listed above and shown on Table 5-1, the CCR groundwater monitoring network for the SFAP includes six (6) upgradient and five (5) downgradient wells, which satisfies the requirements of the CCR Rule.

At the time of the June 2022 resampling event, the sample team determined that well KC-15-19 had been destroyed. The well could not be sampled, and a replacement well (KC-15-19a) was installed in August 2022. Well KC-15-19a was installed approximately 10 feet north of the original well KC-15-19 at the same depth and with the same construction as the original well. Replacement well KC-15-19a was sampled in October 2022. Results from the October 2022 sampling event indicate that KC-15-19a may not be a representative replacement for KC-15-19, and the facility currently is evaluating whether the sampling results are the result of an error in accordance with 40 C.F.R. § 257.95(g)(3)(ii). The results are included in Appendix D.

As noted in the 2017 Annual Groundwater Monitoring and Corrective Action Report, due to fluctuations in the stage of the nearby Ohio River, well KC-15-17 was located upgradient of the northeast portion of the SFAP during five (5) of the nine (9) monitoring events conducted from October 2015 through September 2017 (prior to the Detection Monitoring period at the unit). Well KC-15-17 was downgradient of the area during three (3) events and sidegradient during one (1) event. Well KC-15-15 was located upgradient of the northeast portion of the SFAP during three (3) of the nine (9) events, downgradient of the area during five (5) events, and sidegradient during one (1) event. Because of this high degree of variability in flow direction, wells KC-15-15 and KC-15-17 (and well KC-15-16 which is located between the wells) could not be designated as either upgradient or downgradient. These wells are therefore not included in the statistical evaluations for the SFAP.

Groundwater levels measured during 2022 are included in Table A-3 of Appendix A. Groundwater flow maps for the two (2) monitoring events completed in 2022 are included in Appendix B. Based on the groundwater level measurements, groundwater in the central portion of the SFAP flows generally from the north/northwest to the south/southeast toward the Ohio River. However, due to

the close proximity of the SFAP to the Ohio River, changes in the stage of the river have a significant impact on the direction of groundwater flow at the unit. However, during periods when the stage of the Ohio River rises, groundwater flow in the uppermost aquifer reverses direction and flows toward the north/northwest. When the Ohio River stage lowers, groundwater levels also begin to lower and return to a more typical flow pattern. With these fluctuations in groundwater levels, the assignment of the upgradient and downgradient well designations above may fluctuate as well. A slight temporary flow reversal was noted at the SFAP during the March 2022 monitoring event, which was likely due to a previous rise in the stage of the Ohio River.

5.2 Groundwater Sampling

In accordance with §257.95 of the CCR Rule, the eighth and ninth rounds of Assessment Monitoring were conducted in March and October 2022, respectively.

All samples were collected in accordance with the GMPP (AGES 2016b) and analyzed for all Appendix III and Appendix IV constituents, which are listed in Appendix C. In accordance with §257.90(e)(3), Table 5-2 presents a sampling summary, including the number of groundwater samples collected for analysis for each background and downgradient well, the dates the samples were collected, and whether the sample was required by the Detection or the Assessment Monitoring program. Table 5-3 summarizes the measurements of field parameters collected at the completion of purging, immediately prior to collection of each sample. All samples were shipped to an analytical laboratory to be analyzed.

5.3 Analytical Results

5.3.1 Analytical Results-Appendix III Constituents

Upon receipt, the groundwater monitoring data were statistically evaluated in accordance with §257.93(f) of the CCR Rule and the Kyger Creek Station CCR StAP (Stantec 2021). Appendix D summarizes the analytical results for groundwater samples collected in 2022. The statistical evaluation identified potential SSIs of one (1) or more Appendix III constituents in monitoring wells KC-15-18, KC-15-19, KC-15-20, KC-15-21 and KC-15-22 at the SFAP. In accordance with the StAP, OVEC resampled the wells for those constituents with potential SSIs with the exception of well KC-15-19. At the time of the June 2022 resampling event, the sample team determined that well KC-15-19 had been damaged and could not be sampled. In the absence of resampling data, these SSIs were assumed to be confirmed. Based on the results, the following Appendix III SSIs were confirmed at the SFAP (Table 5-4):

March 2022 Assessment Monitoring Event Appendix III SSIs

- KC-15-18: Calcium, Chloride, TDS and Sulfate;
- KC-15-19: Boron, Calcium, TDS and Sulfate;
- KC-15-20: Calcium; and

- KC-15-21: Calcium.

October 2022 Assessment Monitoring Event Appendix III SSIs

- KC-15-18: Calcium and Chloride;
- KC-15-20: Calcium; and
- KC-15-21: Calcium.

5.3.2 Analytical Results-Appendix IV Constituents

Table 5-5 presents the list of GWPSs for the Assessment Monitoring program at the SFAP that were developed in accordance with the requirements listed in Section 4.3.2. All Appendix IV results were compared to the GWPSs. There were no GWPS exceedances during the March 2022 or October 2022 Assessment Monitoring Events for any well included in the approved monitoring program.

6.0 PROBLEMS ENCOUNTERED

During the March 2022 sampling event, well KC-15-05 was found to be damaged and could not be sampled; the well was replaced with well KC-15-05a. During the June 2022 re-sampling event, well KC-15-19 was found to be damaged and could not be sampled; the well was replaced with well KC-15-19a.

During the October 2022 sampling event, well BuSW-5 was found to be damaged and could not be sampled; the well will be replaced before the next sampling event in 2023. Also, during the October 2022 sampling event, wells KC-15-03, KC-15-05a, KC-15-06 could not be safely accessed due to ongoing site construction activities. These wells will be sampled during the next event in 2023.

There were no other problems encountered during the 2022 groundwater monitoring program at Kyger Creek Station.

7.0 PROJECTED ACTIVITIES FOR 2023

The Landfill will remain in Detection Monitoring and continue to be sampled on a semi-annual basis.

The BSP will remain in Assessment Monitoring and continue to be sampled on a semi-annual basis. As described above, an ACM has been completed for this unit and the process of the selection of remedy for the BSP will continue in 2023.

The SFAP will remain in Assessment Monitoring and continue to be sampled on a semi-annual basis.

Replacement wells KC-15-05a and KC-15-19a will be sampled during future events; the results of the sampling will be used to evaluate whether the wells are representative replacements for the respective original wells.

8.0 REFERENCES

Applied Geology and Environmental Science, Inc. (AGES) 2020a. Coal Combustion Residuals Regulation Assessment of Corrective Measures Report Boiler Slag Pond, Ohio Valley Electric Corporation, Kyger Creek Station, Cheshire, Gallia County, Ohio. Revision 1.0. November 2020.

Applied Geology and Environmental Science, Inc. (AGES) 2020b. Coal Combustion Residuals Regulation 2019 Groundwater Monitoring and Corrective Action Report, Ohio Valley Electric Corporation, Kyger Creek Station, Cheshire, Gallia County, Ohio. Revision 1.0. October 2020.

Applied Geology and Environmental Science, Inc. (AGES) 2016a. Coal Combustion Residuals Regulation Monitoring Well Installation Report, Ohio Valley Electric Corporation, Kyger Creek Station, Cheshire, Gallia County, Ohio. August 2016.

Applied Geology and Environmental Science, Inc. (AGES) 2016b. Coal Combustion Residuals Regulation Groundwater Monitoring Program Plan, Ohio Valley Electric Corporation, Kyger Creek Station, Cheshire, Gallia County, Ohio. May 2016.

Stantec Consulting Services Inc. (Stantec) 2021. Coal Combustion Residuals Regulation Statistical Analysis Plan, Ohio Valley Electric Corporation, Kyger Creek Station, Cheshire, Gallia County, Ohio. July 2021.

TABLES

**TABLE 3-1
GROUNDWATER MONITORING NETWORK
CLASS III RESIDUAL WASTE LANDFILL
CCR GROUNDWATER MONITORING PROGRAM
KYGER CREEK STATION
CHESHIRE, OHIO**

Monitoring Well ID	Designation	Date of Installation	Coordinates		Ground Elevation (ft) ²	Top of Casing Elevation (ft) ²	Top of Screen Elevation (ft)	Base of Screen Elevation (ft)	Total Depth From Top of Casing (ft)
			Northing	Easting					
CCR Unit Boundary Wells									
BUSW-1	Downgradient	6/20/2006	335756.52	2063859.43	781.46	784.21	521.21	508.10	276.11
BUSW-2	Upgradient	--	336285.22	2062985.02	792.19	794.98	526.69	506.69	288.56
BUSW-3	Variable	9/13/2007	336746.19	2062430.81	787.57	790.01	529.57	504.57	283.56
BUSW-4	Downgradient	5/17/2006	337738.57	2062566.35	780.99	783.46	535.76	525.76	257.70
BUSW-5	Upgradient	8/2/2007	338123.59	2063553.15	781.06	783.27	542.06	502.06	281.12
IMW-1BU	Upgradient	9/6/2007	337177.94	2064160.50	699.89	702.29	519.39	499.39	202.97
CCR-1BU	Downgradient	10/13/2015	337641.36	2063220.23	783.41	785.80	524.41	504.41	281.39
CCR-2BU	Downgradient	10/21/2015	336302.19	2064286.87	742.28	744.69	514.78	494.78	249.91
Supplemental CCR Wells									
BUSW-8	Upgradient	4/17/2006	337692.04	2065706.88	630.59	633.48	498.12	498.12	145.36
BUSW-10	Downgradient	6/29/2007	336364.75	2065495.79	617.26	619.76	513.85	498.85	120.91
IMW-2BU	Upgradient	9/10/2007	337417.23	2065170.91	609.77	612.44	508.96	493.96	118.48
MW-3D	Upgradient	5/1/2006	338184.68	2065077.38	741.11	743.53	515.58	505.58	237.95
MW-4D	Upgradient	5/10/2006	336365.51	2066044.36	576.87	579.51	504.94	494.94	84.57

Notes:

1. The well locations are referenced to the Ohio State Plane South, North American Datum (NAD83), east zone coordinate system.
2. Elevations are referenced to the North American Vertical Datum (NAVD) 1988.

TABLE 3-2
SAMPLES COLLECTED DURING 2022
CLASS III RESIDUAL WASTE LANDFILL
CCR GROUNDWATER MONITORING PROGRAM
KYGER CREEK STATION
CHESHIRE, OHIO

Well ID	Designation	Mar-22	Oct-22
BUSW-1	Downgradient	DM	DM
BUSW-2	Upgradient	DM	DM
BUSW-3	Variable	DM	DM
BUSW-4	Downgradient	DM	DM
BUSW-5	Upgradient	DM	DM
BUSW-8	Upgradient	DM	DM
BUSW-10	Downgradient	DM	DM
IMW-1BU	Upgradient	DM	DM
IMW-2BU	Upgradient	DM	DM
CCR-1BU	Downgradient	DM	DM
CCR-2BU	Downgradient	DM	DM
MW-3D	Upgradient	DM	DM
MW-4D	Upgradient	DM	DM

Notes:

1. DM: Detection Monitoring.

TABLE 3-3
SUMMARY OF MEASURED FIELD PARAMETERS DURING 2022
CLASS III RESIDUAL WASTE LANDFILL
CCR GROUNDWATER MONITORING PROGRAM
KYGER CREEK STATION
CHESHIRE, OHIO

Sample ID	Date	Temperature (°C)	Conductivity (µohms/cm)	pH (S.U.)	Oxidation Reduction Potential (mV)	Dissolved Oxygen (mg/L)	Turbidity (NTUs)
BUSW-1	Mar-22	8.32	753	7.44	219	1.3	3.21
BUSW-2	Mar-22	14.82	1100	7.06	219	1.55	2.23
BUSW-3	Mar-22	21.10	469	7.1	234	2.29	2.91
BUSW-4	Mar-22	18.63	1140	7.35	-128	4.86	23.6
BUSW-5	Mar-22	20.93	3920	7.23	184	2.51	2.03
BUSW-8	Apr-22	13.16	3480	7.35	169	10.04	4.2
BUSW-10	Apr-22	10.1	1020	7.4	259	3.18	1.98
IMW-1BU	Apr-22	8.16	1670	6.89	384	2.17	2.31
IMW-2BU	Mar-22	14.74	31.3	7.55	-88	1.25	1.44
MW-3D	Apr-22	9.62	520	7.25	259	3.8	2.87
MW-4D	Mar-22	16.54	2.15	6.64	2	0.23	2.71
CCR-1BU	Mar-22	15.98	3890	7.65	117	1.16	3.79
CCR-2BU	Mar-22	7.5	1110	6.85	171	0.88	3.21
BUSW-1	Oct-22	19.25	734	7.08	224	2.91	4.23
BUSW-2	Oct-22	11.93	1220	7.51	261	4.05	4.51
BUSW-3	Oct-22	12.54	1010	7.01	318	2.78	4.61
BUSW-4	Oct-22	12.28	4900	6.58	431	2.61	2.75
BUSW-5	DAMAGED - WELL COULD NOT BE SAMPLED						
BUSW-8	Oct-22	12.07	355	7.48	202	3.15	4.21
BUSW-10	Oct-22	12.05	994	7.34	244	1.93	4.55
IMW-1BU	Oct-22	12.54	2990	7.18	469	2.56	3.46
IMW-2BU	Oct-22	12.73	3620	7.26	381	3.19	3.61
MW-3D	Oct-22	11.57	536	7.29	315	2.78	3.95
MW-4D	Oct-22	11.66	2070	7.03	189	2.34	4.68
CCR-1BU	Oct-22	7.56	4070	7.2	265	3.14	4.38
CCR-2BU	Oct-22	16.36	1100	7.06	178	3.17	4.63

Notes:

1. °C: Degrees Celsius.
2. µohms/cm: Micro-ohms per centimeter.
3. S.U.: Standard Units.
4. mV: Millivolts.
5. mg/L: Milligrams per liter.
6. NTUs: Nephelometric Turbidity Units.

**TABLE 4-1
GROUNDWATER MONITORING NETWORK
BOILER SLAG POND
CCR GROUNDWATER MONITORING PROGRAM
KYGER CREEK STATION
CHESHIRE, OHIO**

Monitoring Well ID	Designation	Date of Installation	Coordinates		Ground Elevation (ft) ²	Top of Casing Elevation (ft) ²	Top of Screen Elevation (ft)	Base of Screen Elevation (ft)	Total Depth From Top of Casing (ft)
			Northing	Easting					
KC-15-01	Upgradient	8/5/2015	332114.55	2072393.84	579.77	579.20	519.77	509.77	69.43
KC-15-02	Upgradient	8/7/2012	332500.654	2072569.222	580.79	580.25	520.79	510.79	69.46
KC-15-03	Upgradient	8/12/2015	332546.402	2073001.342	582.03	581.55	520.03	510.03	71.52
KC-15-04	Downgradient	8/12/2015	331782.439	2073755.607	579.89	579.37	519.89	509.89	69.48
KC-15-05	Downgradient	8/19/2015	331569.994	2073574.832	580.52	580.07	520.52	510.52	69.55
KC-15-06	Downgradient	8/18/2015	331218.52	2073210.42	579.98	579.48	519.98	509.98	69.50
KC-15-07	Downgradient	8/11/2015	331291.75	2072957.79	578.54	578.04	508.54	498.54	79.50
KC-15-08	Downgradient	8/10/2015	331460.59	2072675.87	579.41	578.75	509.41	499.41	79.34
KC-19-27	Downgradient	4/5/2019	331507.38	2073611.94	558.22	561.13	530.22	520.22	38.00
KC-19-28	Downgradient	4/4/2019	331064.43	2073270.03	558.41	561.10	526.41	516.41	42.00
KC-19-29	Downgradient	4/3/2019	330558.94	2072840.95	561.13	564.17	530.13	520.13	41.00

Notes:

1. The well locations are referenced to the Ohio State Plane South, North American Datum (NAD83), east zone coordinate system.
2. Elevations are referenced to the North American Vertical Datum (NAVD) 1988.

TABLE 4-2
SAMPLES COLLECTED DURING 2022
BOILER SLAG POND
CCR GROUNDWATER MONITORING PROGRAM
KYGER CREEK STATION
CHESHIRE, OHIO

Well ID	Designation	Mar-22	Jun-22	Oct-22	Dec-22
KC-15-01	Upgradient	AM	NS	AM	NS
KC-15-02	Upgradient	AM	NS	AM	NS
KC-15-03	Upgradient	AM	NS	AM	NS
KC-15-04	Downgradient	AM	AM	AM	NS
KC-15-05	Downgradient	AM	AM	AM	AM
KC-15-06	Downgradient	AM	NS	AM	AM
KC-15-07	Downgradient	AM	AM	AM	AM
KC-15-08	Downgradient	AM	AM	AM	AM
KC-19-27	Downgradient	AM	NS	AM	NS
KC-19-28	Downgradient	AM	NS	AM	NS
KC-19-29	Downgradient	AM	NS	AM	NS

Notes:

1. AM: Assessment Monitoring.
2. NS: Not Sampled.

TABLE 4-3
SUMMARY OF MEASURED FIELD PARAMETERS DURING 2022
BOILER SLAG POND
CCR GROUNDWATER MONITORING PROGRAM
KYGER CREEK STATION
CHESHIRE, OHIO

Sample ID	Date	Temperature (°C)	Conductivity (µohms/cm)	pH (S.U.)	Oxidation Reduction Potential (mV)	Dissolved Oxygen (mg/L)	Turbidity (NTUs)
KC-15-01	Mar-22	12.92	711	6.73	321	16.03	4.24
KC-15-02	Apr-22	11.18	337	6.76	310	12.59	4.67
KC-15-03	Mar-22	15.79	791	6.67	219	15.01	4.26
KC-15-04	Mar-22	17.80	835	6.65	207	11.15	20.1
KC-15-05	WELL NOT SAMPLED						
KC-15-06	Mar-22	14.16	758	7.03	255	14.33	4.27
KC-15-07	Mar-22	18.82	494	6.84	121	16.76	51.4
KC-15-08	Mar-22	14.76	1260	7.36	121	16.1	4.19
KC-19-27	Mar-22	21.16	1980	6.6	223	16.82	4.44
KC-19-28	Mar-22	14.93	375	6.35	299	9.2	3.85
KC-19-29	Mar-22	13.3	926	6.95	274	18.04	40.9
KC-15-04	Jun-22	17.85	832	6.21	12.9	1.21	4.97
KC-15-07	Jun-22	19.1	813	6.71	-93.3	0.63	4.78
KC-15-08	Jun-22	18	1327	6.93	-43.1	0.59	3.81
KC-15-01	WELL NOT SAMPLED						
KC-15-02	Oct-22	15.11	870	7.19	226	12.6	4.75
KC-15-03	WELL NOT SAMPLED						
KC-15-04	Oct-22	21.56	859	6.5	340	1	4.85
KC-15-06	WELL NOT SAMPLED						
KC-15-07	Oct-22	13.79	705	6.88	-93	0.78	4.62
KC-15-08	Oct-22	14.58	1190	7.39	215	10.56	4.9
KC-19-27	Oct-22	12.69	1680	6.75	152	0.75	4.36
KC-19-28	Oct-22	14.35	516	6.54	288	0.37	4.11
KC-19-29	Oct-22	12.79	803	6.31	321	0.87	4.75
KC-15-07	Dec-22	14.29	780	7.12	-108	5.12	30.7
KC-15-08	Dec-22	14.82	1260	7.55	108	11.73	4.82

Notes:

- | | |
|---|---|
| 1. °C: Degrees Celsius. | 5. mg/L: Milligrams per liter. |
| 2. µohms/cm: Micro-ohms per centimeter. | 6. NTUs: Nephelometric Turbidity Units. |
| 3. S.U.: Standard Units. | |
| 4. mV: Millivolts. | |

TABLE 4-4
SUMMARY OF POTENTIAL AND CONFIRMED APPENDIX III SSIs
BOILER SLAG POND
CCR GROUNDWATER MONITORING PROGRAM
KYGER CREEK STATION
CHESHIRE, OHIO

Well ID	Potential SSI Parameter (Units)	8th Assessment Monitoring Sampling Event March 2022		8th Assessment Monitoring Resampling Event June 2022		9th Assessment Monitoring Sampling Event October 2022		9th Assessment Monitoring Resampling Event December 2022	
		Potential SSI Result	UTL	Potential SSI Result	Confirmed SSI (Yes/No)	Potential SSI Result	UTL	Potential SSI Result	Confirmed SSI (Yes/No)
KC-15-04	Boron (mg/L)	0.55	0.53	0.53	No	NA	NA	NA	NA
KC-15-08	Boron (mg/L)	0.57	0.53	0.67	Yes	0.57	0.54	0.6	Yes
	Calcium (mg/L)	160	129	190	Yes	170	128	160	Yes
	TDS (mg/L)	820	591	1200	Yes	980	585	830	Yes
	Sulfate (mg/L)	430	314	530	Yes	360	313	120	No

Notes:

1. SSI: Statistically Significant Increase.
2. UTL: Upper Tolerance Limit (Pooled Interwell UTL).
3. mg/L: Milligrams per liter.
4. NA: Not Applicable—no SSI.

TABLE 4-5
GROUNDWATER PROTECTION STANDARDS
BOILER SLAG POND
CCR ASSESSMENT MONITORING PROGRAM
KYGER CREEK STATION
CHESHIRE, OHIO

Appendix IV Constituents			
Constituent (Units)	Background	MCL/SMCL	GWPS
Antimony, Sb (µg/L)	1	6	6
Arsenic, As (µg/L)	7	10	10
Barium, Ba (µg/L)	125	2000	2000
Beryllium, Be (µg/L)	0.5	4	4
Cadmium, Cd (µg/L)	0.5	5	5
Chromium, Cr (µg/L)	2	100	100
Cobalt, Co (µg/L)	9.5	6*	9.5
Fluoride, F (mg/L)	0.2	4	4
Lead, Pb (µg/L)	0.9	15*	15
Lithium, Li (µg/L)	0.01	40*	40
Mercury, Hg (µg/L)	0.25	2	2
Molybdenum, Mo (µg/L)	5	100*	100
Radium 226 & 228 (combined) (pCi/L)	1.9	5	5
Selenium, Se (µg/L)	2.5	50	50
Thallium, Tl (µg/L)	0.9	2	2

Notes:

1. MCL: Maximum Contaminant Level.
2. SMCL: Secondary Maximum Contaminant Level.
3. *: Established by U.S. EPA as part of 2018 decision.
4. GWPS: Groundwater Protection Standard.
5. µg/L: Micrograms per liter.
6. mg/L: Milligrams per liter.
7. pCi/L: Picocuries per liter.

**TABLE 4-6
SUMMARY OF POTENTIAL AND CONFIRMED GWPS EXCEEDANCES
BOILER SLAG POND
CCR GROUNDWATER MONITORING PROGRAM
KYGER CREEK STATION
CHESHIRE, OHIO**

Well ID	Potential Exceedance Parameter (Units)	8th Assessment Monitoring Sampling Event March 2022		8th Assessment Monitoring Resampling Event June 2022		9th Assessment Monitoring Sampling Event October 2022		9th Assessment Monitoring Resampling Event December 2022	
		Potential Exceedance Result	GWPS	Potential Exceedance Result	Confirmed Exceedance (Yes/No)	Potential Exceedance Result	GWPS	Potential Exceedance Result	Confirmed Exceedance (Yes/No)
KC-15-07	Arsenic (µg/L)	120	10	140	Yes	150	10	130	Yes

Notes:

1. GWPS: Groundwater Protection Standard.
2. µg/L: Micrograms per liter.
3. NA: Not Applicable—no potential exceedance.

**TABLE 5-1
GROUNDWATER MONITORING NETWORK
SOUTH FLY ASH POND
CCR GROUNDWATER MONITORING PROGRAM
KYGER CREEK PLANT
CHESHIRE, OHIO**

Monitoring Well ID	Designation	Date of Installation	Coordinates		Ground Elevation (ft) ²	Top of Casing Elevation (ft) ²	Top of Screen Elevation (ft)	Base of Screen Elevation (ft)	Total Depth From Top of Casing (ft)
			Northing	Easting					
KC-15-09	Upgradient	9/15/2015	334631.959	2072494.446	587.85	587.47	516.85	506.85	80.62
KC-15-10	Upgradient	9/16/2015	335018.949	2072695.744	587.75	587.45	523.75	513.75	73.70
KC-15-11	Upgradient	8/20/2015	335426.144	2072970.304	588.07	587.71	524.07	514.07	73.64
KC-15-12	Upgradient	9/17/2015	335867.034	2073268.666	588.40	587.94	524.40	514.40	73.54
KC-15-13	Upgradient	9/1/2015	336047.047	2073665.155	588.23	587.86	521.23	511.23	76.73
KC-15-14	Upgradient	8/20/2015	335808.537	2074057.138	588.85	587.80	524.85	513.85	72.95
KC-15-15	Variable	9/2/2015	335558.54	2074472.666	587.95	587.63	523.95	513.95	73.68
KC-15-16	Variable	9/3/2015	335223.916	2074799.53	588.82	588.38	524.82	514.82	73.50
KC-15-17	Variable	9/3/2015	334881.253	2074480.308	588.68	588.13	524.68	514.68	73.45
KC-15-18	Downgradient	8/25/2015	334507.455	2074126.888	588.27	587.72	524.27	514.27	73.45
KC-15-19	Downgradient	9/9/2015	334132.454	2073771.27	588.47	588.18	524.47	514.47	73.71
KC-15-20	Downgradient	8/27/2015	333841.393	2073452.842	589.45	588.72	525.45	515.45	73.26
KC-15-21	Downgradient	8/27/2015	334089.953	2073009.526	588.28	587.84	518.28	508.28	79.56
KC-15-22	Downgradient	9/10/2015	334307.567	2072647.434	587.51	587.27	518.51	508.51	78.76

Notes:

1. The well locations are referenced to the Ohio State Plane South, North American Datum (NAD83), east zone coordinate system.
2. Elevations are referenced to the North American Vertical Datum (NAVD) 1988.

TABLE 5-2
SAMPLES COLLECTED DURING 2022
SOUTH FLY ASH POND
CCR GROUNDWATER MONITORING PROGRAM
KYGER CREEK STATION
CHESHIRE, OHIO

Well ID	Designation	Mar-22	Jun-22	Oct-22	Dec-22
KC-15-09	Upgradient	AM	NS	AM	NS
KC-15-10	Upgradient	AM	NS	AM	NS
KC-15-11	Upgradient	AM	NS	AM	NS
KC-15-12	Upgradient	AM	NS	AM	NS
KC-15-13	Upgradient	AM	NS	AM	NS
KC-15-14	Upgradient	AM	NS	AM	NS
KC-15-15	Variable	AM	NS	AM	NS
KC-15-16	Variable	AM	NS	AM	NS
KC-15-17	Variable	AM	NS	AM	NS
KC-15-18	Downgradient	AM	AM	AM	AM
KC-15-19	Downgradient	AM	AM	AM	NS
KC-15-20	Downgradient	AM	AM	AM	AM
KC-15-21	Downgradient	AM	AM	AM	AM
KC-15-22	Downgradient	AM	NS	AM	NS

Notes:

1. AM: Assessment Monitoring.
2. NS: Not Sampled.

TABLE 5-3
SUMMARY OF MEASURED FIELD PARAMETERS DURING 2022
SOUTH FLY ASH POND
CCR GROUNDWATER MONITORING PROGRAM
KYGER CREEK STATION
CHESHIRE, OH

Sample ID	Date	Temperature (°C)	Conductivity (µohms/cm)	pH (S.U.)	Oxidation Reduction Potential (mV)	Dissolved Oxygen (mg/L)	Turbidity (NTUs)
KC-15-09	Mar-22	14.28	815	8.1	371	54	4.03
KC-15-10	Mar-22	15.87	357	6.75	85	0.31	357
KC-15-11	Mar-22	15.87	555	7.07	59	0.74	4.05
KC-15-12	Mar-22	14.72	675	6.72	658	0.3	3.77
KC-15-13	Mar-22	17.15	1025	6.18	531	0.68	3.57
KC-15-14	Mar-22	17.01	774	7.61	43	0.27	4.05
KC-15-15	Mar-22	14.31	849	7.33	555	0.71	3.59
KC-15-16	Mar-22	13.23	1975	7.59	21	0.67	4.25
KC-15-17	Mar-22	14.27	2.52	7.21	-157	1.69	4.03
KC-15-18	Mar-22	14.4	1.43	7.44	-63	1.84	3.66
KC-15-19	Mar-22	15.53	1.3	7.17	-43	2.49	3.98
KC-15-20	Mar-22	18.28	1.26	5.37	61	0.31	4.21
KC-15-21	Mar-22	16.08	1.13	7.25	-8	0.4	2.88
KC-15-22	Mar-22	15.37	757	6.83	62	0.55	4.02
KC-15-18	Jun-22	17.1	1347	6.14	115.1	1.91	4.42
KC-15-19	WELL NOT SAMPLED						
KC-15-20	Jun-22	19.6	1164	6.51	85.6	1.01	4.08
KC-15-21	Jun-22	17.6	964	6.64	73.2	0.91	4.76
KC-15-22	Jun-22	15.8	669	7.12	-71.4	2.03	2.82
KC-15-09	Oct-22	14.67	1270	7.09	-9	2.05	1.6
KC-15-10	Oct-22	13.84	470	7.08	18	2.32	4.1
KC-15-11	Oct-22	13.42	494	7.16	46	2.1	2.51
KC-15-12	Oct-22	13.69	620	7.25	-3	2.57	1.32
KC-15-13	Oct-22	14.7	1071	7.31	5	2.53	3.14
KC-15-14	Oct-22	15.47	764	7.29	1	2.01	4.02
KC-15-15	Oct-22	14.45	700	6.97	61	2.05	4.31
KC-15-16	Oct-22	14.62	1721	6.89	21	1.87	1.04
KC-15-17	Oct-22	16.1	945	7.18	-1.06	2.11	4.28
KC-15-18	Oct-22	16.23	1341	7.17	-71	2.01	4.07
KC-15-20	Oct-22	15.74	1160	7.52	-28	2.72	4.11
KC-15-21	Oct-22	18.9	989	6.95	-9	3.51	3.71
KC-15-22	Oct-22	17.45	1250	7.49	-120	2.31	4.02
KC-15-18	Dec-22	12.85	1130	7.16	-157	2.61	4.32
KC-15-20	Dec-22	14.12	1200	7.43	257	12.87	12.1
KC-15-21	Dec-22	9.38	1180	7.31	-79	1.24	4.79
KC-15-22	Dec-22	12.76	759	7.01	-208	3.43	4.21

Notes:

1. °C: Degrees Celsius.
2. µohms/cm: Micro-ohms per centimeter.
3. S.U.: Standard Units.
4. mV: Millivolts.
5. mg/L: Milligrams per liter.
6. NTUs: Nephelometric Turbidity Units.

TABLE 5-4
SUMMARY OF POTENTIAL AND CONFIRMED APPENDIX III SSIs
SOUTH FLY ASH POND
CCR GROUNDWATER MONITORING PROGRAM
KYGER CREEK STATION
CHESHIRE, OHIO

Well ID	Potential SSI Parameter (Units)	8th Assessment Monitoring Sampling Event March 2022		8th Assessment Monitoring Resampling Event June 2022		9th Assessment Monitoring Sampling Event October 2022		9th Assessment Monitoring Resampling Event December 2022	
		Potential SSI Result	UTL	Potential SSI Result	Confirmed SSI (Yes/No)	Potential SSI Result	UTL	Potential SSI Result	Confirmed SSI (Yes/No)
KC-15-18	Calcium (mg/L)	170	118	170	Yes	140	115	120	Yes
	Chloride (mg/L)	100	61	100	Yes	72	61	97	Yes
	TDS (mg/L)	930	830	1100	Yes	NA	NA	NA	NA
	Sulfate (mg/L)	580	508	580	Yes	NA	NA	NA	NA
KC-15-19	Boron, B (mg/L)	16	15	NS	Yes	NA	NA	NA	NA
	Calcium (mg/L)	170	118	NS	Yes	NA	NA	NA	NA
	TDS (mg/L)	930	830	NS	Yes	NA	NA	NA	NA
	Sulfate (mg/L)	570	508	NS	Yes	NA	NA	NA	NA
KC-15-20	Calcium (mg/L)	180	118	180	Yes	190	115	180	Yes
KC-15-21	Calcium (mg/L)	200	118	160	Yes	150	115	220	Yes
KC-15-22	Calcium (mg/L)	120	118	110	No	120	115	110	No
	TDS (mg/L)	1200	830	480	No	NA	NA	NA	NA

Notes:

1. SSI: Statistically Significant Increase.
2. UTL: Upper Tolerance Limit (Pooled Interwell UTL).
3. mg/L: Milligrams per liter.
4. NA: Not Applicable.
5. NS: Well was not re-sampled. SSI was therefore assumed to be confirmed. Refer to Section 5.0.

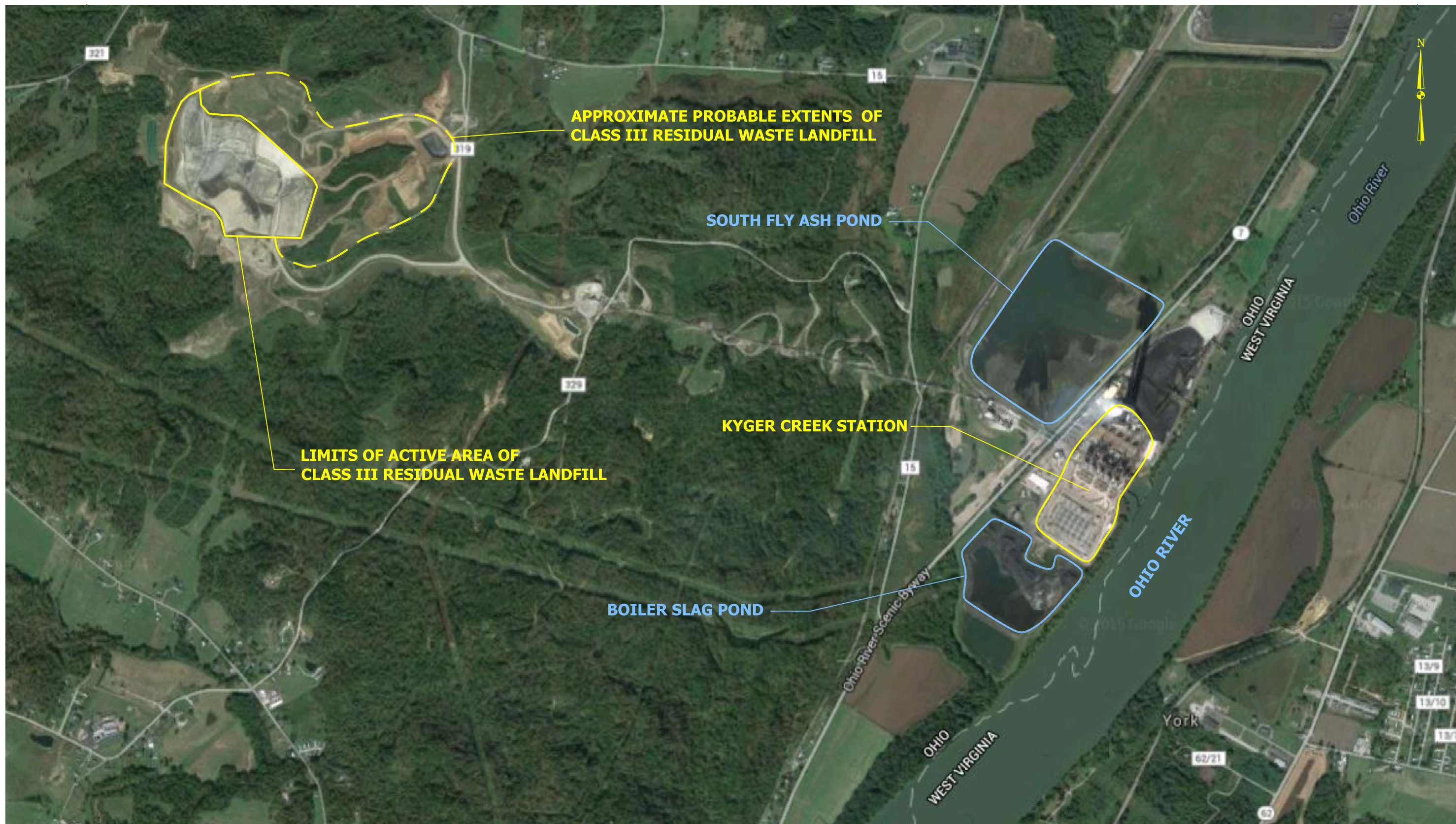
TABLE 5-5
GROUNDWATER PROTECTION STANDARDS
SOUTH FLY ASH POND
CCR ASSESSMENT MONITORING PROGRAM
KYGER CREEK STATION
CHESHIRE, OHIO

Appendix IV Constituents			
Constituent (Units)	Background	MCL/SMCL	GWPS
Antimony, Sb (µg/L)	1	6	6
Arsenic, As (µg/L)	4.7	10	10
Barium, Ba (µg/L)	179	2000	2000
Beryllium, Be (µg/L)	0.6	4	4
Cadmium, Cd (µg/L)	1.2	5	5
Chromium, Cr (µg/L)	2.5	100	100
Cobalt, Co (µg/L)	12.7	6*	12.7
Fluoride, F (mg/L)	0.32	4	4
Lead, Pb (µg/L)	1.2	15*	15
Lithium, Li (µg/L)	0.03	40*	40
Mercury, Hg (µg/L)	0.25	2	2
Molybdenum, Mo (µg/L)	11	100*	100
Radium 226 & 228 (combined) (pCi/L)	2.5	5	5
Selenium, Se (µg/L)	2.5	50	50
Thallium, Tl (µg/L)	0.7	2	2

Notes:

1. MCL: Maximum Contaminant Level.
2. SMCL: Secondary Maximum Contaminant Level.
3. *: Established by U.S. EPA as part of 2018 decision.
4. GWPS: Groundwater Protection Standard.
5. µg/L: Micrograms per liter.
6. mg/L: Milligrams per liter.
7. pCi/L: Picocuries per liter.

FIGURES



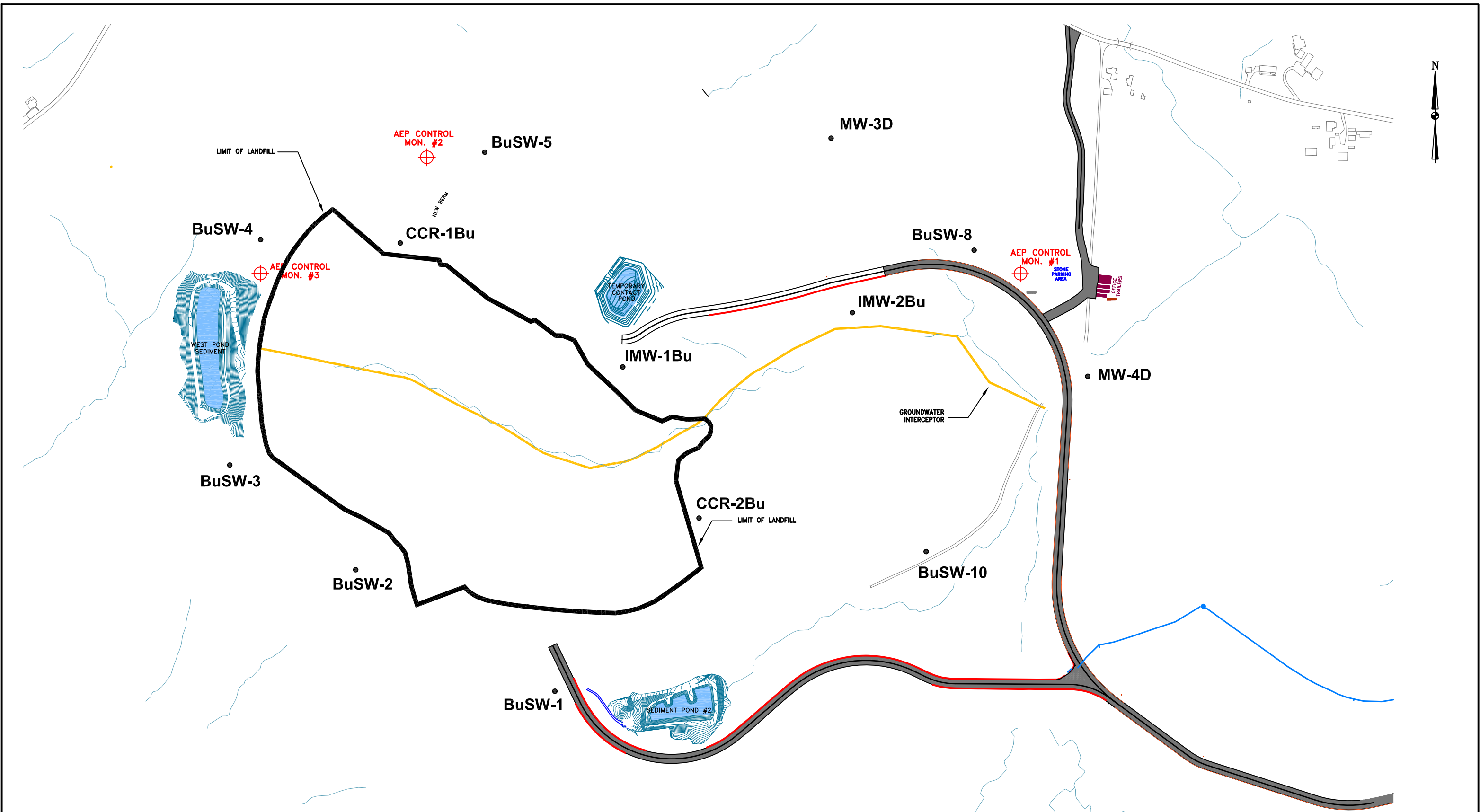
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DWG FILE	KYGER_CCR_2019 Annual GW Rpt_Aerial Site b01.dwg
DRAWING SCALE	NOT TO SCALE

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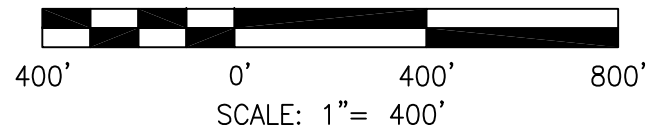
OHIO VALLEY ELECTRIC COMPANY

KYGER CREEK STATION
CHESHIRE, GALLIA COUNTY, OHIO
SITE LOCATION MAP

DRAWING NAME	FIGURE 1	REV.	0
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LEGEND:
 ● BuSW-1 BUFFALO SANDSTONE WELL



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CHECKED BY	
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DWG FILE	KYGER_CCR_2019 Annual GW Rpt_Well Locs b02.dwg
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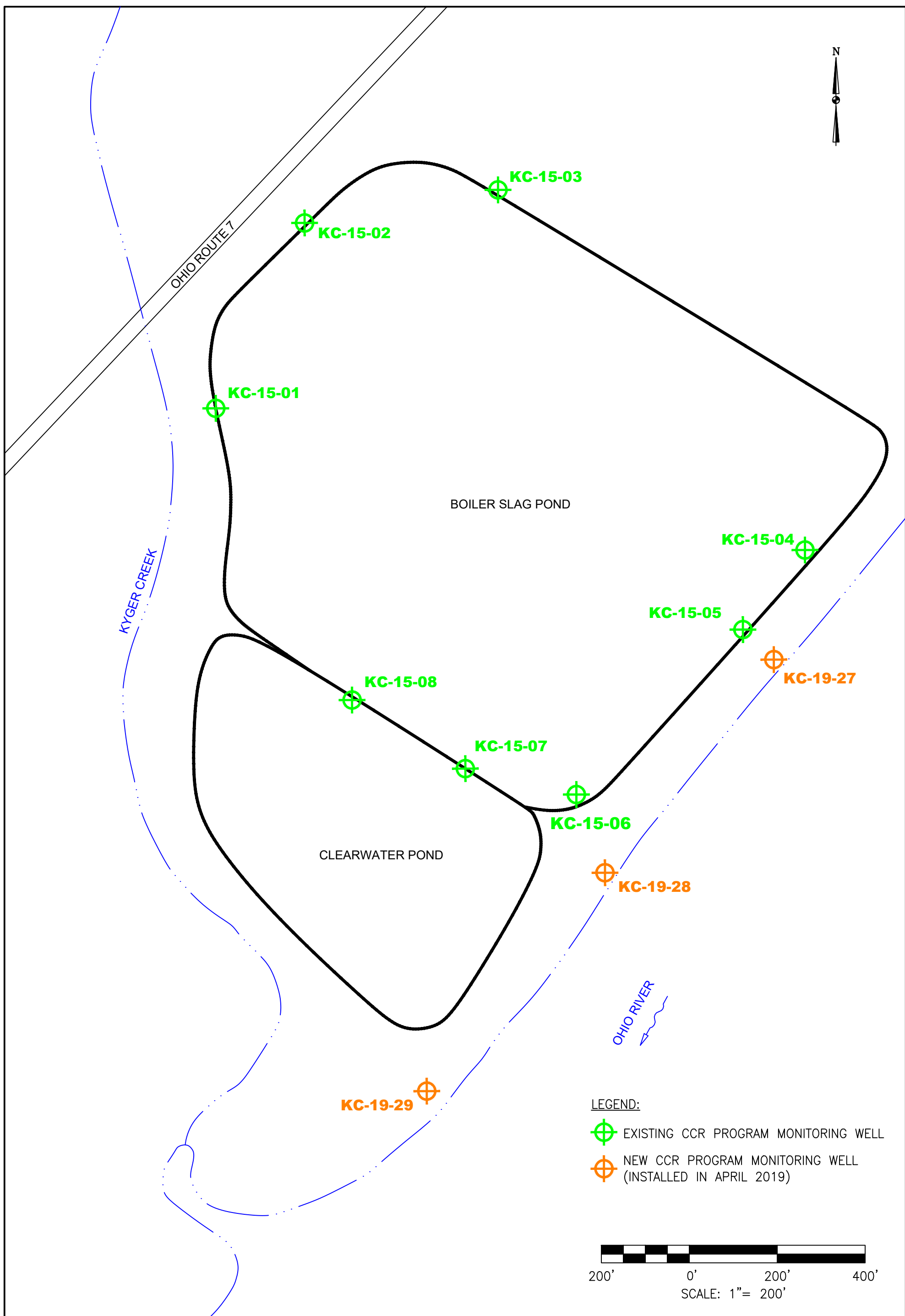


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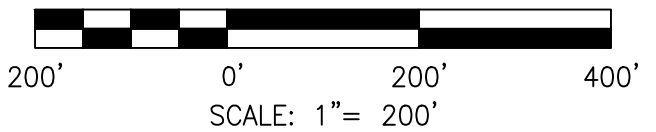
OHIO VALLEY ELECTRIC COMPANY

KYGER CREEK STATION
 CHESHIRE, GALLIA COUNTY, OHIO
 CLASS III RESIDUAL WASTE LANDFILL
 GROUNDWATER MONITORING WELL LOCATIONS


DRAWING NAME	FIGURE 2	REV.	0
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- LEGEND:**
-  EXISTING CCR PROGRAM MONITORING WELL
 -  NEW CCR PROGRAM MONITORING WELL (INSTALLED IN APRIL 2019)

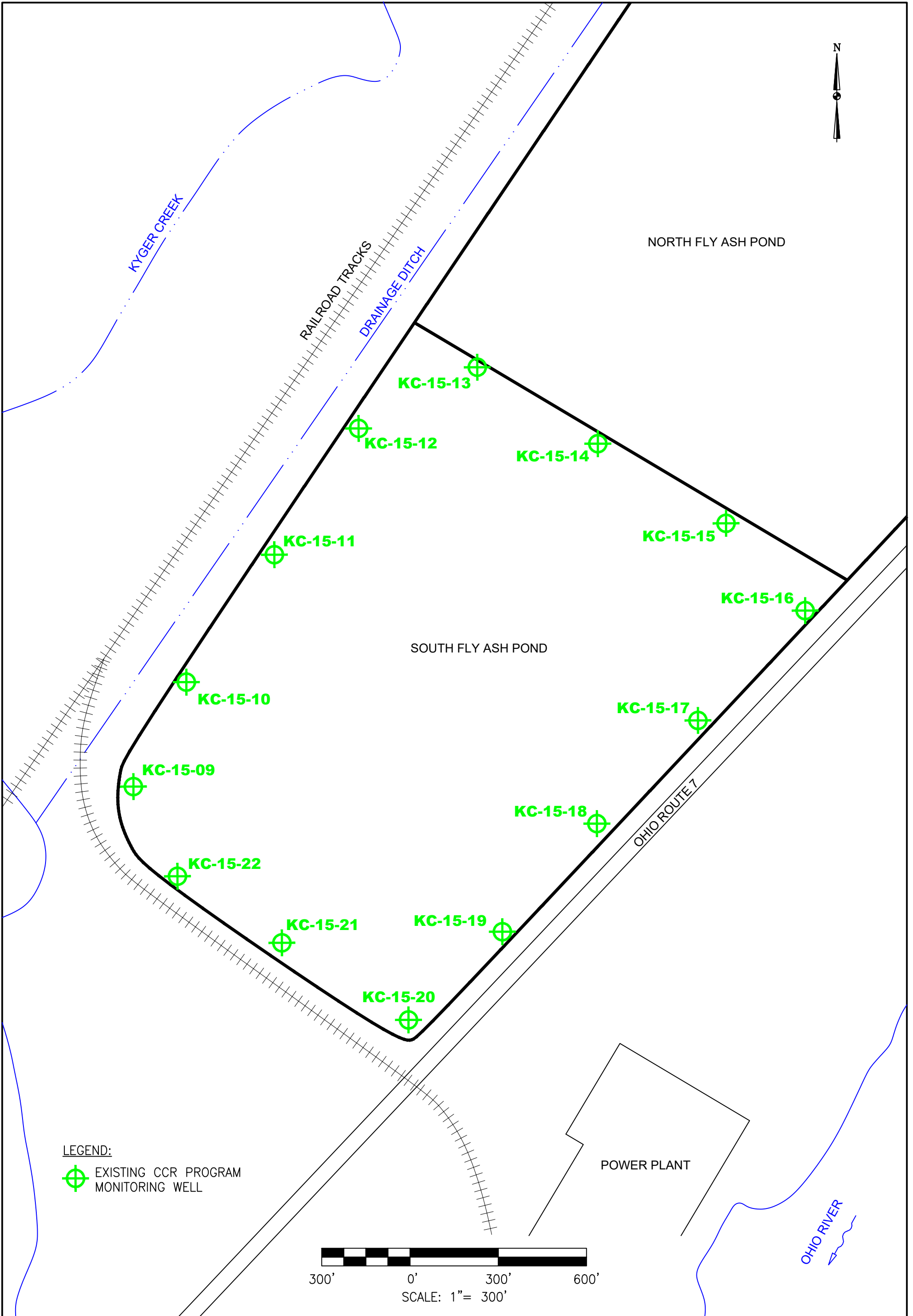


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CHECKED BY	
JOB NO.	2022042-KYGER
DWG FILE	KYGER_CCR_2022 Annual GW Rpt_Ponds+MWs b03-b04.dwg
DRAWING SCALE	1"=200'



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OHIO VALLEY ELECTRIC COMPANY	
KYGER CREEK STATION CHESHIRE, GALLIA COUNTY, OHIO BOILER SLAG POND GROUNDWATER MONITORING WELL LOCATIONS	
DRAWING NAME	FIGURE 3
REV.	0



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JOB NO.	2022042-KYGER
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DRAWING SCALE	1"=300'

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OHIO VALLEY ELECTRIC COMPANY	
KYGER CREEK STATION CHESHIRE, GALLIA COUNTY, OHIO SOUTH FLY ASH POND GROUNDWATER MONITORING WELL LOCATIONS	
DRAWING NAME	FIGURE 4
REV.	0

APPENDIX A

GROUNDWATER ELEVATIONS

TABLE A-1
SUMMARY OF GROUNDWATER ELEVATION DATA DURING 2022
CLASS III RESIDUAL WASTE LANDFILL
CCR GROUNDWATER MONITORING PROGRAM
KYGER CREEK STATION
CHESHIRE, OHIO

Well ID	Mar-22	Jun-22	Oct-22	Dec-22
	Groundwater Elevation (ft)			
BUSW-1	561.46	NM	567.33	NM
BUSW-2	563.52	NM	570.20	NM
BUSW-3	548.05	NM	555.36	NM
BUSW-4	528.45	NM	532.33	NM
BUSW-5	567.19	NM	NM	NM
BUSW-8	567.96	NM	565.19	NM
BUSW-10	572.43	NM	566.27	NM
IMW-1BU	578.02	NM	574.17	NM
IMW-2BU	569.54	NM	563.31	NM
CCR-1BU	554.79	NM	565.18	NM
CCR-2BU	566.20	NM	566.17	NM
MW-3D	607.52	NM	609.76	NM
MW-4D	568.91	NM	566.40	NM

Notes:

1. NM: Not Measured

TABLE A-2
SUMMARY OF GROUNDWATER ELEVATION DATA DURING 2022
BOILER SLAG POND
CCR GROUNDWATER MONITORING PROGRAM
KYGER CREEK STATION
CHESHIRE, OHIO

Well ID	Mar-22	Jun-22	Oct-22	Dec-22
	Groundwater Elevation (ft)			
KC-15-01	542.62	NM	538.41	NM
KC-15-02	543.07	NM	539.10	NM
KC-15-03	542.96	NM	541.34	NM
KC-15-04	541.28	538.71	535.87	NM
KC-15-05	NM	NM	NM	NM
KC-15-06	541.13	NM	538.07	NM
KC-15-07	541.22	538.63	537.68	538.39
KC-15-08	541.84	539.25	538.18	538.73
KC-19-27	540.40	NM	537.51	NM
KC-19-28	540.19	NM	537.52	NM
KC-19-29	540.40	NM	537.90	NM

Notes:

1. NM: Not Measured

TABLE A-3
SUMMARY OF GROUNDWATER ELEVATION DATA DURING 2022
SOUTH FLY ASH POND
CCR GROUNDWATER MONITORING PROGRAM
KYGER CREEK STATION
CHESHIRE, OHIO

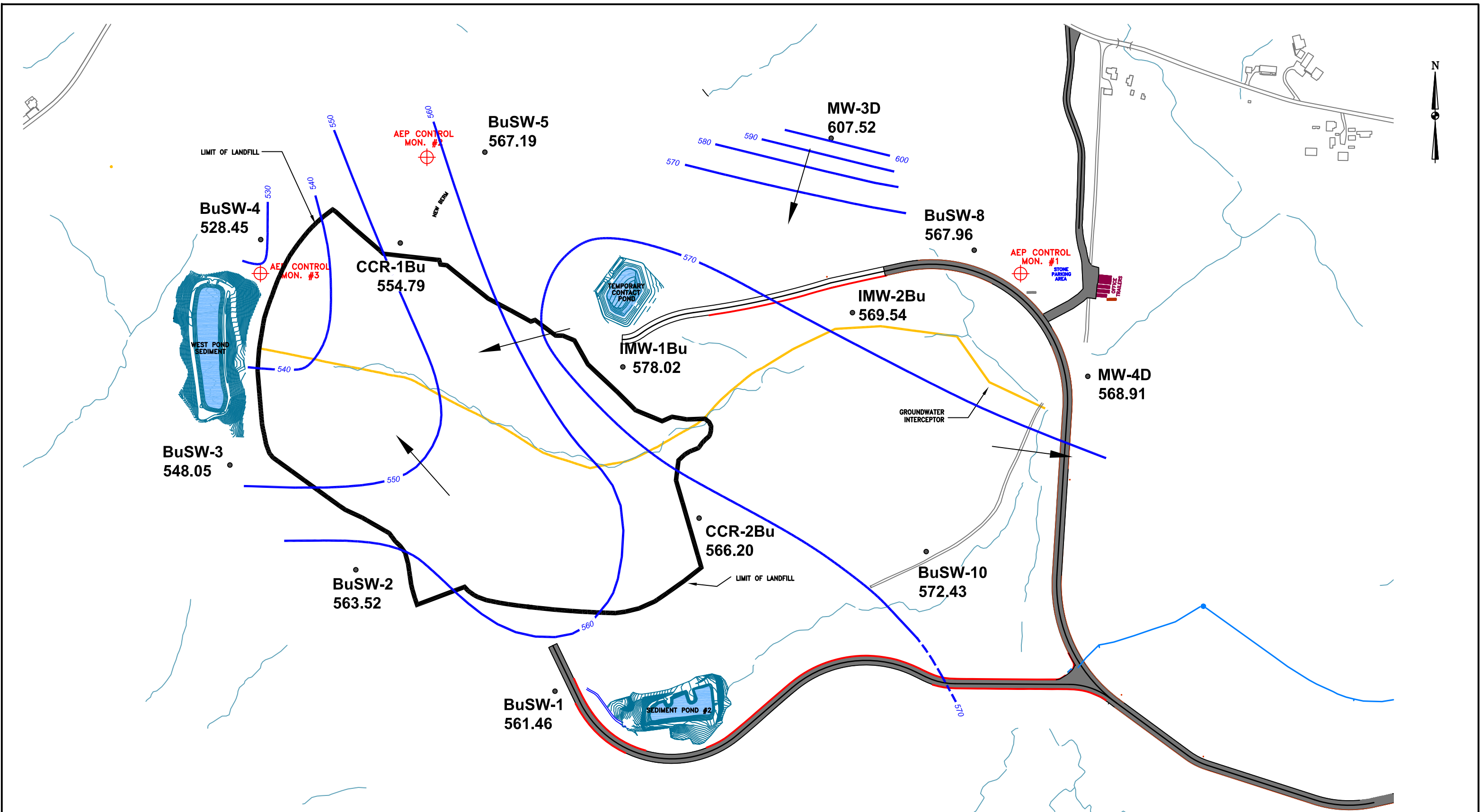
Well ID	Mar-22	Jun-22	Oct-22	Dec-22
	Groundwater Elevation (ft)			
KC-15-09	543.48	NM	540.05	NM
KC-15-10	543.68	NM	540.35	NM
KC-15-11	543.97	NM	540.45	NM
KC-15-12	541.08	NM	540.59	NM
KC-15-13	541.05	NM	540.53	NM
KC-15-14	543.86	NM	540.55	NM
KC-15-15	543.57	NM	540.30	NM
KC-15-16	543.32	NM	539.97	NM
KC-15-17	543.43	NM	540.12	NM
KC-15-18	543.16	541.01	539.81	539.92
KC-15-19	543.03	NM	NM	NM
KC-15-20	542.90	540.47	539.40	539.62
KC-15-21	543.05	542.42	538.34	539.78
KC-15-22	543.30	541.32	538.31	539.93

Notes:

1. NM: Not Measured

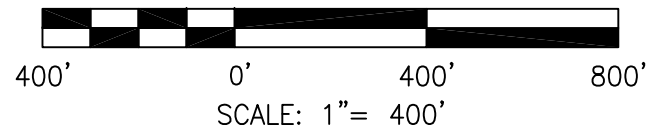
APPENDIX B

GROUNDWATER FLOW MAPS



LEGEND:

● BuSW-1 BUFFALO SANDSTONE WELL



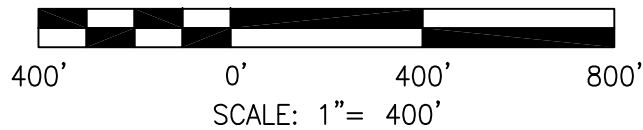
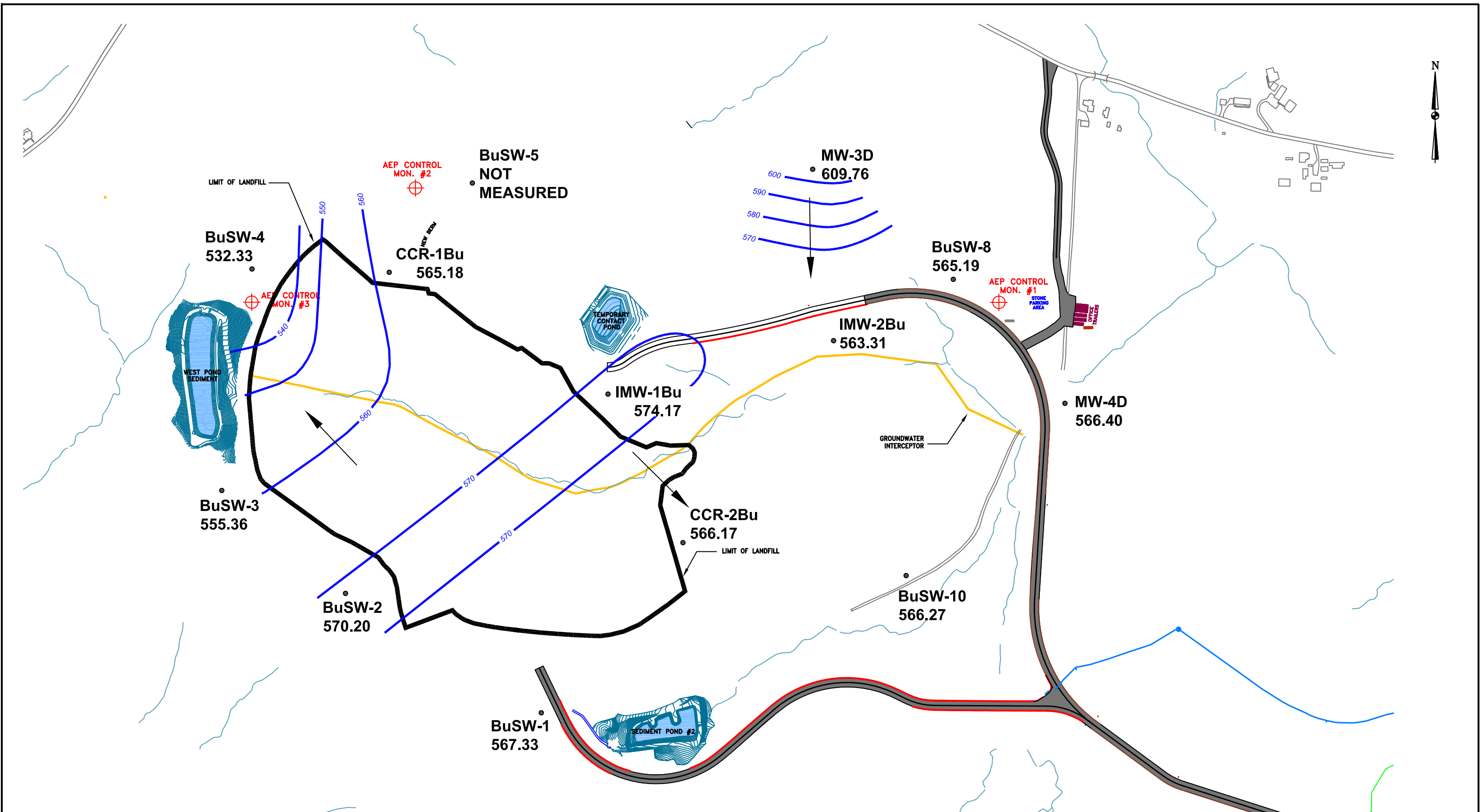
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DRAWING SCALE	AS SHOWN



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OHIO VALLEY ELECTRIC COMPANY
KYGER CREEK STATION
CHESHIRE, GALLIA COUNTY, OHIO
CLASS III RESIDUAL WASTE LANDFILL
GROUNDWATER ELEVATIONS AND FLOW MAP
MARCH 2022

DRAWING NAME	FIGURE B-1	REV.	0
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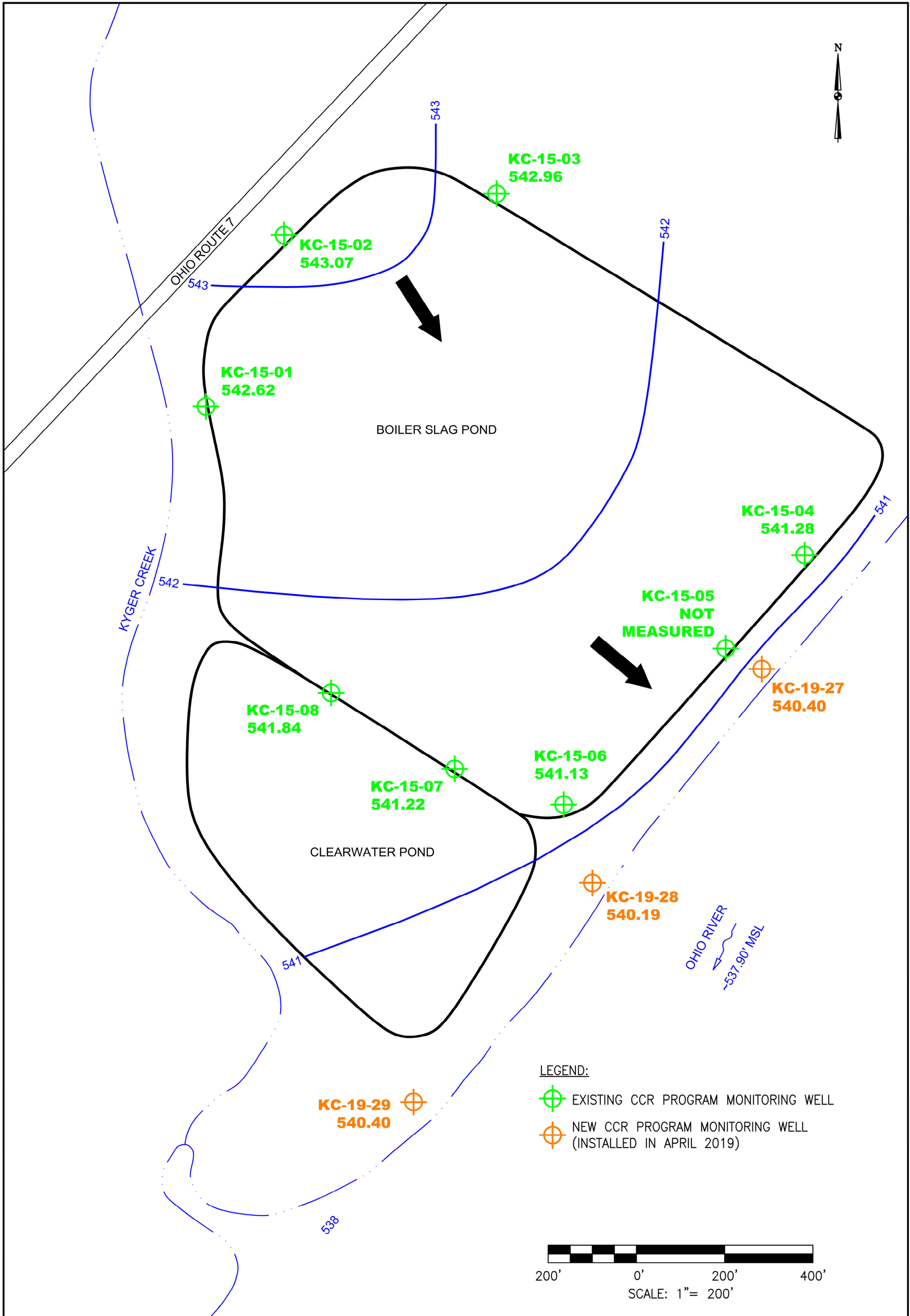
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DWG FILE	B-2_KYGER_CCR_2022 Annual GW Rpt_Landfill_GW Flow_OCT2022.dwg
DRAWING SCALE	AS SHOWN



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 CLASS III RESIDUAL WASTE LANDFILL
 GROUNDWATER ELEVATIONS AND FLOW MAP
 OCTOBER 2022

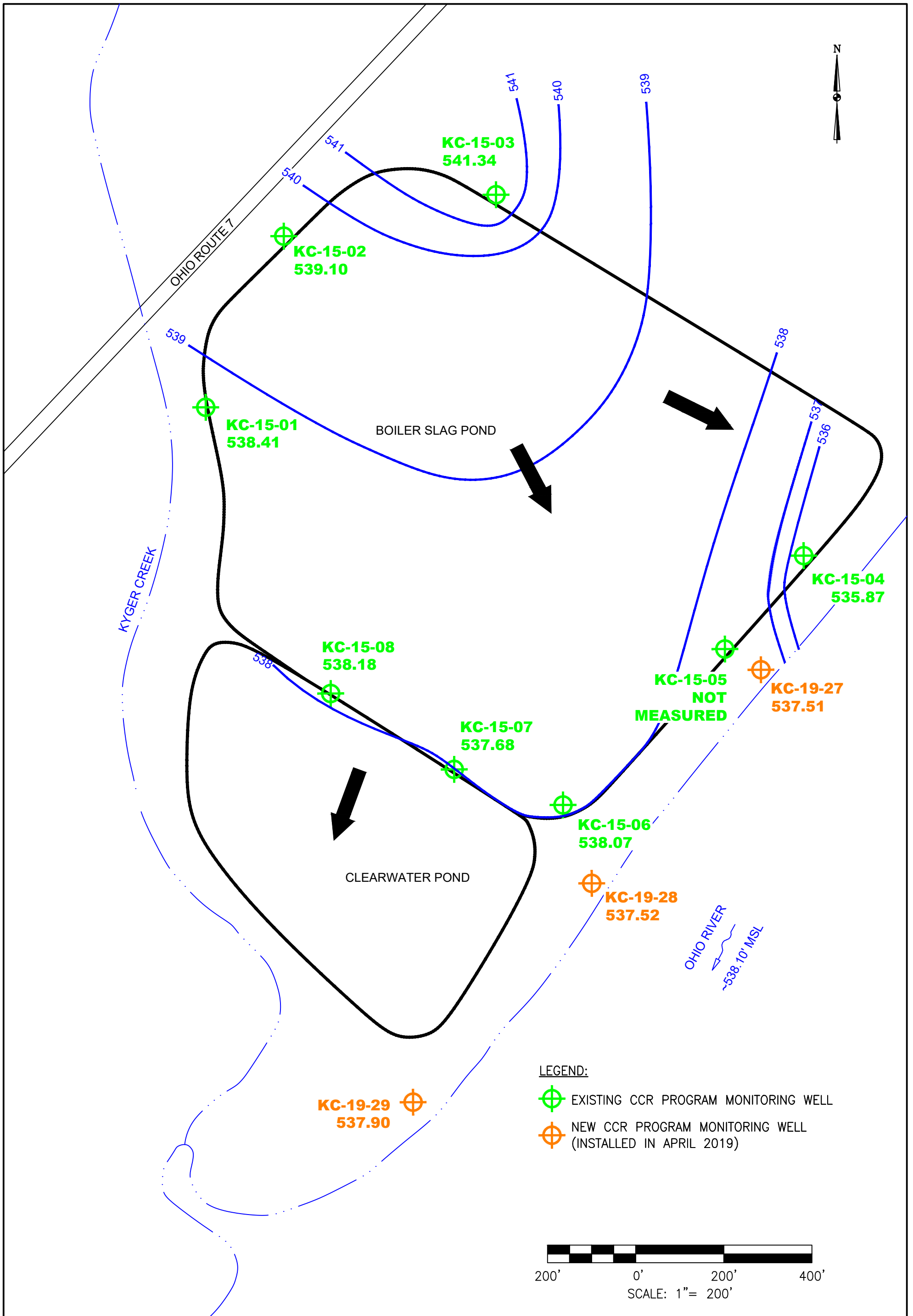
DRAWING NAME	FIGURE B-2	REV.	0
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DRAWING SCALE	1"=200'

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KYGER CREEK STATION CHESHIRE, GALLIA COUNTY, OHIO BOILER SLAG POND	
GROUNDWATER LEVELS AND FLOW DIRECTION MARCH 2022	
DRAWING NAME	FIGURE B-3
REV.	0



DRAWN BY	AB
DATE	
CHECKED BY	
JOB NO.	2022042-KYGER
DWG FILE	B-4_KYGER_CCR_2022 Annual GW Rpt_BSP_GW Flow_OCT2022.dwg
DRAWING SCALE	1"=200'

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OHIO VALLEY ELECTRIC COMPANY	
KYGER CREEK STATION CHESHIRE, GALLIA COUNTY, OHIO BOILER SLAG POND	
GROUNDWATER LEVELS AND FLOW DIRECTION OCTOBER 2022	
DRAWING NAME	FIGURE B-4
REV.	0



KYGER CREEK

RAILROAD TRACKS

DRAINAGE DITCH

NORTH FLY ASH POND

KC-15-13
541.05

KC-15-14
543.86

KC-15-15
543.57

KC-15-12
541.08

KC-15-11
543.97

KC-15-16
543.32

KC-15-10
543.68

SOUTH FLY ASH POND

KC-15-17
543.43

KC-15-09
543.48

KC-15-18
543.16

KC-15-22
543.30

OHIO ROUTE 7

KC-15-21
543.05


KC-15-19
543.03

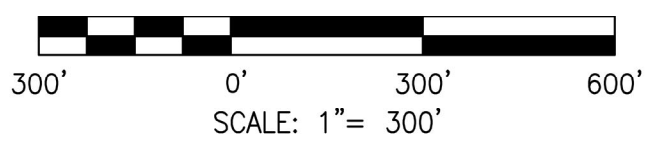
KC-15-20
542.90

POWER PLANT


OHIO RIVER
-537.90 MSL

LEGEND:

 EXISTING CCR PROGRAM MONITORING WELL

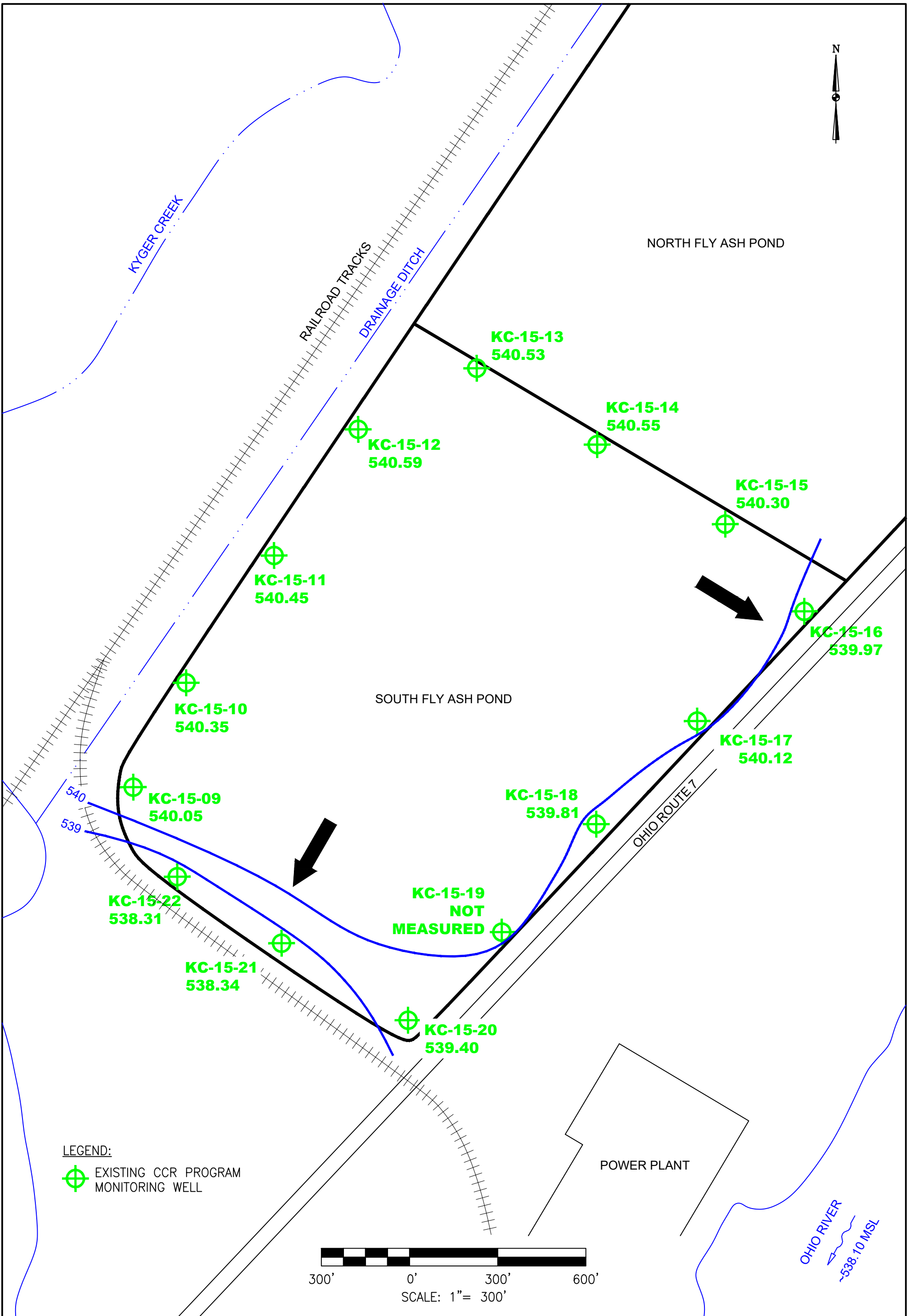


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DRAWING SCALE	1"=300'



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OHIO VALLEY ELECTRIC COMPANY	
KYGER CREEK STATION CHESHIRE, GALLIA COUNTY, OHIO SOUTH FLY ASH POND GROUNDWATER LEVELS AND FLOW DIRECTION MARCH 2022	
DRAWING NAME	FIGURE B-5
REV.	0



DRAWN BY	AB
DATE	
CHECKED BY	
JOB NO.	2022042-KYG
DWG FILE	B-6_KYGER_CCR_2022 Annual GW Rpt_SFAP_GW Flow_OCT2022.dwg
DRAWING SCALE	1"=300'

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OHIO VALLEY ELECTRIC COMPANY	
KYGER CREEK STATION CHESHIRE, GALLIA COUNTY, OHIO SOUTH FLY ASH POND GROUNDWATER LEVELS AND FLOW DIRECTION OCTOBER 2022	
DRAWING NAME	FIGURE B-6
REV.	0

APPENDIX C

APPENDIX III AND APPENDIX IV CONSTITUENTS

**APPENDIX III AND APPENDIX IV CONSTITUENTS
KYGER CREEK STATION
CHESHIRE, OHIO**

Appendix III Constituents
Boron, B
Calcium, Ca
Chloride, Cl
Fluoride, F
pH (units=SU)
Sulfate, SO ₄
Total Dissolved Solids (TDS)
Appendix IV Constituents
Antimony, Sb
Arsenic, As
Barium, Ba
Beryllium, Be
Cadmium, Cd
Chromium, Cr
Cobalt, Co
Fluoride, F
Lithium, Li
Lead, Pb
Mercury, Hg
Molybdenum, Mo
Radium 226 & 228 (combined)(units=pCi/L)
Selenium, Se
Thallium, Tl

APPENDIX D
ANALYTICAL RESULTS

BuSW-1
SUMMARY OF 2022 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Mar-22	Oct-22
Appendix III Constituents			
Boron, B	mg/L	0.39	0.34
Calcium, Ca	mg/L	19	16
Chloride, Cl	mg/L	2200	2200
Fluoride, F	mg/L	1.2	1.1
pH	s.u.	7.44	7.08
Sulfate, SO ₄	mg/L	66	65
Total Dissolved Solids (TDS)	mg/L	3500	1800

BuSW-2
SUMMARY OF 2022 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Mar-22	Oct-22
Appendix III Constituents			
Boron, B	mg/L	0.41	0.42
Calcium, Ca	mg/L	52	62
Chloride, Cl	mg/L	3800	3800
Fluoride, F	mg/L	1.6	5.0 U
pH	s.u.	7.06	7.51
Sulfate, SO ₄	mg/L	100 U	200 U
Total Dissolved Solids (TDS)	mg/L	7000	7900

BuSW-3
SUMMARY OF 2022 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Mar-22	Oct-22
Appendix III Constituents			
Boron, B	mg/L	0.41	0.19
Calcium, Ca	mg/L	870	470
Chloride, Cl	mg/L	19000	8800
Fluoride, F	mg/L	5.0 U	10 U
pH	s.u.	7.1	7.01
Sulfate, SO ₄	mg/L	45	400 U
Total Dissolved Solids (TDS)	mg/L	560	1400

BuSW-4
SUMMARY OF 2022 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Mar-22	Oct-22
Appendix III Constituents			
Boron, B	mg/L	0.37	0.35
Calcium, Ca	mg/L	900	950
Chloride, Cl	mg/L	19000	17000
Fluoride, F	mg/L	5.0 U	10 U
pH	s.u.	7.35	6.58
Sulfate, SO ₄	mg/L	53	400 U
Total Dissolved Solids (TDS)	mg/L	660	2000

BuSW-5
SUMMARY OF 2022 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Mar-22	Oct-22
Appendix III Constituents			
Boron, B	mg/L	0.4	NS
Calcium, Ca	mg/L	680	NS
Chloride, Cl	mg/L	16000	NS
Fluoride, F	mg/L	5.0 U	NS
pH	s.u.	7.23	NS
Sulfate, SO ₄	mg/L	200 U	NS
Total Dissolved Solids (TDS)	mg/L	950	NS

Notes:

NS: Well not sampled.

BuSW-8
SUMMARY OF 2022 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Mar-22	Oct-22
Appendix III Constituents			
Boron, B	mg/L	0.36	0.36
Calcium, Ca	mg/L	520	570
Chloride, Cl	mg/L	17000	14000
Fluoride, F	mg/L	5.0 U	10 U
pH	s.u.	7.35	7.48
Sulfate, SO ₄	mg/L	200 U	400 U
Total Dissolved Solids (TDS)	mg/L	19000	1800

BuSW-10
SUMMARY OF 2022 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Mar-22	Oct-22
Appendix III Constituents			
Boron, B	mg/L	0.4	0.37
Calcium, Ca	mg/L	49	44
Chloride, Cl	mg/L	3200	3100
Fluoride, F	mg/L	1.6	2.5 U
pH	s.u.	7.4	7.34
Sulfate, SO ₄	mg/L	100 U	100 U
Total Dissolved Solids (TDS)	mg/L	2800	1200

CCR-1BU
SUMMARY OF 2022 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Mar-22	Oct-22
Appendix III Constituents			
Boron, B	mg/L	0.32	0.3
Calcium, Ca	mg/L	820	870
Chloride, Cl	mg/L	15000	15000
Fluoride, F	mg/L	5.0 U	10 U
pH	s.u.	7.65	7.20
Sulfate, SO ₄	mg/L	200 U	400 U
Total Dissolved Solids (TDS)	mg/L	620	2000

CCR-2BU
SUMMARY OF 2022 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Mar-22	Oct-22
Appendix III Constituents			
Boron, B	mg/L	0.29	0.27
Calcium, Ca	mg/L	66	67
Chloride, Cl	mg/L	3700	3900
Fluoride, F	mg/L	1.6	2.5 U
pH	s.u.	6.85	7.06
Sulfate, SO ₄	mg/L	26	19
Total Dissolved Solids (TDS)	mg/L	11000	2000

IMW-1BU
SUMMARY OF 2022 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Mar-22	Oct-22
Appendix III Constituents			
Boron, B	mg/L	0.41	0.38
Calcium, Ca	mg/L	130	130
Chloride, Cl	mg/L	5900	5800
Fluoride, F	mg/L	2.5 U	2.5 U
pH	s.u.	6.89	7.18
Sulfate, SO ₄	mg/L	100 U	100 U
Total Dissolved Solids (TDS)	mg/L	1400	1000

IMW-2BU
SUMMARY OF 2022 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Mar-22	Oct-22
Appendix III Constituents			
Boron, B	mg/L	0.42	0.43
Calcium, Ca	mg/L	390	420
Chloride, Cl	mg/L	12000	8600
Fluoride, F	mg/L	5.0 U	5.0 U
pH	s.u.	7.55	7.26
Sulfate, SO ₄	mg/L	200 U	200 U
Total Dissolved Solids (TDS)	mg/L	1900	1500

MW-3D
SUMMARY OF 2022 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Mar-22	Oct-22
Appendix III Constituents			
Boron, B	mg/L	0.39	0.38
Calcium, Ca	mg/L	1000	1100
Chloride, Cl	mg/L	22000	23000
Fluoride, F	mg/L	5.0 U	10 U
pH	s.u.	7.25	7.29
Sulfate, SO4	mg/L	200 U	400 U
Total Dissolved Solids (TDS)	mg/L	20000	1900

MW-4D
SUMMARY OF 2022 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Mar-22	Oct-22
Appendix III Constituents			
Boron, B	mg/L	0.43	0.42
Calcium, Ca	mg/L	3.8	4
Chloride, Cl	mg/L	260	210
Fluoride, F	mg/L	1.3	1.2
pH	s.u.	6.64	7.03
Sulfate, SO ₄	mg/L	270	260
Total Dissolved Solids (TDS)	mg/L	1200	1100

KC-15-01
SUMMARY OF 2022 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Mar-22	Oct-22
Appendix III Constituents			
Boron, B	mg/L	0.35	NS
Calcium, Ca	mg/L	77	NS
Chloride, Cl	mg/L	16	NS
Fluoride, F	mg/L	0.057	NS
pH	s.u.	6.73	NS
Sulfate, SO4	mg/L	250	NS
Total Dissolved Solids (TDS)	mg/L	430	NS
Appendix IV Constituents			
Antimony, Sb	ug/L	1.0 U	NS
Arsenic, As	ug/L	1.1	NS
Barium, Ba	ug/L	44	NS
Beryllium, Be	ug/L	0.081	NS
Cadmium, Cd	ug/L	0.50 U	NS
Chromium, Cr	ug/L	1.2	NS
Cobalt, Co	ug/L	8.4	NS
Fluoride, F	mg/L	0.057	NS
Lead, Pb	ug/L	0.27	NS
Lithium, Li	mg/L	0.0058	NS
Mercury, Hg	ug/L	0.00020 U	NS
Molybdenum, Mo	ug/L	0.12	NS
Radium 226 & 228 (combined)	pCi/L	0.634	NS
Selenium, Se	ug/L	0.67	NS
Thallium, Tl	ug/L	0.023	NS

Notes:

NS: Well not sampled.

KC-15-02
SUMMARY OF 2022 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Mar-22	Oct-22
Appendix III Constituents			
Boron, B	mg/L	0.036	0.13
Calcium, Ca	mg/L	54	120
Chloride, Cl	mg/L	15	27
Fluoride, F	mg/L	0.045	0.25 U
pH	s.u.	6.76	7.19
Sulfate, SO4	mg/L	74	170
Total Dissolved Solids (TDS)	mg/L	260	540
Appendix IV Constituents			
Antimony, Sb	ug/L	1.0 U	1.0 U
Arsenic, As	ug/L	1.3	2.4
Barium, Ba	ug/L	33	92
Beryllium, Be	ug/L	0.70 U	0.061
Cadmium, Cd	ug/L	0.50 U	0.13
Chromium, Cr	ug/L	1.3	30
Cobalt, Co	ug/L	0.45	1.7
Fluoride, F	mg/L	0.045	0.25 U
Lead, Pb	ug/L	0.35	0.84
Lithium, Li	mg/L	0.003	0.0074
Mercury, Hg	ug/L	0.00020 U	0.0002 U
Molybdenum, Mo	ug/L	1	10
Radium 226 & 228 (combined)	pCi/L	5 U	5 U
Selenium, Se	ug/L	1.0 U	0.64
Thallium, Tl	ug/L	0.032	0.034

KC-15-03
SUMMARY OF 2022 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Mar-22	Oct-22
Appendix III Constituents			
Boron, B	mg/L	0.41	NS
Calcium, Ca	mg/L	110	NS
Chloride, Cl	mg/L	28	NS
Fluoride, F	mg/L	0.063	NS
pH	s.u.	6.67	NS
Sulfate, SO4	mg/L	200	NS
Total Dissolved Solids (TDS)	mg/L	370	NS
Appendix IV Constituents			
Antimony, Sb	ug/L	1.0 U	NS
Arsenic, As	ug/L	2	NS
Barium, Ba	ug/L	54	NS
Beryllium, Be	ug/L	0.052	NS
Cadmium, Cd	ug/L	0.075	NS
Chromium, Cr	ug/L	1.7	NS
Cobalt, Co	ug/L	5.9	NS
Fluoride, F	mg/L	0.063	NS
Lead, Pb	ug/L	0.34	NS
Lithium, Li	mg/L	0.018	NS
Mercury, Hg	ug/L	0.00020 U	NS
Molybdenum, Mo	ug/L	1.3	NS
Radium 226 & 228 (combined)	pCi/L	5 U	NS
Selenium, Se	ug/L	1.0 U	NS
Thallium, Tl	ug/L	0.052	NS

Notes:

NS: Well not sampled.

KC-15-04
SUMMARY OF 2022 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Mar-22	Jun-22	Oct-22
Appendix III Constituents				
Boron, B	mg/L	0.55	0.53	0.46
Calcium, Ca	mg/L	90	NA	93
Chloride, Cl	mg/L	27	NA	23
Fluoride, F	mg/L	0.1	NA	0.25 U
pH	s.u.	6.65	NA	6.5
Sulfate, SO4	mg/L	280	NA	290
Total Dissolved Solids (TDS)	mg/L	210	NA	570
Appendix IV Constituents				
Antimony, Sb	ug/L	1.0 U	NA	1
Arsenic, As	ug/L	1.8	NA	3.9
Barium, Ba	ug/L	46	NA	57
Beryllium, Be	ug/L	0.70 U	NA	0.12
Cadmium, Cd	ug/L	0.50 U	NA	0.098
Chromium, Cr	ug/L	0.93	NA	4
Cobalt, Co	ug/L	8.8	NA	9
Fluoride, F	mg/L	0.1	NA	0.25 U
Lead, Pb	ug/L	1.0 U	NA	1.2
Lithium, Li	mg/L	0.01	NA	13
Mercury, Hg	ug/L	0.00020 U	NA	0.00005
Molybdenum, Mo	ug/L	0.75	NA	0.9
Radium 226 & 228 (combined)	pCi/L	0.686	NA	2.14
Selenium, Se	ug/L	1.0 U	NA	1.0 U
Thallium, Tl	ug/L	0.20 U	NA	0.055

Notes:

NA: Sampling not required for this parameter.

KC-15-05
SUMMARY OF 2022 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Mar-22	Oct-22
Appendix III Constituents			
Boron, B	mg/L	NS	NS
Calcium, Ca	mg/L	NS	NS
Chloride, Cl	mg/L	NS	NS
Fluoride, F	mg/L	NS	NS
pH	s.u.	NS	NS
Sulfate, SO4	mg/L	NS	NS
Total Dissolved Solids (TDS)	mg/L	NS	NS
Appendix IV Constituents			
Antimony, Sb	ug/L	NS	NS
Arsenic, As	ug/L	NS	NS
Barium, Ba	ug/L	NS	NS
Beryllium, Be	ug/L	NS	NS
Cadmium, Cd	ug/L	NS	NS
Chromium, Cr	ug/L	NS	NS
Cobalt, Co	ug/L	NS	NS
Fluoride, F	mg/L	NS	NS
Lead, Pb	ug/L	NS	NS
Lithium, Li	mg/L	NS	NS
Mercury, Hg	ug/L	NS	NS
Molybdenum, Mo	ug/L	NS	NS
Radium 226 & 228 (combined)	pCi/L	NS	NS
Selenium, Se	ug/L	NS	NS
Thallium, Tl	ug/L	NS	NS

Notes:

NS: Well not sampled.

KC-15-06
SUMMARY OF 2022 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Mar-22	Oct-22
Appendix III Constituents			
Boron, B	mg/L	0.45	NS
Calcium, Ca	mg/L	80	NS
Chloride, Cl	mg/L	34	NS
Fluoride, F	mg/L	0.11	NS
pH	s.u.	7.03	NS
Sulfate, SO4	mg/L	160	NS
Total Dissolved Solids (TDS)	mg/L	230	NS
Appendix IV Constituents			
Antimony, Sb	ug/L	1.0 U	NS
Arsenic, As	ug/L	2.5	NS
Barium, Ba	ug/L	110	NS
Beryllium, Be	ug/L	0.70 U	NS
Cadmium, Cd	ug/L	0.12	NS
Chromium, Cr	ug/L	1.2	NS
Cobalt, Co	ug/L	1.6	NS
Fluoride, F	mg/L	0.11	NS
Lead, Pb	ug/L	1.0 U	NS
Lithium, Li	mg/L	0.0045	NS
Mercury, Hg	ug/L	0.00020 U	NS
Molybdenum, Mo	ug/L	0.21	NS
Radium 226 & 228 (combined)	pCi/L	5 U	NS
Selenium, Se	ug/L	1.0 U	NS
Thallium, Tl	ug/L	0.20 U	NS

Notes:

NS: Well not sampled.

KC-15-07
SUMMARY OF 2022 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Mar-22	Jun-22	Oct-22	Dec-22
Appendix III Constituents					
Boron, B	mg/L	0.074	NA	0.086	NA
Calcium, Ca	mg/L	49	NA	68	NA
Chloride, Cl	mg/L	21	NA	29	NA
Fluoride, F	mg/L	0.089	NA	0.10 U	NA
pH	s.u.	6.84	NA	6.88	NA
Sulfate, SO4	mg/L	20	NA	14	NA
Total Dissolved Solids (TDS)	mg/L	290	NA	320	NA
Appendix IV Constituents					
Antimony, Sb	ug/L	1.0 U	NA	1.0 U	NA
Arsenic, As	ug/L	120	140	150	130
Barium, Ba	ug/L	390	NA	590	NA
Beryllium, Be	ug/L	0.70 U	NA	0.70 U	NA
Cadmium, Cd	ug/L	0.50 U	NA	0.50 U	NA
Chromium, Cr	ug/L	1.1	NA	1	NA
Cobalt, Co	ug/L	0.24	NA	0.22	NA
Fluoride, F	mg/L	0.089	NA	0.10 U	NA
Lead, Pb	ug/L	1.0 U	NA	1.0 U	NA
Lithium, Li	mg/L	0.0029	NA	0.0035	NA
Mercury, Hg	ug/L	0.00020 U	NA	0.0002 U	NA
Molybdenum, Mo	ug/L	0.89	NA	0.79	NA
Radium 226 & 228 (combined)	pCi/L	1.76	NA	1.72	NA
Selenium, Se	ug/L	1.0 U	NA	1.0 U	NA
Thallium, Tl	ug/L	0.20 U	NA	0.20 U	NA

Notes:

NA: Sampling not required for this parameter.

KC-15-08
SUMMARY OF 2022 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Mar-22	Jun-22	Oct-22	Dec-22
Appendix III Constituents					
Boron, B	mg/L	0.57	0.67	0.57	0.6
Calcium, Ca	mg/L	160	190	170	160
Chloride, Cl	mg/L	37	NA	40	NA
Fluoride, F	mg/L	0.14	NA	0.25 U	NA
pH	s.u.	7.36	NA	7.39	NA
Sulfate, SO4	mg/L	430	530	360	120
Total Dissolved Solids (TDS)	mg/L	820	1200	980	830
Appendix IV Constituents					
Antimony, Sb	ug/L	1.0 U	NA	1.0 U	NA
Arsenic, As	ug/L	7.9	NA	6	NA
Barium, Ba	ug/L	42	NA	47	NA
Beryllium, Be	ug/L	0.70 U	NA	0.70 U	NA
Cadmium, Cd	ug/L	0.50 U	NA	0.50 U	NA
Chromium, Cr	ug/L	0.9	NA	1	NA
Cobalt, Co	ug/L	5.1	NA	5	NA
Fluoride, F	mg/L	0.14	NA	0.25 U	NA
Lead, Pb	ug/L	1.0 U	NA	1.0 U	NA
Lithium, Li	mg/L	0.059	NA	0.089	NA
Mercury, Hg	ug/L	0.00020 U	NA	0.0002 U	NA
Molybdenum, Mo	ug/L	0.36	NA	0.47	NA
Radium 226 & 228 (combined)	pCi/L	5 U	NA	5 U	NA
Selenium, Se	ug/L	0.82	NA	1.0 U	NA
Thallium, Tl	ug/L	0.20 U	NA	0.20 U	NA

Notes:

NA: Sampling not required for this parameter.

KC-19-27
SUMMARY OF 2022 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Mar-22	Oct-22
Appendix IV Constituents			
Arsenic, As	ug/L	4.4	8.2

KC-19-28
SUMMARY OF 2022 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Mar-22	Oct-22
Appendix IV Constituents			
Arsenic, As	ug/L	0.68 J	0.79 J

KC-19-29
SUMMARY OF 2022 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Mar-22	Oct-22
Appendix IV Constituents			
Arsenic, As	ug/L	1.3	0.63 J

KC-15-09
SUMMARY OF 2022 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Mar-22	Oct-22
Appendix III Constituents			
Boron, B	mg/L	0.022	0.02
Calcium, Ca	mg/L	77	73
Chloride, Cl	mg/L	12	12
Fluoride, F	mg/L	0.21	0.13
pH	s.u.	8.1	7.09
Sulfate, SO4	mg/L	55	53
Total Dissolved Solids (TDS)	mg/L	110	330
Appendix IV Constituents			
Antimony, Sb	ug/L	1.0 U	1.0 U
Arsenic, As	ug/L	1.4	1
Barium, Ba	ug/L	27	26
Beryllium, Be	ug/L	0.70 U	0.70 U
Cadmium, Cd	ug/L	0.50 U	0.50 U
Chromium, Cr	ug/L	0.66	0.82
Cobalt, Co	ug/L	1.9	1.9
Fluoride, F	mg/L	0.21	0.13
Lead, Pb	ug/L	1.0 U	1.0 U
Lithium, Li	mg/L	0.0054	0.0056
Mercury, Hg	ug/L	0.00020 U	0.0002 U
Molybdenum, Mo	ug/L	0.33	0.18
Radium 226 & 228 (combined)	pCi/L	5 U	5 U
Selenium, Se	ug/L	0.6	1.0 U
Thallium, Tl	ug/L	0.20 U	0.2 U

KC-15-10
SUMMARY OF 2022 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Mar-22	Oct-22
Appendix III Constituents			
Boron, B	mg/L	0.026	0.019
Calcium, Ca	mg/L	62	61
Chloride, Cl	mg/L	9.1	9.5
Fluoride, F	mg/L	0.23	0.14
pH	s.u.	6.75	7.08
Sulfate, SO4	mg/L	65	63
Total Dissolved Solids (TDS)	mg/L	280	260
Appendix IV Constituents			
Antimony, Sb	ug/L	1.0 U	1.0 U
Arsenic, As	ug/L	2.2	2.2
Barium, Ba	ug/L	34	37
Beryllium, Be	ug/L	0.70 U	0.70 U
Cadmium, Cd	ug/L	0.50 U	0.50 U
Chromium, Cr	ug/L	3.0 U	0.9
Cobalt, Co	ug/L	1	1.1
Fluoride, F	mg/L	0.23	0.14
Lead, Pb	ug/L	1.0 U	1.0 U
Lithium, Li	mg/L	0.0065	0.0071
Mercury, Hg	ug/L	0.00020 U	0.0002 U
Molybdenum, Mo	ug/L	1.0 U	1.0 U
Radium 226 & 228 (combined)	pCi/L	5 U	5 U
Selenium, Se	ug/L	0.66	1.0 U
Thallium, Tl	ug/L	0.20 U	0.2 U

KC-15-11
SUMMARY OF 2022 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Mar-22	Oct-22
Appendix III Constituents			
Boron, B	mg/L	0.039	0.03
Calcium, Ca	mg/L	73	64
Chloride, Cl	mg/L	11	11
Fluoride, F	mg/L	0.23	0.11
pH	s.u.	7.07	7.16
Sulfate, SO4	mg/L	78	79
Total Dissolved Solids (TDS)	mg/L	380	290
Appendix IV Constituents			
Antimony, Sb	ug/L	1.0 U	1.0 U
Arsenic, As	ug/L	0.81	0.5
Barium, Ba	ug/L	27	30
Beryllium, Be	ug/L	0.70 U	0.70 U
Cadmium, Cd	ug/L	0.074	0.087
Chromium, Cr	ug/L	3.0 U	0.81
Cobalt, Co	ug/L	1	1.1
Fluoride, F	mg/L	0.23	0.11
Lead, Pb	ug/L	1.0 U	1.0 U
Lithium, Li	mg/L	0.0055	0.0063
Mercury, Hg	ug/L	0.00020 U	0.0002 U
Molybdenum, Mo	ug/L	1.0 U	1.0 U
Radium 226 & 228 (combined)	pCi/L	5 U	0.767
Selenium, Se	ug/L	0.68	1.0 U
Thallium, Tl	ug/L	0.20 U	0.2 U

KC-15-12
SUMMARY OF 2022 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Mar-22	Oct-22
Appendix III Constituents			
Boron, B	mg/L	0.37	0.086
Calcium, Ca	mg/L	90	100
Chloride, Cl	mg/L	19	13
Fluoride, F	mg/L	0.12	0.066
pH	s.u.	6.72	7.25
Sulfate, SO4	mg/L	86	69
Total Dissolved Solids (TDS)	mg/L	890	340
Appendix IV Constituents			
Antimony, Sb	ug/L	1.0 U	1.0 U
Arsenic, As	ug/L	0.46	0.59
Barium, Ba	ug/L	61	81
Beryllium, Be	ug/L	0.70 U	0.70 U
Cadmium, Cd	ug/L	0.076	0.50 U
Chromium, Cr	ug/L	0.57	0.84
Cobalt, Co	ug/L	0.31	0.61
Fluoride, F	mg/L	0.12	0.066
Lead, Pb	ug/L	1.0 U	1.0 U
Lithium, Li	mg/L	0.0049	0.0046
Mercury, Hg	ug/L	0.00020 U	0.0002 U
Molybdenum, Mo	ug/L	0.11	0.47
Radium 226 & 228 (combined)	pCi/L	5 U	5 U
Selenium, Se	ug/L	0.68	1.0 U
Thallium, Tl	ug/L	0.20 U	0.2 U

KC-15-13
SUMMARY OF 2022 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Mar-22	Oct-22
Appendix III Constituents			
Boron, B	mg/L	4	5.2
Calcium, Ca	mg/L	82	100
Chloride, Cl	mg/L	50	65
Fluoride, F	mg/L	0.13	0.25 U
pH	s.u.	6.18	7.31
Sulfate, SO4	mg/L	300	340
Total Dissolved Solids (TDS)	mg/L	450	420
Appendix IV Constituents			
Antimony, Sb	ug/L	1.0 U	1.0 U
Arsenic, As	ug/L	1.7	1.8
Barium, Ba	ug/L	54	62
Beryllium, Be	ug/L	0.70 U	0.70 U
Cadmium, Cd	ug/L	0.50 U	0.50 U
Chromium, Cr	ug/L	0.68	1.1
Cobalt, Co	ug/L	9.8	14
Fluoride, F	mg/L	0.13	0.25 U
Lead, Pb	ug/L	1.0 U	1.0 U
Lithium, Li	mg/L	0.012	0.012
Mercury, Hg	ug/L	0.00020 U	0.0002 U
Molybdenum, Mo	ug/L	1.0 U	0.36
Radium 226 & 228 (combined)	pCi/L	5 U	5 U
Selenium, Se	ug/L	0.84	1.0 U
Thallium, Tl	ug/L	0.20 U	0.2 U

KC-15-14
SUMMARY OF 2022 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Mar-22	Oct-22
Appendix III Constituents			
Boron, B	mg/L	12	11
Calcium, Ca	mg/L	73	75
Chloride, Cl	mg/L	57	58
Fluoride, F	mg/L	0.17	0.08
pH	s.u.	7.61	7.29
Sulfate, SO4	mg/L	210	200
Total Dissolved Solids (TDS)	mg/L	530	460
Appendix IV Constituents			
Antimony, Sb	ug/L	1.0 U	1.0 U
Arsenic, As	ug/L	1.4	2.2
Barium, Ba	ug/L	34	33
Beryllium, Be	ug/L	0.70 U	0.70 U
Cadmium, Cd	ug/L	0.50 U	0.50 U
Chromium, Cr	ug/L	0.62	0.81
Cobalt, Co	ug/L	5	2.9
Fluoride, F	mg/L	0.17	0.08
Lead, Pb	ug/L	1.0 U	1.0 U
Lithium, Li	mg/L	0.018	0.018
Mercury, Hg	ug/L	0.00020 U	0.0002 U
Molybdenum, Mo	ug/L	1.0 U	0.37
Radium 226 & 228 (combined)	pCi/L	5 U	5 U
Selenium, Se	ug/L	0.75	1.0 U
Thallium, Tl	ug/L	0.20 U	0.025

KC-15-15
SUMMARY OF 2022 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Mar-22	Oct-22
Appendix III Constituents			
Boron, B	mg/L	15	13
Calcium, Ca	mg/L	78	68
Chloride, Cl	mg/L	71	71
Fluoride, F	mg/L	0.099	0.10 U
pH	s.u.	7.33	6.97
Sulfate, SO4	mg/L	220	190
Total Dissolved Solids (TDS)	mg/L	540	510
Appendix IV Constituents			
Antimony, Sb	ug/L	1.0 U	1.0 U
Arsenic, As	ug/L	0.86	0.41
Barium, Ba	ug/L	20	18
Beryllium, Be	ug/L	0.04	0.70 U
Cadmium, Cd	ug/L	0.75	0.66
Chromium, Cr	ug/L	1.5	1.5
Cobalt, Co	ug/L	8.9	12
Fluoride, F	mg/L	0.099	0.10 U
Lead, Pb	ug/L	0.46	1.0 U
Lithium, Li	mg/L	0.022	0.022
Mercury, Hg	ug/L	0.00020 U	0.00020 U
Molybdenum, Mo	ug/L	1.0 U	1.0 U
Radium 226 & 228 (combined)	pCi/L	0.71	5 U
Selenium, Se	ug/L	0.92	1.0 U
Thallium, Tl	ug/L	0.023	0.019

KC-15-16
SUMMARY OF 2022 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Mar-22	Oct-22
Appendix III Constituents			
Boron, B	mg/L	11	12
Calcium, Ca	mg/L	250	250
Chloride, Cl	mg/L	89	100
Fluoride, F	mg/L	0.25 U	0.25 U
pH	s.u.	7.59	6.89
Sulfate, SO4	mg/L	750	690
Total Dissolved Solids (TDS)	mg/L	1200	1300
Appendix IV Constituents			
Antimony, Sb	ug/L	1.0 U	1.0 U
Arsenic, As	ug/L	1.7	1.4
Barium, Ba	ug/L	64	37
Beryllium, Be	ug/L	0.70 U	0.03
Cadmium, Cd	ug/L	0.31	0.31
Chromium, Cr	ug/L	1	1.7
Cobalt, Co	ug/L	6.8	6.6
Fluoride, F	mg/L	0.25 U	0.25 U
Lead, Pb	ug/L	0.19	0.23
Lithium, Li	mg/L	0.011	0.014
Mercury, Hg	ug/L	0.00020 U	0.00020 U
Molybdenum, Mo	ug/L	0.41	0.43
Radium 226 & 228 (combined)	pCi/L	5 U	1.29
Selenium, Se	ug/L	0.93	1.0 U
Thallium, Tl	ug/L	0.037	0.027

KC-15-17
SUMMARY OF 2022 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Mar-22	Oct-22
Appendix III Constituents			
Boron, B	mg/L	19	13
Calcium, Ca	mg/L	370	310
Chloride, Cl	mg/L	160	120
Fluoride, F	mg/L	0.25 U	0.25 U
pH	s.u.	7.21	7.18
Sulfate, SO4	mg/L	1000	760
Total Dissolved Solids (TDS)	mg/L	1700	1600
Appendix IV Constituents			
Antimony, Sb	ug/L	1.0 U	1.0 U
Arsenic, As	ug/L	1.9	4.1
Barium, Ba	ug/L	34	47
Beryllium, Be	ug/L	0.70 U	0.041
Cadmium, Cd	ug/L	0.48	0.50 U
Chromium, Cr	ug/L	0.81	16
Cobalt, Co	ug/L	28	3.8
Fluoride, F	mg/L	0.25 U	0.25 U
Lead, Pb	ug/L	1.0 U	0.39
Lithium, Li	mg/L	0.024	0.09
Mercury, Hg	ug/L	0.00020 U	0.00020 U
Molybdenum, Mo	ug/L	0.87	20
Radium 226 & 228 (combined)	pCi/L	5 U	5 U
Selenium, Se	ug/L	1.0 U	0.8
Thallium, Tl	ug/L	0.019	0.02

KC-15-18
SUMMARY OF 2022 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Mar-22	Jun-22	Oct-22	Dec-22
Appendix III Constituents					
Boron, B	mg/L	15	NA	9.9	NA
Calcium, Ca	mg/L	170	170	140	120
Chloride, Cl	mg/L	100	100	72	97
Fluoride, F	mg/L	0.25 U	NA	0.25 U	NA
pH	s.u.	7.44	NA	7.17	NA
Sulfate, SO4	mg/L	580	580	410	NA
Total Dissolved Solids (TDS)	mg/L	930	1100	840	NA
Appendix IV Constituents					
Antimony, Sb	ug/L	1.0 U	NA	1.0 U	NA
Arsenic, As	ug/L	2.5	NA	2.8	NA
Barium, Ba	ug/L	22	NA	36	NA
Beryllium, Be	ug/L	0.70 U	NA	0.70 U	NA
Cadmium, Cd	ug/L	0.26	NA	0.11	NA
Chromium, Cr	ug/L	0.78	NA	63	NA
Cobalt, Co	ug/L	11	NA	2.2	NA
Fluoride, F	mg/L	0.25 U	NA	0.25 U	NA
Lead, Pb	ug/L	0.2	NA	0.32	NA
Lithium, Li	mg/L	0.033	NA	0.12	NA
Mercury, Hg	ug/L	0.00020 U	NA	0.00020 U	NA
Molybdenum, Mo	ug/L	0.74	NA	34	NA
Radium 226 & 228 (combined)	pCi/L	5 U	NA	5 U	NA
Selenium, Se	ug/L	1.0 U	NA	0.9	NA
Thallium, Tl	ug/L	0.031	NA	0.071	NA

Notes:

NA: Sampling not required for this parameter.

KC-15-19
SUMMARY OF 2022 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Mar-22	Jun-22	Oct-22
Appendix III Constituents				
Boron, B	mg/L	16	NS	NS
Calcium, Ca	mg/L	170	NS	NS
Chloride, Cl	mg/L	48	NA	NS
Fluoride, F	mg/L	0.13	NA	NS
pH	s.u.	7.17	NA	NS
Sulfate, SO4	mg/L	570	NS	NS
Total Dissolved Solids (TDS)	mg/L	930	NS	NS
Appendix IV Constituents				
Antimony, Sb	ug/L	1.0 U	NA	NS
Arsenic, As	ug/L	0.3	NA	NS
Barium, Ba	ug/L	16	NA	NS
Beryllium, Be	ug/L	0.70 U	NA	NS
Cadmium, Cd	ug/L	0.48	NA	NS
Chromium, Cr	ug/L	0.59	NA	NS
Cobalt, Co	ug/L	11	NA	NS
Fluoride, F	mg/L	0.13	NA	NS
Lead, Pb	ug/L	1.0 U	NA	NS
Lithium, Li	mg/L	0.017	NA	NS
Mercury, Hg	ug/L	0.00020 U	NA	NS
Molybdenum, Mo	ug/L	0.2	NA	NS
Radium 226 & 228 (combined)	pCi/L	5 U	NA	NS
Selenium, Se	ug/L	1.0 U	NA	NS
Thallium, Tl	ug/L	0.035	NA	NS

Notes:

NA: Sampling not required for this parameter.

NS: Well not sampled.

KC-15-19a
SUMMARY OF 2022 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Oct-22
Appendix III Constituents		
Boron, B	mg/L	15
Calcium, Ca	mg/L	170
Chloride, Cl	mg/L	50
Fluoride, F	mg/L	0.25 U
pH	s.u.	7.07
Sulfate, SO4	mg/L	500
Total Dissolved Solids (TDS)	mg/L	880
Appendix IV Constituents		
Antimony, Sb	ug/L	1.0 U
Arsenic, As	ug/L	1.7
Barium, Ba	ug/L	54
Beryllium, Be	ug/L	0.11
Cadmium, Cd	ug/L	0.31
Chromium, Cr	ug/L	3.4
Cobalt, Co	ug/L	25
Fluoride, F	mg/L	0.25 U
Lead, Pb	ug/L	3.3
Lithium, Li	mg/L	0.017
Mercury, Hg	ug/L	0.00020 U
Molybdenum, Mo	ug/L	0.63
Radium 226 & 228 (combined)	pCi/L	5 U
Selenium, Se	ug/L	1.0 U
Thallium, Tl	ug/L	0.086

Notes:

Results for well KC-15-19a are provided; the facility is evaluating whether the sampling results are the result of an error in accordance with 40 C.F.R. § 257.95(g)(3)(ii).

KC-15-20
SUMMARY OF 2022 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Mar-22	Jun-22	Oct-22	Dec-22
Appendix III Constituents					
Boron, B	mg/L	12	NA	8.9	NA
Calcium, Ca	mg/L	180	180	190	180
Chloride, Cl	mg/L	45	NA	37	NA
Fluoride, F	mg/L	0.25 U	NA	0.25 U	NA
pH	s.u.	5.37	NA	7.52	NA
Sulfate, SO4	mg/L	490	NA	380	NA
Total Dissolved Solids (TDS)	mg/L	110	NA	790	NA
Appendix IV Constituents					
Antimony, Sb	ug/L	1.0 U	NA	1.0 U	NA
Arsenic, As	ug/L	1.6	NA	5	NA
Barium, Ba	ug/L	25	NA	76	NA
Beryllium, Be	ug/L	0.70 U	NA	0.28	NA
Cadmium, Cd	ug/L	0.093	NA	0.78	NA
Chromium, Cr	ug/L	0.88	NA	18	NA
Cobalt, Co	ug/L	3.6	NA	6.5	NA
Fluoride, F	mg/L	0.25 U	NA	0.25 U	NA
Lead, Pb	ug/L	1.0 U	NA	4.6	NA
Lithium, Li	mg/L	0.012	NA	0.023	NA
Mercury, Hg	ug/L	0.00020 U	NA	0.00020 U	NA
Molybdenum, Mo	ug/L	0.8	NA	2.8	NA
Radium 226 & 228 (combined)	pCi/L	1.37	NA	5 U	NA
Selenium, Se	ug/L	1.0 U	NA	1.0 U	NA
Thallium, Tl	ug/L	0.021	NA	0.16	NA

Notes:

NA: Sampling not required for this parameter.

KC-15-21
SUMMARY OF 2022 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Mar-22	Jun-22	Oct-22	Dec-22
Appendix III Constituents					
Boron, B	mg/L	4.7	NA	4.9	NA
Calcium, Ca	mg/L	200	160	150	220
Chloride, Cl	mg/L	26	NA	32	NA
Fluoride, F	mg/L	0.24	NA	0.24	NA
pH	s.u.	7.25	NA	6.95	NA
Sulfate, SO4	mg/L	410	NA	300	NA
Total Dissolved Solids (TDS)	mg/L	120	NA	710	NA
Appendix IV Constituents					
Antimony, Sb	ug/L	1.0 U	NA	1.0 U	NA
Arsenic, As	ug/L	1.1	NA	1.3	NA
Barium, Ba	ug/L	19	NA	19	NA
Beryllium, Be	ug/L	0.70 U	NA	0.70 U	NA
Cadmium, Cd	ug/L	0.18	NA	0.11	NA
Chromium, Cr	ug/L	1.8	NA	1	NA
Cobalt, Co	ug/L	5.5	NA	5.5	NA
Fluoride, F	mg/L	0.24	NA	0.24	NA
Lead, Pb	ug/L	0.28	NA	1 U	NA
Lithium, Li	mg/L	0.0055	NA	6.2	NA
Mercury, Hg	ug/L	0.00020 U	NA	0.00020 U	NA
Molybdenum, Mo	ug/L	0.75	NA	0.72	NA
Radium 226 & 228 (combined)	pCi/L	1.18	NA	5 U	NA
Selenium, Se	ug/L	1.0 U	NA	1.0 U	NA
Thallium, Tl	ug/L	0.035	NA	0.021	NA

Notes:

NA: Sampling not required for this parameter.

KC-15-22
SUMMARY OF 2022 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Mar-22	Jun-22	Oct-22	Dec-22
Appendix III Constituents					
Boron, B	mg/L	0.58	NA	0.53	NA
Calcium, Ca	mg/L	120	110	120	110
Chloride, Cl	mg/L	17	NA	15	NA
Fluoride, F	mg/L	0.13	NA	0.16	NA
pH	s.u.	6.83	NA	7.49	NA
Sulfate, SO4	mg/L	120	NA	110	NA
Total Dissolved Solids (TDS)	mg/L	1200	480	460	NA
Appendix IV Constituents					
Antimony, Sb	ug/L	1.0 U	NA	1.0 U	NA
Arsenic, As	ug/L	3.5	NA	3.6	NA
Barium, Ba	ug/L	79	NA	72	NA
Beryllium, Be	ug/L	0.70 U	NA	0.70 U	NA
Cadmium, Cd	ug/L	0.50 U	NA	0.5 U	NA
Chromium, Cr	ug/L	3.0 U	NA	0.79	NA
Cobalt, Co	ug/L	0.23	NA	0.2	NA
Fluoride, F	mg/L	0.13	NA	0.16	NA
Lead, Pb	ug/L	1.0 U	NA	1 U	NA
Lithium, Li	mg/L	0.006	NA	5.6	NA
Mercury, Hg	ug/L	0.00020 U	NA	0.00020 U	NA
Molybdenum, Mo	ug/L	1.0 U	NA	0.26	NA
Radium 226 & 228 (combined)	pCi/L	0.913	NA	1.42	NA
Selenium, Se	ug/L	0.69	NA	1.0 U	NA
Thallium, Tl	ug/L	0.20 U	NA	0.019	NA

Notes:

NA: Sampling not required for this parameter.