OHIO VALLEY ELECTRIC CORPORATION
3932 U. S. Route 23
P. O. Box 468
Piketon, Ohio 45661
740-289-7200

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

February 23, 2022

Delivered Electronically

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

Dear Ms. Stevenson:

Re: Ohio Valley Electric Corporation
2021 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 fifth 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 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 publically 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) 897-7768.

Sincerely,

Tim Fulk
Engineer II

TLF:klr

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

January 31, 2022

File: 175530034, 100

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

Reference: 2021 Annual Groundwater Monitoring and Corrective Action Report
EPA Final Coal Combustion Residuals (CCR) Rule
Kyger Creek Generating Station
Cheshire, Ohio

Dear Mr. Fulk,

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

Reference: 2021 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

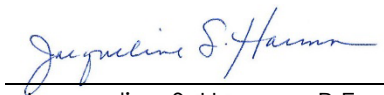
5. Other information required to be included in the annual report as specified in §§257.90 through 257.98.

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 2021 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 (2022), 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.
Principal
Phone: (513) 842-8200 ext 8220
Jacqueline.Harmon@stantec.com

Attachment: AGES (2022). Coal Combustion Residuals Regulation, 2021 Groundwater Monitoring and Corrective Action Report, Ohio Valley Electric Corporation, Kyger Creek Station, Cheshire, Ohio, January.

c. John Griggs

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AGES
Applied Geology And Environmental Science, Inc.

2402 Hookstown Grade Road, Suite 200
Clinton, PA 15026
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P 412. 264. 6453
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COAL COMBUSTION RESIDUALS REGULATION
2021 GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT

OHIO VALLEY ELECTRIC CORPORATION
KYGER CREEK STATION
CHESHIRE, OHIO

JANUARY 2022

Prepared for:

OHIO VALLEY ELECTRIC CORPORATION (OVEC)

By:

APPLIED GEOLOGY AND ENVIRONMENTAL SCIENCE, INC.

COAL COMBUSTION RESIDUALS REGULATION
2021 GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
OHIO VALLEY ELECTRIC CORPORATION
KYGER CREEK STATION
CHESHIRE, OHIO

JANUARY 2022

Prepared for:

OHIO VALLEY ELECTRIC CORPORATION (OVEC)

Prepared By:

Applied Geology and Environmental Science, Inc.

Bethany J Flaherty

Bethany Flaherty
Senior Scientist

Robert W. King

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

COAL COMBUSTION RESIDUALS REGULATION
2021 GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
OHIO VALLEY ELECTRIC CORPORATION
KYGER CREEK STATION
CHESHIRE, OHIO

T A B L E O F C O N T E N T S

COAL COMBUSTION RESIDUALS REGULATION
2021 GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
OHIO VALLEY ELECTRIC CORPORATION
KYGER CREEK STATION
CHESHIRE, OHIO

T A B L E O F C O N T E N T S

LIST OF TABLES

FIGURES

APPENDICES

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
2021 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 2021 reporting period, the Landfill was operating under the Detection Monitoring program in accordance with §257.94 of the CCR Rule. The seventh and eight rounds of Detection Monitoring were conducted in March and September 2021, 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 2021 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.

In 2021, the sixth and seventh rounds of Assessment Monitoring were conducted in March and September, respectively. Based on the sampling results, it was determined that there were Appendix III SSIs over background. SSIs were confirmed in wells KC-15-04 (Total Dissolved Solids [TDS]), KC-15-05 (TDS and Sulfate) and KC-15-08 (Calcium, Chloride, TDS and Sulfate) during the March 2021 Assessment Monitoring event and in wells KC-15-05 (Boron, Calcium and TDS) and KC-15-08 (TDS and Sulfate) during the September 2021 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 2021. 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 2022 annual reporting period.

SFAP

At the start of this 2021 reporting period, the SFAP was operating under the Assessment Monitoring program in accordance with §257.95 of the CCR Rule. In 2021, the sixth and seventh rounds of Assessment Monitoring were conducted in March and September, respectively. Based on the sampling results, it was determined that there were Appendix III SSIs over background. During the March 2021 Assessment Monitoring event SSIs were confirmed in wells KC-15-18 (Calcium, Chloride, TDS and Sulfate), KC-15-19 (Calcium, TDS and Sulfate), KC-15-20 (Calcium and Sulfate) and KC-15-21(Calcium). During the September 2021 Assessment Monitoring event SSIs were confirmed in wells KC-15-18 (Calcium, Chloride and TDS), KC-15-19 (Calcium), KC-15-20 (Calcium and TDS) and KC-15-21(Calcium and TDS).

As part of the Assessment Monitoring program, concentrations of the Appendix IV constituents are compared to the applicable GWPS. All Appendix IV results were compared to the GWPSs and there were no GWPS exceedances during the March and September 2021 Assessment Monitoring Events. Therefore, the unit will remain in Assessment Monitoring. Based on these results, the SFAP will remain operating under the Assessment Monitoring program in accordance with §257.95 of the CCR Rule.

COAL COMBUSTION RESIDUALS REGULATION
2021 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 2021, 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.

Groundwater levels measured in 2021 are included in Table A-1 of Appendix A. Groundwater flow maps for the two (2) monitoring events completed in 2021 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 2021 in accordance with the requirements of the Detection Monitoring Program at

the Landfill. The seventh round of Detection Monitoring samples was collected in March 2021 and the eighth round of Detection Monitoring groundwater samples was collected in September 2021. 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 September 2021 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 2021. 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.

Groundwater levels measured in 2021 are included in Table A-2 of Appendix A. Groundwater flow maps for the two (2) monitoring events completed in 2021 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 sixth and seventh rounds of Assessment Monitoring were conducted in March and September 2021, 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 2021.

The statistical evaluation of the data identified potential SSIs of one (1) or more Appendix III constituents in monitoring wells KC-15-04, KC-15-05 and KC-15-08 in the March 2021 Assessment Monitoring Event and in monitoring wells KC-15-05, KC-15-06 and KC-15-08 in the September 2021 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 2021 (Table 4-4):

March 2021 Assessment Monitoring Event Appendix III SSIs

- KC-15-04: Total Dissolved Solids (TDS);
- KC-15-05: Boron, TDS and Sulfate; and
- KC-15-08: Calcium, Chloride, TDS and Sulfate.

September 2021 Assessment Monitoring Event Appendix III SSIs

- KC-15-05: Boron, Calcium and TDS; and
- KC-15-08: TDS and Sulfate.

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 sixth Assessment Monitoring Event (March 2021), it was confirmed that Arsenic in well KC-15-07 exceeded the GWPS of 10 micrograms per liter (ug/L) (Table 4-6). During the seventh Assessment Monitoring Event (September 2021), it was confirmed that Arsenic in well KC-15-07 exceeded the GWPS (Table 4-6). Arsenic in well KC-15-08 was identified as a potential SSI during that event but the SSI was not confirmed.

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.

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 2021 are included in Table A-3 of Appendix A. Groundwater flow maps for the two (2) monitoring events completed in 2021 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. No flow reversals were noted at the SFAP during any of the 2021 monitoring events.

5.2 Groundwater Sampling

In accordance with §257.95 of the CCR Rule, the sixth and seventh rounds of Assessment Monitoring were conducted in March and September 2021, 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 2021. 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 and KC-15-21 at the SFAP. In accordance with the StAP, OVEC resampled the wells for those constituents with potential SSIs. Based on the results, the following Appendix III SSIs were confirmed at the SFAP (Table 5-4):

March 2021 Assessment Monitoring Event Appendix III SSIs

- KC-15-18: Calcium, Chloride, TDS and Sulfate;
- KC-15-19: Calcium, TDS and Sulfate;
- KC-15-20: Calcium and Sulfate; and
- KC-15-21: Calcium.

September 2021 Assessment Monitoring Event Appendix III SSIs

- KC-15-18: Calcium, Chloride and TDS;
- KC-15-19: Calcium;
- KC-15-20: Calcium and TDS; and
- KC-15-21: Calcium and TDS.

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 and there were no GWPS exceedances during the March and September 2021 Assessment Monitoring Events. Therefore, the unit will remain in Assessment Monitoring.

6.0 PROBLEMS ENCOUNTERED

There were no problems encountered during the 2021 groundwater morning program at Kyger Creek Station.

7.0 PROJECTED ACTIVITIES FOR 2022

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 2022.

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

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 PROGAM
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 2021
CLASS III RESIDUAL WASTE LANDFILL
CCR GROUNDWATER MONITORING PROGAM
KYGER CREEK STATION
CHESHIRE, OHIO

Well ID	Designation	Mar-21	Sep-21
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 2021
CLASS III RESIDUAL WASTE LANDFILL
CCR GROUNDWATER MONITORING PROGAM
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	Apr-21	8.32	709	8.12	-144	0.84	4.01
BUSW-2	Apr-21	9.06	114	7.36	-142	3.37	2.87
BUSW-3	Apr-21	12.63	459	6.65	-48	3.21	3.98
BUSW-4	Apr-21	12.36	432	6.46	49	236	19.3
BUSW-5	Apr-21	19.68	371	6.91	-106	3.67	4.00
BUSW-8	Apr-21	18.27	334	7.04	-39	1.22	2.62
BUSW-10	Apr-21	22.1	985	7.38	32	4.75	3.09
IMW-1BU	Apr-21	19.96	189	7.05	-117	1.76	1.32
IMW-2BU	Apr-21	20.12	334	7.14	-100	1.8	2.89
MW-3D	Apr-21	23.41	491	6.86	-102	0.98	3.61
MW-4D	Apr-21	14.63	231	8.32	125	3.18	2.67
CCR-1BU	Apr-21	20.19	346	7.01	-130	3.02	3.01
CCR-2BU	Mar-21	12.1	955	7.87	-140	0.95	4.53
BUSW-1	Sep-21	20.3	700	7.77	160	1.05	4.51
BUSW-2	Oct-21	18.4	107	4.35	48	1.05	4.5
BUSW-3	Oct-21	25.34	466	5.24	184	1.16	3.84
BUSW-4	WELL DRY						
BUSW-5	Oct-21	21.48	393	6.81	100	1.24	3.45
BUSW-8	Oct-21	24.03	352	6.59	184	3.92	3.08
BUSW-10	Oct-21	20.72	923	6.44	58	1.79	1.06
IMW-1BU	Oct-21	15.71	1740	6.96	124	1.87	3.82
IMW-2BU	Oct-21	16.51	3150	7.55	38	9.95	3.22
MW-3D	Oct-21	22.81	490	6.44	159	1.69	3.12
MW-4D	Oct-21	16.34	2120	7.89	141	2.85	3.82
CCR-1BU	Oct-21	16.79	378	6.79	147	1.57	3.82
CCR-2BU	Sep-21	19.2	101	6.42	79	1.05	4.8

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 2021
BOILER SLAG POND
CCR GROUNDWATER MONITORING PROGRAM
KYGER CREEK STATION
CHESHIRE, OHIO

Well ID	Designation	Mar-21	Jun-21	Sep-21	Dec-21
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 2021
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-21	15.72	820	5.67	0.97	0.47	1.19
KC-15-02	Mar-21	14.21	869	6.42	0.211	0.54	1.69
KC-15-03	Mar-21	18.5	878	6.21	-51	1.59	4.12
KC-15-04	Mar-21	17.02	898	5.94	-132	0.3	0.458
KC-15-05	Mar-21	17.27	1010	6.1	0.35	0.26	1.97
KC-15-06	Mar-21	16.61	752	6.17	0.138	0.22	2.36
KC-15-07	Mar-21	16.31	720	6.38	-306	0.51	2.27
KC-15-08	Mar-21	16.35	1350	6.71	0.282	0.42	1.27
KC-19-27	Mar-21	15.47	2100	5.62	0.72	0.49	4.66
KC-19-28	Mar-21	14.75	359	5.79	62	0.5	3.41
KC-19-29	Mar-21	14.12	844	5.86	210	0.57	4.05
KC-15-04	Jun-21	20.57	784	6.59	-22	8.06	16.2
KC-15-05	Jun-21	23.16	993	6.57	449	1.58	4.25
KC-15-07	Jun-21	21.26	763	6.57	-32	7.09	29.1
KC-15-08	Jun-21	21.92	1340	7.72	55	2.52	1.11
KC-15-01	Sep-21	16.5	759	6.3	-22	3.05	2.1
KC-15-02	Sep-21	17.14	789	6.46	-21	3.3	4.36
KC-15-03	Sep-21	16.25	785	6.2	38	0.23	11
KC-15-04	Sep-21	19.15	778	6.07	37	4.6	13.1
KC-15-05	Sep-21	20.57	1010	6.6	44	1.25	4.6
KC-15-06	Sep-21	19.68	823	6.89	45	8.1	4.05
KC-15-07	Sep-21	21.9	679	6.61	12	16.82	75.5
KC-15-08	Sep-21	21.94	1450	7.04	-134	6.86	4.69
KC-19-27	Oct-21	16.98	1630	6.38	-77	0.51	4.2
KC-19-28	Sep-21	16.17	476	6.45	150	3.86	4.45
KC-19-29	Sep-21	16.1	757	6.25	315	17.42	45.4
KC-15-06	Dec-21	16.01	996	7.24	232	16.65	3.51
KC-15-05	Dec-21	15.84	690	6.47	250	3.71	4.07
KC-15-07	Dec-21	14.15	502	7.3	76	17.4	4.89
KC-15-08	Dec-21	17.00	998	7.83	131	19.05	4.65

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

Well ID	Potential SSI Parameter (Units)	6th Assessment Monitoring Sampling Event March 2021		6th Assessment Monitoring Resampling Event June 2021		7th Assessment Monitoring Sampling Event September 2021		7th Assessment Monitoring Resampling Event December 2021	
		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)	0.58	0.56	0.55	No	NA	NA	NA	NA
	TDS (mg/L)	580	579.8	590	**Yes**	NA	NA	NA	NA
KC-15-05	Boron (mg/L)	0.94	0.56	0.88	**Yes**	0.83	0.53	0.77	**Yes**
	Calcium (mg/L)	NA	NA	NA	NA	130	125	130	**Yes**
	TDS (mg/L)	780	579.8	710	**Yes**	700	592	660	**Yes**
	Sulfate (mg/L)	350	311.1	360	**Yes**	370	330	320	No
KC-15-06	Chloride (mg/L)	NA	NA	NA	NA	41	37	27	No
KC-15-08	Boron (mg/L)	NA	NA	NA	NA	0.67	0.53	0.31	No
	Calcium (mg/L)	190	129	200	**Yes**	200	125	63	No
	Chloride (mg/L)	44	37.4	41	**Yes**	44	37	31	No
	TDS (mg/L)	1000	579.8	1000	**Yes**	1100	592	610	**Yes**
	Sulfate (mg/L)	540	311.1	520	**Yes**	620	330	360	**Yes**

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)	1.9	100	100
Cobalt, Co (µg/L)	10.8	6*	10.8
Fluoride, F (mg/L)	0.2	4	4
Lithium, Li (µg/L)	0.03	40*	40
Lead, Pb (µg/L)	0.9	15*	15
Mercury, Hg (µg/L)	0.3	2	2
Molybdenum, Mo (µg/L)	6	100*	100
Radium 226 & 228 (combined) (pCi/L)	2.5	5	5
Selenium, Se (µg/L)	2.5	50	50
Thallium, Tl (µg/L)	0.9	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)	6th Assessment Monitoring Sampling Event March 2021		6th Assessment Monitoring Resampling Event June 2021		7th Assessment Monitoring Sampling Event September 2021		7th Assessment Monitoring Resampling Event December 2021	
		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)	180	10	96	**Yes**	110	10	43	**Yes**
KC-15-08	Arsenic (µg/L)	NA	NA	NA	NA	13	10	5.1	No

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 2021
SOUTH FLY ASH POND
CCR GROUNDWATER MONITORING PROGRAM
KYGER CREEK STATION
CHESHIRE, OHIO

Well ID	Designation	Mar-21	Jun-21	Sep-21	Dec-21
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	AM
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 2021
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-21	14.4	537	6.45	-192	0.3	1.87
KC-15-10	Mar-21	14.11	471	6.28	-68	0.6	2.19
KC-15-11	Apr-21	13.37	488	6.24	129	0.98	1.92
KC-15-12	Apr-21	13.18	541	6.73	63	1.01	2.48
KC-15-13	Apr-21	13.38	968	5.91	-180	0.32	4.55
KC-15-14	Apr-21	14.06	730	6.18	-132	0.27	2.6
KC-15-15	Apr-21	16.34	729	5.5	191	0.5	3.22
KC-15-16	Apr-21	16.84	1180	6.15	86	0.51	2.37
KC-15-17	Apr-21	18.17	2170	6.19	-29	0.26	3.17
KC-15-18	Apr-21	15.99	1110	5.95	62	0.33	2.14
KC-15-19	Apr-21	16.44	1100	6.16	141	0.25	2.2
KC-15-20	Apr-21	19.44	1050	6.31	36	0.36	3.17
KC-15-21	Apr-21	18.07	934	6.31	32	0.4	1.89
KC-15-22	Apr-21	15.25	586	6.87	-133	0.63	3.5
KC-15-18	Jun-21	19.11	1240	6.37	141	8.69	4.37
KC-15-19	Jun-21	19.52	1150	5.71	220	2.1	4.03
KC-15-20	Jun-21	27.7	1160	6.83	90	6.84	3.95
KC-15-21	Jun-21	22.37	1120	6.32	139	0.65	4.1
KC-15-09	Sep-21	18.46	488	6.39	-16	0.03	4.71
KC-15-10	Sep-21	18.05	431	6.14	13	0	3.73
KC-15-11	Sep-21	17.11	434	6.08	51	0	4.17
KC-15-12	Sep-21	17.07	553	6.64	9	0	3.83
KC-15-13	Sep-21	17.7	911	5.75	-14	0	4.48
KC-15-14	Sep-21	19.19	684	6.11	-9	0	4.56
KC-15-15	Sep-21	18.56	658	5.31	198	0	4.14
KC-15-16	Sep-21	17.46	1430	5.92	81	0.01	4.94
KC-15-17	Sep-21	19.03	2180	6.15	34	0	4.15
KC-15-18	Sep-21	18.13	1280	5.88	88	0.79	3.12
KC-15-19	Sep-21	18.47	1180	6.15	105	0.7	4.7
KC-15-20	Oct-21	18.42	1150	6.31	52	0.33	4.51
KC-15-21	Oct-21	23.61	1100	6.57	77	2.56	4.19
KC-15-22	Oct-21	15.81	748	6.92	367	2.07	2.08
KC-15-18	Dec-21	13.89	1220	6.69	328	7.1	3.65
KC-15-19	Dec-21	15.76	1010	7.03	224	17.41	4.08
KC-15-20	Dec-21	15.9	1210	7.26	244	10.31	4.01
KC-15-21	Dec-21	15.12	1280	6.79	223	5.02	4.29

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)	6th Assessment Monitoring Sampling Event March 2021		6th Assessment Monitoring Resampling Event June 2021		7th Assessment Monitoring Sampling Event September 2021		7th Assessment Monitoring Resampling Event December 2021	
		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)	150	116	150	Yes	150	111	120	Yes
	Chloride (mg/L)	99	61	100	Yes	110	58	84	Yes
	TDS (mg/L)	1000	830	950	Yes	1100	830	850	Yes
	Sulfate (mg/L)	520	508	530	Yes	580	508	440	No
KC-15-19	Calcium (mg/L)	150	116	150	Yes	150	111	120	Yes
	TDS (mg/L)	1000	830	950	Yes	1000	830	700	No
	Sulfate (mg/L)	580	508	590	Yes	600	508	390	No
KC-15-20	Calcium (mg/L)	170	116	200	Yes	170	111	160	Yes
	TDS (mg/L)	940	830	420	No	910	830	870	Yes
	Sulfate (mg/L)	510	508	510	Yes	520	508	450	No
KC-15-21	Calcium (mg/L)	180	116	160	Yes	190	111	240	Yes
	TDS (mg/L)	NA	NA	NA	NA	850	830	1000	Yes

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.
5. NS: Well was not re-sampled. SSI was therefore assumed to be confirmed. Refer to Section 5.0.

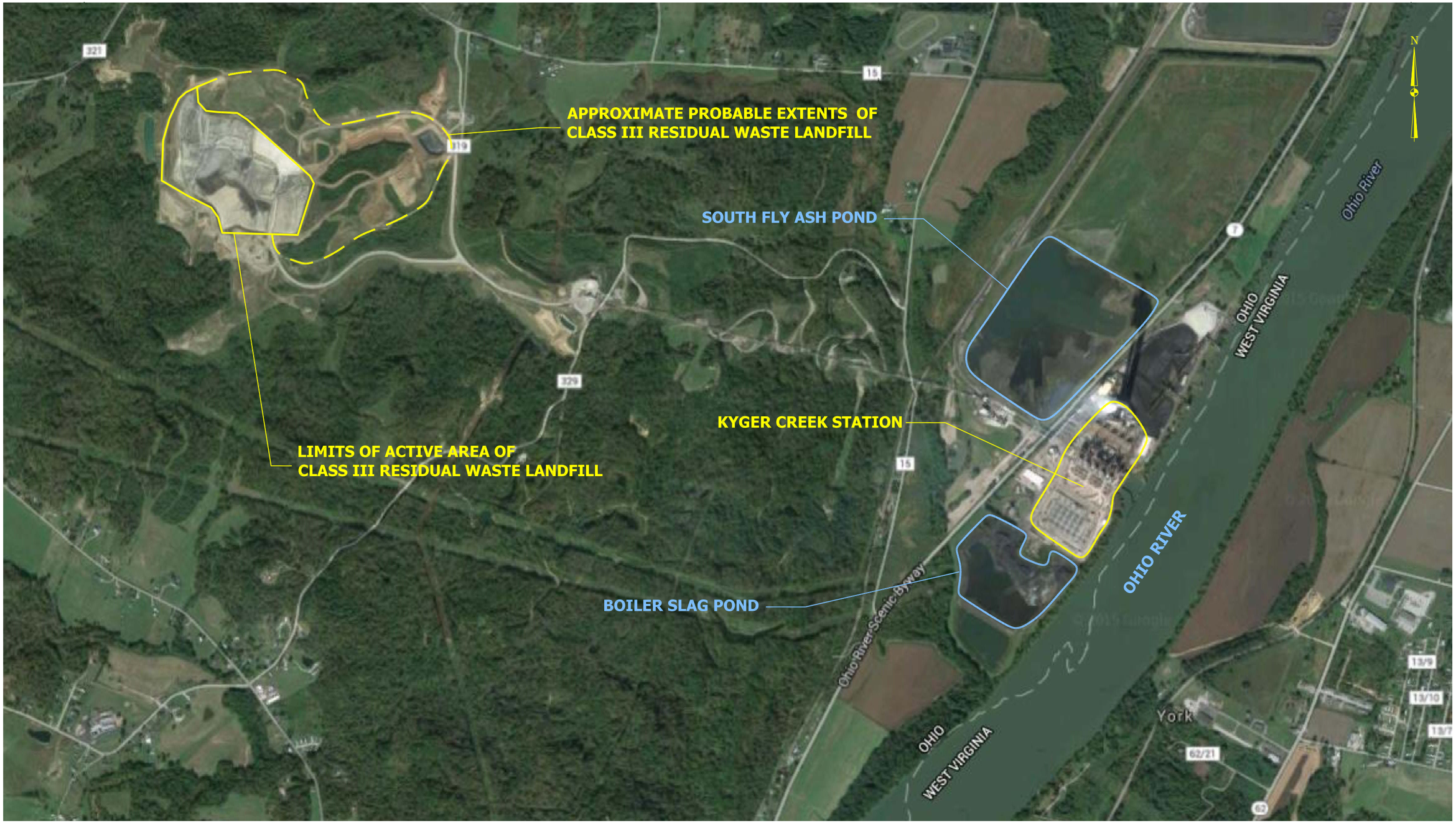
TABLE 5-5
GROUNDWATER PROTECTION STANDARDS
SOUTH FLY ASH POND
CCR ASSESSMENT MONITORING PROGRAM
KYGER CREEK STATION
CHESHIRE, OHIO

Appendix IV Constituents			
Constituent (Units)	**Background**	**MCL/SMCL**	**GWPS**
Antimony, Sb (µg/L)	1	6	6
Arsenic, As (µg/L)	4.89	10	10
Barium, Ba (µg/L)	111	2000	2000
Beryllium, Be (µg/L)	0.6	4	4
Cadmium, Cd (µg/L)	1.2	5	5
Chromium, Cr (µg/L)	2.4	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)	0.3	2	2
Molybdenum, Mo (µg/L)	11.1	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



DRAWN BY	JM
DATE	
CHECKED BY	
JOB NO.	2019018-KYG
DWG FILE	KYGER_CCR_2019 Annual GW Rpt_Aerial Site b01.dwg
DRAWING SCALE	NOT TO SCALE

AGES
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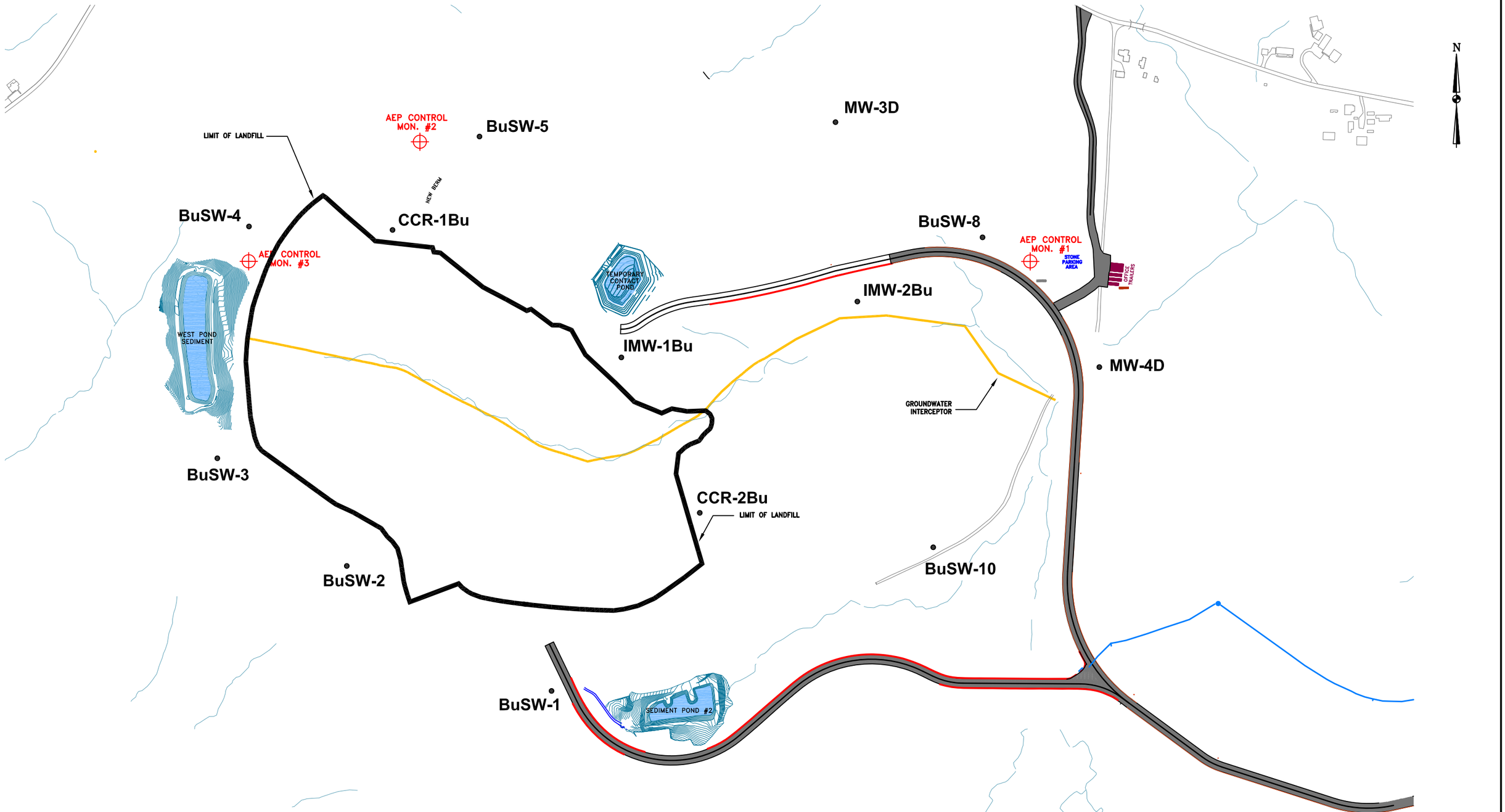
412.264.6453

OHIO VALLEY ELECTRIC COMPANY

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

DRAWING NAME	REV.
FIGURE 1	0

Plot: 01/08/2020 09:18 _PROGRAMS-KYGER OVEC\Kyger Creek-CCR Program\CAD\2019 GW Monitoring-Corrective Action Rpt\KYGER_CRR_2019 Annual GW Rpt_Aerial Site b01.dwg



LEGEND:

BuSW-1 BUFFALO SANDSTONE WELL

400' 0' 400' 800'

SCALE: 1"= 400'

DRAWN BY	JM
DATE	
CHECKED BY	
JOB NO.	2019018-KYGER
DWG FILE	KYGER_CCR_2019 Annual GW Rpt_Well Locs b02.dwg
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 MONITORING WELL LOCATIONS

DRAWING NAME: FIGURE 2

REV. 0

Plot: 01/08/2020 09:28 _PROGRAMS-KYGER OVEC\Kyger Creek-CCR Program\CAD\2019 GW Monitoring-Corrective Action Rpt\KYGER_CCR_2019 Annual GW Rpt_Well Locs b02.dwg

N

OHIO ROUTE 7

KC-15-01

KC-15-02

KC-15-03

BOILER SLAG POND

KC-15-04

KC-15-05

KC-19-27

KC-15-08

KC-15-07

KC-15-06

CLEARWATER POND

KC-19-28

KYGER CREEK

OHIO RIVER

KC-19-29

LEGEND:

EXISTING CCR PROGRAM MONITORING WELL

NEW CCR PROGRAM MONITORING WELL (INSTALLED IN APRIL 2019)

200' 0' 200' 400'

SCALE: 1"= 200'

DRAWN BY	JM
DATE	
CHECKED BY	
JOB NO.	2019018-KYGER
DWG FILE	KYGER_CCR_2019 Annual GW Rpt_Ponds+MWs b03-b04.dwg
DRAWING SCALE	1"=200'

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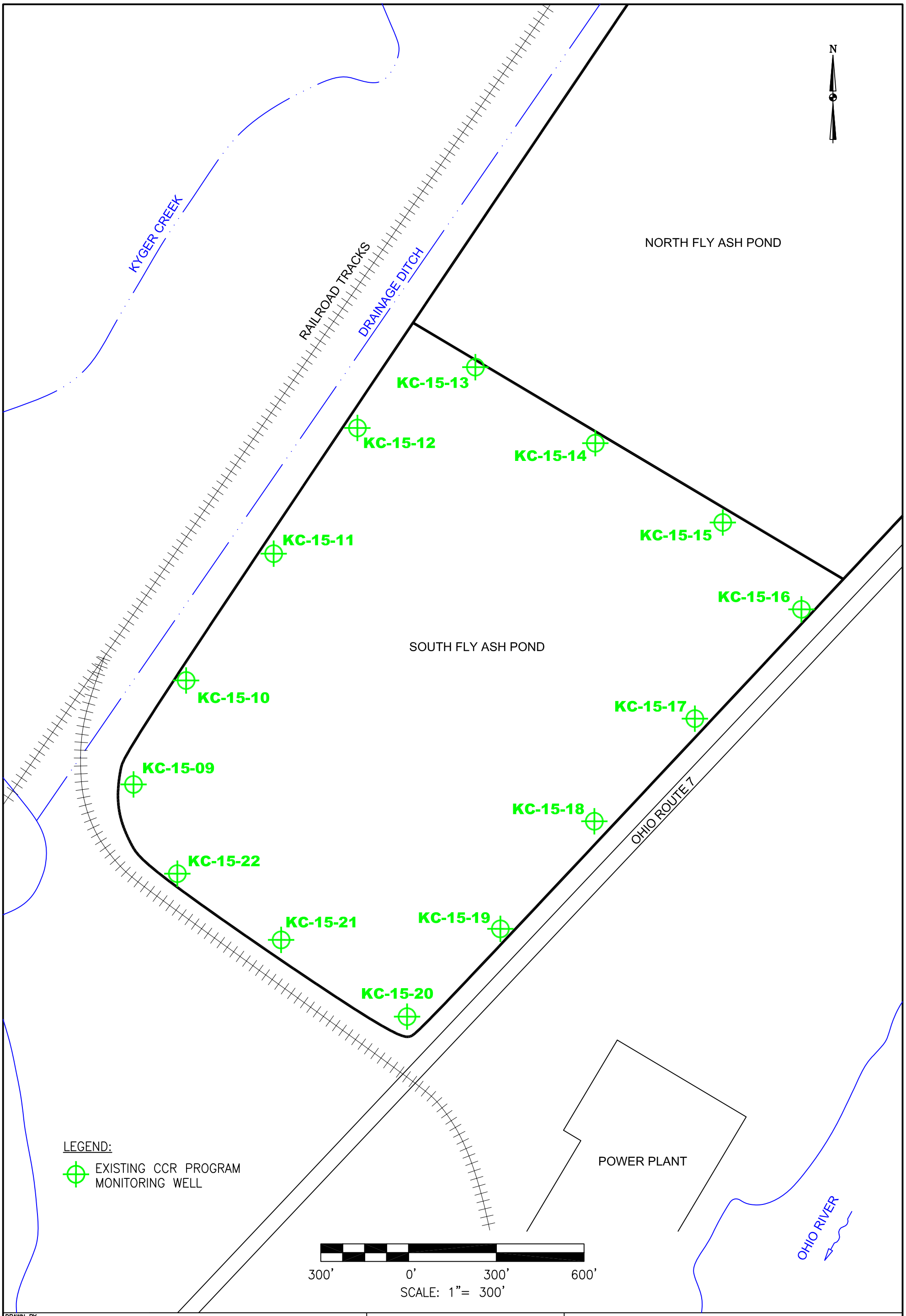
OHIO VALLEY ELECTRIC COMPANY

KYGER CREEK STATION
CHESHIRE, GALLIA COUNTY, OHIO
BOILER SLAG POND
GROUNDWATER MONITORING WELL LOCATIONS

DRAWING NAME: FIGURE 3

REV.: 0



DRAWN BY	JM
DATE	
CHECKED BY	
JOB NO.	2019018-KYGER
DWG FILE	KYGER_CCR_2019 Annual GW Rpt_Ponds+MWs b03-b04.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 MONITORING WELL LOCATIONS

DRAWING NAME	REV.
FIGURE 4	0

APPENDIX A

GROUNDWATER ELEVATIONS

TABLE A-1
SUMMARY OF GROUNDWATER ELEVATION DATA DURING 2021
CLASS III RESIDUAL WASTE LANDFILL
CCR GROUNDWATER MONITORING PROGRAM
KYGER CREEK STATION
CHESHIRE, OHIO

Well ID	Mar-21	Jun-21	Sep-21	Dec-21
	Groundwater Elevation (ft)			
BUSW-1	574.85	NM	566.90	NM
BUSW-2	577.44	NM	569.46	NM
BUSW-3	562.60	NM	550.84	NM
BUSW-4	534.38	NM	528.15	NM
BUSW-5	580.18	NM	574.08	NM
BUSW-8	571.90	NM	564.47	NM
BUSW-10	575.28	NM	565.53	NM
IMW-1BU	549.61	NM	573.05	NM
IMW-2BU	572.12	NM	564.75	NM
CCR-1BU	568.68	NM	552.58	NM
CCR-2BU	574.93	NM	564.38	NM
MW-3D	615.70	NM	571.71	NM
MW-4D	569.55	NM	566.15	NM

Notes:
1. NM: Not Measured

TABLE A-2
SUMMARY OF GROUNDWATER ELEVATION DATA DURING 2021
BOILER SLAG POND
CCR GROUNDWATER MONITORING PROGRAM
KYGER CREEK STATION
CHESHIRE, OHIO

Well ID	Mar-21	Jun-21	Sep-21	Dec-21
	Groundwater Elevation (ft)			
KC-15-01	539.98	NM	539.82	NM
KC-15-02	540.22	NM	540.55	NM
KC-15-03	540.06	NM	542.78	NM
KC-15-04	539.34	538.48	537.25	NM
KC-15-05	540.10	537.94	538.22	538.57
KC-15-06	540.46	NM	538.48	538.63
KC-15-07	539.23	538.46	539.11	538.64
KC-15-08	539.45	538.91	539.61	539.23
KC-19-27	536.58	NM	538.30	NM
KC-19-28	535.68	NM	538.28	NM
KC-19-29	538.83	NM	538.67	NM

Notes:
1. NM: Not Measured

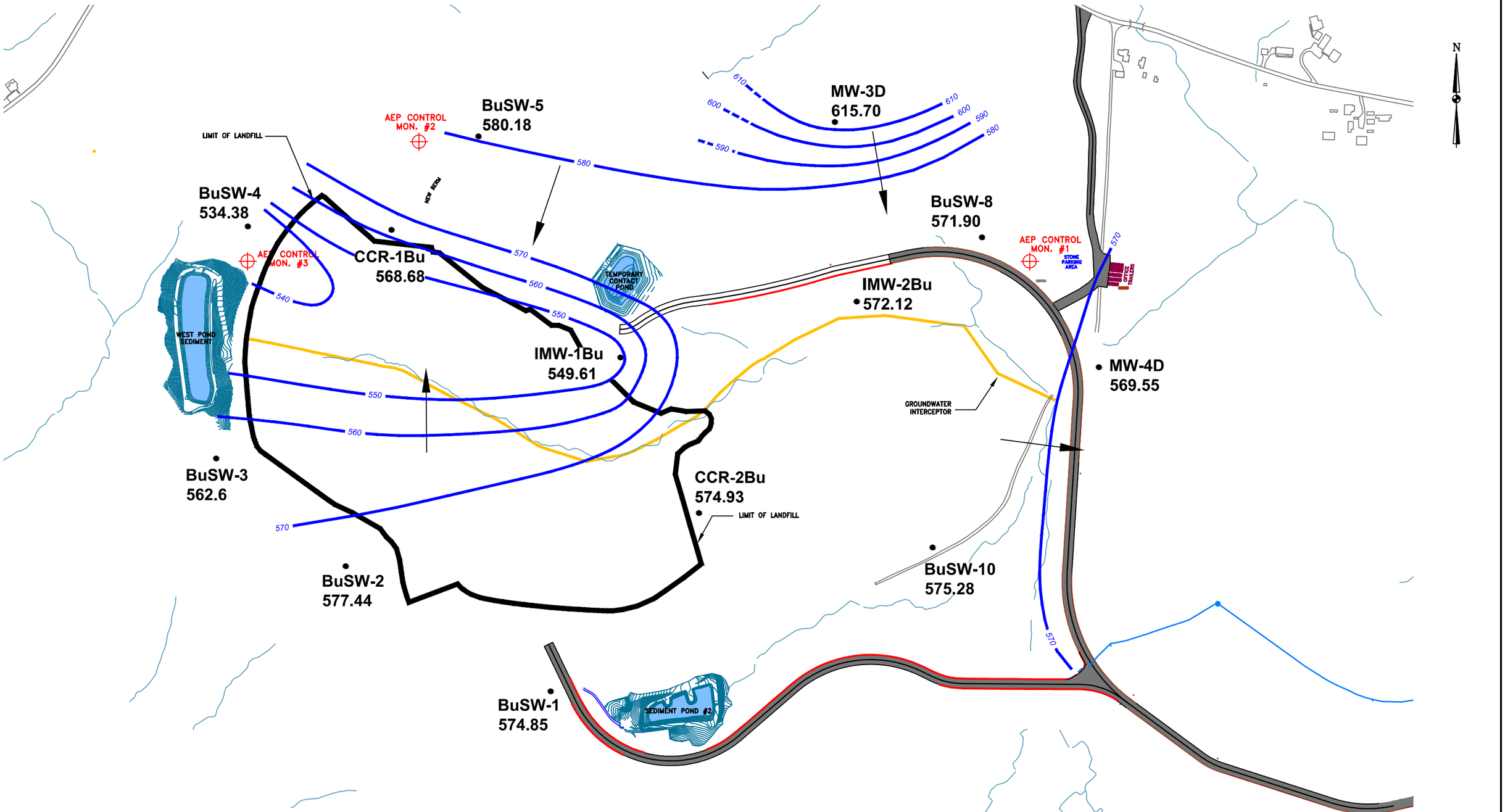
TABLE A-3
SUMMARY OF GROUNDWATER ELEVATION DATA DURING 2021
SOUTH FLY ASH POND
CCR GROUNDWATER MONITORING PROGRAM
KYGER CREEK STATION
CHESHIRE, OHIO

Well ID	Mar-21	Jun-21	Sep-21	Dec-21
	Groundwater Elevation (ft)			
KC-15-09	541.29	NM	540.24	NM
KC-15-10	541.50	NM	540.34	NM
KC-15-11	541.79	NM	540.44	NM
KC-15-12	541.90	NM	540.56	NM
KC-15-13	541.85	NM	540.52	NM
KC-15-14	541.67	NM	540.41	NM
KC-15-15	541.37	NM	540.12	NM
KC-15-16	541.08	NM	539.85	NM
KC-15-17	541.20	NM	540.01	NM
KC-15-18	540.94	538.04	539.65	539.90
KC-15-19	540.78	523.55	539.54	539.62
KC-15-20	540.62	540.07	539.28	542.60
KC-15-21	540.82	540.06	539.25	541.80
KC-15-22	541.11	NM	539.91	NM

Notes:
1. NM: Not Measured

APPENDIX B

GROUNDWATER FLOW MAPS



LEGEND:

● BuSW–1 BUFFALO SANDSTONE WELL

400' 0' 400' 800'

SCALE: 1"= 400'

DRAWN BY	JM
DATE	
CHECKED BY	
JOB NO.	2021028–KYGER
DWG FILE	B–1_KYGER_CCR_2021 Annual GW Rpt_Landfill_GW Flow_MAR2021.dwg
DRAWING SCALE	AS SHOWN

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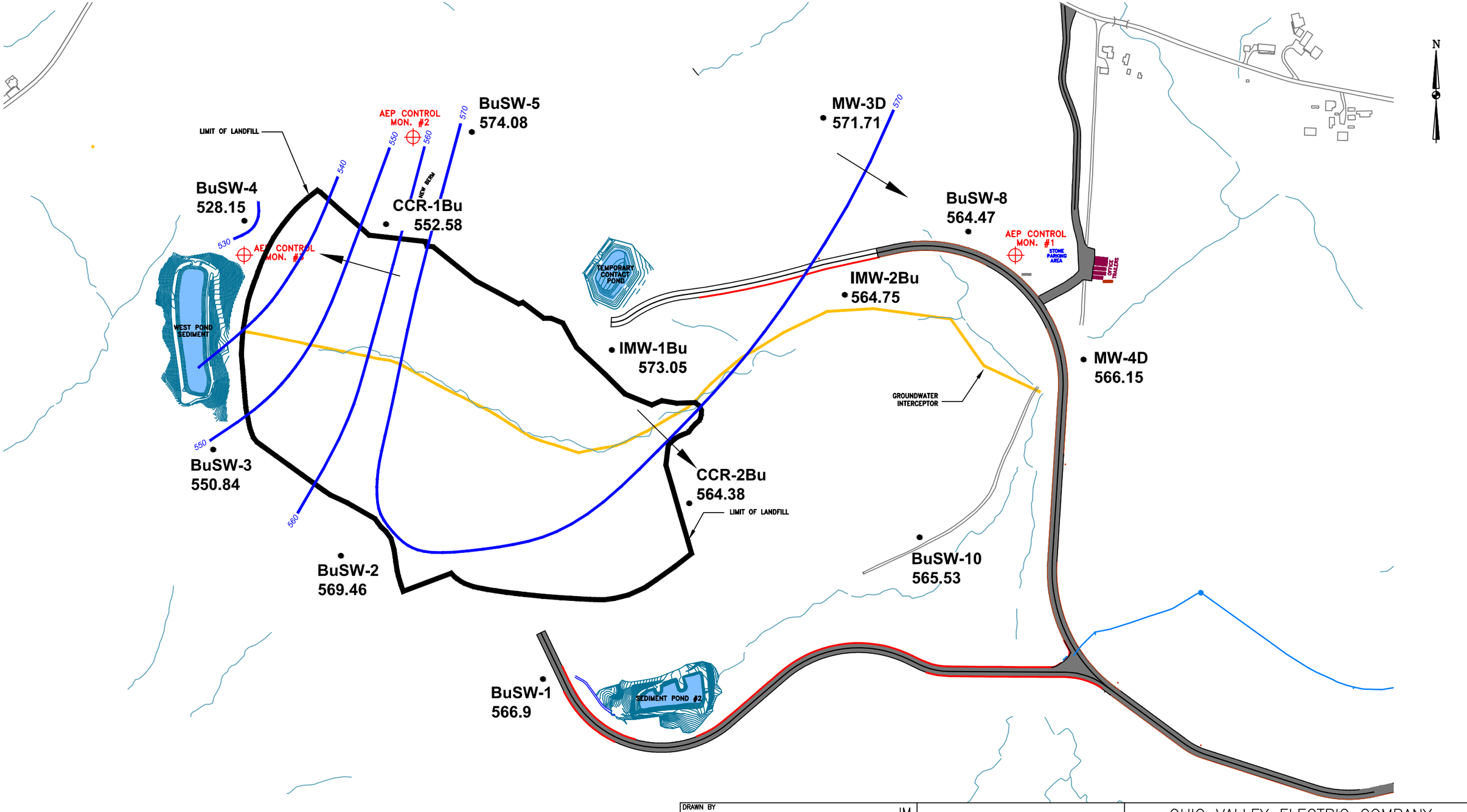
OHIO VALLEY ELECTRIC COMPANY
KYGER CREEK STATION
CHESHIRE, GALLIA COUNTY, OHIO
CLASS III RESIDUAL WASTE LANDFILL
GROUNDWATER ELEVATIONS AND FLOW MAP
MARCH 2021

DRAWING NAME	REV.
FIGURE B–1	0

Plot: 11/10/2021 11:56 _PROGRAMS–KYGER OVEC\Kyger Creek–CCR Program\CAD\2021 GW Monitoring–Corrective Action Rpt\B–1_KYGER_CCR_2021 Annual GW Rpt_Landfill_GW Flow_MAR2021.dwg



LEGEND:

● BuSW-1 BUFFALO SANDSTONE WELL

400' 0' 400' 800'

SCALE: 1"= 400'

DRAWN BY	JM
DATE	
CHECKED BY	
JOB NO.	2021028-KYGER
DWG FILE	B-2_KYGER_CCR_2021 Annual GW Rpt_Landfill_GW Flow_SEPT2021.dwg
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
SEPTEMBER 2021

DRAWING NAME: FIGURE B-2 REV. 0

Plot: 11/10/2021 14:10 _PROGRAMS-KYGER OVEC\Kyger Creek-CCR Program\CAD\2021 GW Monitoring-Corrective Action Rpt\B-2_KYGER_CCR_2021 Annual GW Rpt_Landfill_GW Flow_SEPT2021.dwg

N

OHIO ROUTE 7

KC-15-03
540.06

KC-15-02
540.22

KC-15-01
539.98

540

540

539

BOILER SLAG POND

KC-15-04
539.34

538

537

KC-15-05
540.10

KC-19-27
536.58

KC-15-08
539.45

KC-15-06
540.46

KC-15-07
539.23

CLEARWATER POND

539

536

538
537
536

KC-19-28
535.68

KYGER CREEK

OHIO RIVER
~539.20' MSL

KC-19-29
538.83

538

LEGEND:

EXISTING CCR PROGRAM MONITORING WELL

NEW CCR PROGRAM MONITORING WELL
(INSTALLED IN APRIL 2019)

200' 0' 200' 400'
SCALE: 1"= 200'

DRAWN BY	JM
DATE	
CHECKED BY	
JOB NO.	2021028-KYGER
DWG FILE	B-3_KYGER_CCR_2021 Annual GW Rpt_BSP_GW Flow_MAR2021.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
MARCH 2021

DRAWING NAME: FIGURE B-3
REV.: 0

Plot: 01/13/2022 14:53 \Kyger Creek-CCR Program\CAD\2021 GW Monitoring-Corrective Action Rpt\B-3_KYGER_CCR_2021 Annual GW Rpt_BSP_GW Flow_MAR2021.dwg

N

OHIO ROUTE 7

KYGER CREEK

542

541

540

539

538

KC-15-03
542.77

KC-15-02
540.55

KC-15-01
539.82

KC-15-04
537.25

KC-15-08
539.61

KC-15-05
538.22

KC-19-27
538.30

KC-15-07
539.11

KC-15-06
538.48

KC-19-28
538.28

KC-19-29
538.67

BOILER SLAG POND

CLEARWATER POND

OHIO RIVER
~539.70' MSL

LEGEND:

EXISTING CCR PROGRAM MONITORING WELL

NEW CCR PROGRAM MONITORING WELL
(INSTALLED IN APRIL 2019)

200' 0' 200' 400'

SCALE: 1"= 200'

DRAWN BY	JM
DATE	
CHECKED BY	
JOB NO.	2021028-KYGER
DWG FILE	B-4_KYGER_CCR_2021 Annual GW Rpt_BSP_GW Flow_SEPT2021.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
SEPTEMBER 2021

DRAWING NAME: FIGURE B-4

REV. 0

Plot: 01/18/2022 10:37 \Kyger Creek-CCR Program\CAD\2021 GW Monitoring-Corrective Action Rpt\B-4_KYGER_CCR_2021 Annual GW Rpt_BSP_GW Flow_SEPT2021.dwg

N

KYGER CREEK

RAILROAD TRACKS

DRAINAGE DITCH

NORTH FLY ASH POND

KC-15-13
541.85

KC-15-14
541.67

KC-15-12
541.90

KC-15-15
541.37

KC-15-11
541.79

KC-15-16
541.08

KC-15-10
541.**50**

SOUTH FLY ASH POND

KC-15-17
541.20

KC-15-09
541.29

KC-15-18
540.94

OHIO ROUTE 7

541

KC-15-22
541.1**1**

KC-15-21
540.82

KC-15-19
540.78

KC-15-20
540.6**2**

LEGEND:

EXISTING CCR PROGRAM MONITORING WELL

POWER PLANT

OHIO RIVER

~539.20 MSL

300' 0' 300' 600'

SCALE: 1"= 300'

DRAWN BY	JM
DATE	
CHECKED BY	
JOB NO.	2021028-KYG
DWG FILE	B-5_KYGER_CCR_2021 Annual GW Rpt_SFAP_GW Flow_MAR2021.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
MARCH 2021

DRAWING NAME	REV.
FIGURE B-5	0

Plot: 11/11/2021 11:43 \Kyger Creek-CCR Program\CAD\2021 GW Monitoring-Corrective Action Rpt\B-5_KYGER_CCR_2021 Annual GW Rpt_SFAP_GW Flow_MAR2021.dwg

N

KYGER CREEK

RAILROAD TRACKS

DRAINAGE DITCH

NORTH FLY ASH POND

KC-15-13
540.52

KC-15-14
540.41

KC-15-12
540.56

KC-15-15
540.12

KC-15-11
540.44

KC-15-16
539.85

KC-15-10
540.34

SOUTH FLY ASH POND

KC-15-17
540.01

KC-15-09
540.24

540

KC-15-18
539.65

OHIO ROUTE 7

KC-15-22
539.91

KC-15-19
539.54

KC-15-21
539.25

KC-15-20
539.28

LEGEND:

EXISTING CCR PROGRAM MONITORING WELL

POWER PLANT

OHIO RIVER
~539.70 MSL

300' 0' 300' 600'

SCALE: 1"= 300'

DRAWN BY	JM
DATE	
CHECKED BY	
JOB NO.	2021028-KYG
DWG FILE	B-6_KYGER_CCR_2021 Annual GW Rpt_SFAP_GW Flow_SEPT2021.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
SEPTEMBER 2021

DRAWING NAME	REV.
FIGURE B-6	0

Plot: 01/18/2022 10:53 \Kyger Creek-CCR Program\CAD\2021 GW Monitoring-Corrective Action Rpt\B-6_KYGER_CCR_2021 Annual GW Rpt_SFAP_GW Flow_SEPT2021.dwg

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, SO4
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 2021 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Mar-21	Sep-21
Appendix III Constituents			
Boron, B	mg/L	0.35	0.34
Calcium, Ca	mg/L	14	12
Chloride, Cl	mg/L	2000	2200
Fluoride, F	mg/L	1.4	1.5
pH	s.u.	8.12	7.77
Sulfate, SO4	mg/L	94	91
Total Dissolved Solids (TDS)	mg/L	3700	3800

BuSW-2
SUMMARY OF 2021 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Mar-21	Sep-21
Appendix III Constituents			
Boron, B	mg/L	0.46	0.43
Calcium, Ca	mg/L	51	52
Chloride, Cl	mg/L	3400	3700
Fluoride, F	mg/L	1.3	1.4
pH	s.u.	7.36	4.35
Sulfate, SO4	mg/L	4.5 J	2.2 J
Total Dissolved Solids (TDS)	mg/L	6000	5900

BuSW-3
SUMMARY OF 2021 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Mar-21	Sep-21
Appendix III Constituents			
Boron, B	mg/L	0.43	0.39
Calcium, Ca	mg/L	930	890
Chloride, Cl	mg/L	19000	23000
Fluoride, F	mg/L	2.5 U	1 U
pH	s.u.	6.65	5.24
Sulfate, SO4	mg/L	29 J	28
Total Dissolved Solids (TDS)	mg/L	29000	30000

BuSW-4
SUMMARY OF 2021 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Mar-21	Sep-21
Appendix III Constituents			
Boron, B	mg/L	0.38	WELL DRY
Calcium, Ca	mg/L	1000	
Chloride, Cl	mg/L	19000	
Fluoride, F	mg/L	2.5 U	
pH	s.u.	6.46	
Sulfate, SO4	mg/L	19 J	
Total Dissolved Solids (TDS)	mg/L	29000	

BuSW-5
SUMMARY OF 2021 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Mar-21	Sep-21
Appendix III Constituents			
Boron, B	mg/L	0.41	0.37
Calcium, Ca	mg/L	560	590
Chloride, Cl	mg/L	15000	19000
Fluoride, F	mg/L	2.5 U	0.52 J
pH	s.u.	6.91	6.81
Sulfate, SO4	mg/L	50 U	20 U
Total Dissolved Solids (TDS)	mg/L	26000	22000

BuSW-8
SUMMARY OF 2021 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Mar-21	Sep-21
Appendix III Constituents			
Boron, B	mg/L	0.35	0.37
Calcium, Ca	mg/L	490	490
Chloride, Cl	mg/L	14000	15000
Fluoride, F	mg/L	0.37	1 U
pH	s.u.	7.04	6.59
Sulfate, SO4	mg/L	2.1	20 U
Total Dissolved Solids (TDS)	mg/L	24000	22000

BuSW-10
SUMMARY OF 2021 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Mar-21	Sep-21
Appendix III Constituents			
Boron, B	mg/L	0.37	0.39
Calcium, Ca	mg/L	46	35
Chloride, Cl	mg/L	3000	3800
Fluoride, F	mg/L	1.3	1.4
pH	s.u.	7.38	6.44
Sulfate, SO4	mg/L	9.3	3.9 J
Total Dissolved Solids (TDS)	mg/L	4700	5800

CCR-1BU
SUMMARY OF 2021 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Mar-21	Sep-21
Appendix III Constituents			
Boron, B	mg/L	0.31	0.28
Calcium, Ca	mg/L	710	740
Chloride, Cl	mg/L	14000	15000
Fluoride, F	mg/L	2.5 U	1 U
pH	s.u.	7.01	6.79
Sulfate, SO4	mg/L	50 U	20 U
Total Dissolved Solids (TDS)	mg/L	23000	20000

CCR-2BU
SUMMARY OF 2021 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Mar-21	Sep-21
Appendix III Constituents			
Boron, B	mg/L	0.28	0.3
Calcium, Ca	mg/L	54	54
Chloride, Cl	mg/L	2900	3400
Fluoride, F	mg/L	1.5	1.5
pH	s.u.	7.87	6.42
Sulfate, SO4	mg/L	38	36
Total Dissolved Solids (TDS)	mg/L	5000	5200

IMW-1BU
SUMMARY OF 2021 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Mar-21	Sep-21
Appendix III Constituents			
Boron, B	mg/L	0.38	0.38
Calcium, Ca	mg/L	170	140
Chloride, Cl	mg/L	6500	7200
Fluoride, F	mg/L	1.1	1.4
pH	s.u.	7.05	6.96
Sulfate, SO4	mg/L	9.9	4.1 J
Total Dissolved Solids (TDS)	mg/L	11000	9400

IMW-2BU
SUMMARY OF 2021 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Mar-21	Sep-21
Appendix III Constituents			
Boron, B	mg/L	0.36	0.39
Calcium, Ca	mg/L	470	410
Chloride, Cl	mg/L	13000	13000
Fluoride, F	mg/L	0.55	0.75 J
pH	s.u.	7.14	7.55
Sulfate, SO4	mg/L	3.4	20 U
Total Dissolved Solids (TDS)	mg/L	22000	19000

MW-3D
SUMMARY OF 2021 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Mar-21	Sep-21
Appendix III Constituents			
Boron, B	mg/L	0.42	0.33
Calcium, Ca	mg/L	1100	1100
Chloride, Cl	mg/L	21000	22000
Fluoride, F	mg/L	2.5 U	1 U
pH	s.u.	6.86	6.44
Sulfate, SO4	mg/L	50 U	20 U
Total Dissolved Solids (TDS)	mg/L	36000	29000

MW-4D
SUMMARY OF 2021 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Mar-21	Sep-21
Appendix III Constituents			
Boron, B	mg/L	0.4	0.41
Calcium, Ca	mg/L	3.4 J	3.1 J
Chloride, Cl	mg/L	36	230
Fluoride, F	mg/L	0.1	1.4
pH	s.u.	8.32	7.89
Sulfate, SO4	mg/L	280	320
Total Dissolved Solids (TDS)	mg/L	1400	1200

KC-15-01
SUMMARY OF 2021 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Mar-21	Sep-21
Appendix III Constituents			
Boron, B	mg/L	0.45	0.1 U
Calcium, Ca	mg/L	89	100
Chloride, Cl	mg/L	23	38
Fluoride, F	mg/L	0.033 J	0.11
pH	s.u.	5.67	6.3
Sulfate, SO4	mg/L	330	150
Total Dissolved Solids (TDS)	mg/L	560	490
Appendix IV Constituents			
Antimony, Sb	ug/L	2 U	2 U
Arsenic, As	ug/L	5 U	5
Barium, Ba	ug/L	25	68
Beryllium, Be	ug/L	1 U	1 U
Cadmium, Cd	ug/L	1 U	1 U
Chromium, Cr	ug/L	2 U	5 U
Cobalt, Co	ug/L	9.6	2
Fluoride, F	mg/L	0.033 J	0.11
Lithium, Li	mg/L	0.0051 J	0.0057 J
Lead, Pb	ug/L	1 U	0.87 J
Mercury, Hg	ug/L	0.2 U	0.2 U
Molybdenum, Mo	ug/L	5 U	5 U
Radium 226 & 228 (combined)	pCi/L	0.383 U	1.08
Selenium, Se	ug/L	5 U	5 U
Thallium, Tl	ug/L	1 U	0.51 J

KC-15-02
SUMMARY OF 2021 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Mar-21	Sep-21
Appendix III Constituents			
Boron, B	mg/L	0.07 J	0.075 J
Calcium, Ca	mg/L	120	110
Chloride, Cl	mg/L	34	34
Fluoride, F	mg/L	0.14	0.14
pH	s.u.	6.42	6.46
Sulfate, SO4	mg/L	150	160
Total Dissolved Solids (TDS)	mg/L	580	510
Appendix IV Constituents			
Antimony, Sb	ug/L	2 U	2 U
Arsenic, As	ug/L	2.3 J	2.6 J
Barium, Ba	ug/L	110	110
Beryllium, Be	ug/L	1 U	1 U
Cadmium, Cd	ug/L	1 U	1 U
Chromium, Cr	ug/L	2 U	5 U
Cobalt, Co	ug/L	0.59 J	1
Fluoride, F	mg/L	0.14	0.14
Lithium, Li	mg/L	0.0041 J	0.0055 J
Lead, Pb	ug/L	1 U	0.55 J
Mercury, Hg	ug/L	0.2 U	0.2 U
Molybdenum, Mo	ug/L	1.2 J	1.1 J
Radium 226 & 228 (combined)	pCi/L	1.01	1.15
Selenium, Se	ug/L	5 U	5 U
Thallium, Tl	ug/L	1 U	1 U

KC-15-03
SUMMARY OF 2021 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Mar-21	Sep-21
Appendix III Constituents			
Boron, B	mg/L	0.33	0.37
Calcium, Ca	mg/L	110	110
Chloride, Cl	mg/L	43	31
Fluoride, F	mg/L	0.12	0.1
pH	s.u.	6.21	6.2
Sulfate, SO4	mg/L	230	210
Total Dissolved Solids (TDS)	mg/L	560	530
Appendix IV Constituents			
Antimony, Sb	ug/L	2 U	2 U
Arsenic, As	ug/L	4.7 J	2.5 J
Barium, Ba	ug/L	35	56
Beryllium, Be	ug/L	0.44 J	1 U
Cadmium, Cd	ug/L	0.25 J	1 U
Chromium, Cr	ug/L	2	5 U
Cobalt, Co	ug/L	6.9	4.7
Fluoride, F	mg/L	0.12	0.1
Lithium, Li	mg/L	0.0092	0.007 J
Lead, Pb	ug/L	0.71 J	0.51 J
Mercury, Hg	ug/L	0.2 U	0.2 U
Molybdenum, Mo	ug/L	5.2	1.5 J
Radium 226 & 228 (combined)	pCi/L	0.395 U	0.829
Selenium, Se	ug/L	5 U	5 U
Thallium, Tl	ug/L	0.86 J	1 U

KC-15-04
SUMMARY OF 2021 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Mar-21	Jun-21	Sep-21
Appendix III Constituents				
Boron, B	mg/L	0.58	0.55	0.49
Calcium, Ca	mg/L	93	NA	88
Chloride, Cl	mg/L	28	NA	28
Fluoride, F	mg/L	0.091	NA	0.096
pH	s.u.	5.94	NA	6.07
Sulfate, SO4	mg/L	310	NA	310
Total Dissolved Solids (TDS)	mg/L	580	590	580
Appendix IV Constituents				
Antimony, Sb	ug/L	2 U	NA	2 U
Arsenic, As	ug/L	1.8 J	NA	1.1 J
Barium, Ba	ug/L	44	NA	40
Beryllium, Be	ug/L	1 U	NA	1 U
Cadmium, Cd	ug/L	1 U	NA	1 U
Chromium, Cr	ug/L	2 U	NA	5 U
Cobalt, Co	ug/L	9.1	NA	9.2
Fluoride, F	mg/L	0.091	NA	0.096
Lithium, Li	mg/L	0.011	NA	0.011
Lead, Pb	ug/L	1 U	NA	1 U
Mercury, Hg	ug/L	0.2 U	NA	0.2 U
Molybdenum, Mo	ug/L	1.1 J	NA	5 U
Radium 226 & 228 (combined)	pCi/L	0.621	NA	0.843
Selenium, Se	ug/L	5 U	NA	5 U
Thallium, Tl	ug/L	0.43 J	NA	1 U

Notes:
NA: Sampling not required for this parameter.

KC-15-05
SUMMARY OF 2021 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Mar-21	Jun-21	Sep-21	Dec-21
Appendix III Constituents					
Boron, B	mg/L	0.94	0.88	0.83	0.77
Calcium, Ca	mg/L	120	NA	130	130
Chloride, Cl	mg/L	31	NA	32	NA
Fluoride, F	mg/L	0.14	NA	0.16	NA
pH	s.u.	6.1	NA	6.6	NA
Sulfate, SO4	mg/L	350	360	370	320
Total Dissolved Solids (TDS)	mg/L	780	710	700	660
Appendix IV Constituents					
Antimony, Sb	ug/L	2 U	NA	2 U	NA
Arsenic, As	ug/L	5 U	NA	1.3 J	NA
Barium, Ba	ug/L	37	NA	37	NA
Beryllium, Be	ug/L	1 U	NA	1 U	NA
Cadmium, Cd	ug/L	1 U	NA	1 U	NA
Chromium, Cr	ug/L	2 U	NA	5 U	NA
Cobalt, Co	ug/L	7.2	NA	6.7	NA
Fluoride, F	mg/L	0.14	NA	0.16	NA
Lithium, Li	mg/L	0.0044 J	NA	0.0049 J	NA
Lead, Pb	ug/L	1 U	NA	1 U	NA
Mercury, Hg	ug/L	0.2 U	NA	0.2 U	NA
Molybdenum, Mo	ug/L	5 U	NA	5 U	NA
Radium 226 & 228 (combined)	pCi/L	0.307 U	NA	5 U	NA
Selenium, Se	ug/L	5 U	NA	5 U	NA
Thallium, Tl	ug/L	1 U	NA	1 U	NA

Notes:
NA: Sampling not required for this parameter.

KC-15-06
SUMMARY OF 2021 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Mar-21	Sep-21	Dec-21
Appendix III Constituents				
Boron, B	mg/L	0.43	0.45	NA
Calcium, Ca	mg/L	90	100	NA
Chloride, Cl	mg/L	36	41	27
Fluoride, F	mg/L	0.089	0.14	NA
pH	s.u.	6.17	6.89	NA
Sulfate, SO4	mg/L	170	190	NA
Total Dissolved Solids (TDS)	mg/L	470	520	NA
Appendix IV Constituents				
Antimony, Sb	ug/L	2 U	2 U	NA
Arsenic, As	ug/L	0.92 J	6.2	NA
Barium, Ba	ug/L	83	150	NA
Beryllium, Be	ug/L	1 U	1 U	NA
Cadmium, Cd	ug/L	1 U	1 U	NA
Chromium, Cr	ug/L	2 U	5 U	NA
Cobalt, Co	ug/L	3.4	1.6	NA
Fluoride, F	mg/L	0.089	0.14	NA
Lithium, Li	mg/L	0.0038 J	0.0043 J	NA
Lead, Pb	ug/L	1 U	1 U	NA
Mercury, Hg	ug/L	0.2 U	0.2 U	NA
Molybdenum, Mo	ug/L	5 U	5 U	NA
Radium 226 & 228 (combined)	pCi/L	0.289 U	5 U	NA
Selenium, Se	ug/L	5 U	5 U	NA
Thallium, Tl	ug/L	1 U	1 U	NA

Notes:
NA: Sampling not required for this parameter.

KC-15-07
SUMMARY OF 2021 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Mar-21	Jun-21	Sep-21	Dec-21
Appendix III Constituents					
Boron, B	mg/L	0.11	NA	0.11	NA
Calcium, Ca	mg/L	70	NA	70	NA
Chloride, Cl	mg/L	31	NA	32	NA
Fluoride, F	mg/L	0.056	NA	0.071	NA
pH	s.u.	6.38	NA	6.61	NA
Sulfate, SO4	mg/L	48	NA	64	NA
Total Dissolved Solids (TDS)	mg/L	360	NA	330	NA
Appendix IV Constituents					
Antimony, Sb	ug/L	2 U	NA	2 U	NA
Arsenic, As	ug/L	180	96	110	43
Barium, Ba	ug/L	550	NA	460	NA
Beryllium, Be	ug/L	1 U	NA	1 U	NA
Cadmium, Cd	ug/L	1 U	NA	1 U	NA
Chromium, Cr	ug/L	2 U	NA	5 U	NA
Cobalt, Co	ug/L	0.21 J	NA	0.48 J	NA
Fluoride, F	mg/L	0.056	NA	0.071	NA
Lithium, Li	mg/L	0.0032 J	NA	0.0038 J	NA
Lead, Pb	ug/L	1 U	NA	1 U	NA
Mercury, Hg	ug/L	0.2 U	NA	0.2 U	NA
Molybdenum, Mo	ug/L	1.9 J	NA	5 U	NA
Radium 226 & 228 (combined)	pCi/L	2.02	NA	2.31	NA
Selenium, Se	ug/L	5 U	NA	5 U	NA
Thallium, Tl	ug/L	0.33 J	NA	1 U	NA

Notes:
NA: Sampling not required for this parameter.

KC-15-08
SUMMARY OF 2021 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Mar-21	Jun-21	Sep-21	Dec-21
Appendix III Constituents					
Boron, B	mg/L	0.55	NA	0.67	0.31
Calcium, Ca	mg/L	190	200	200	63
Chloride, Cl	mg/L	44	41	44	31
Fluoride, F	mg/L	0.12	NA	0.14	NA
pH	s.u.	6.71	NA	7.04	NA
Sulfate, SO4	mg/L	540	520	620	360
Total Dissolved Solids (TDS)	mg/L	1000	1000	1100	610
Appendix IV Constituents					
Antimony, Sb	ug/L	2 U	NA	2 U	NA
Arsenic, As	ug/L	8.7	NA	13	5.1
Barium, Ba	ug/L	48	NA	47	NA
Beryllium, Be	ug/L	1 U	NA	1 U	NA
Cadmium, Cd	ug/L	1 U	NA	1 U	NA
Chromium, Cr	ug/L	2 U	NA	5 U	NA
Cobalt, Co	ug/L	5.5	NA	4.2	NA
Fluoride, F	mg/L	0.12	NA	0.14	NA
Lithium, Li	mg/L	0.01	NA	0.0073 J	NA
Lead, Pb	ug/L	1 U	NA	1 U	NA
Mercury, Hg	ug/L	0.2 U	NA	0.2 U	NA
Molybdenum, Mo	ug/L	5 U	NA	5 U	NA
Radium 226 & 228 (combined)	pCi/L	0.101 U	NA	1.45	NA
Selenium, Se	ug/L	5 U	NA	5 U	NA
Thallium, Tl	ug/L	1 U	NA	1 U	NA

Notes:
NA: Sampling not required for this parameter.

KC-19-27
SUMMARY OF 2021 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Mar-21	Sep-21
Appendix IV Constituents			
Arsenic, As	ug/L	5.7	8.8

KC-19-28
SUMMARY OF 2021 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Mar-21	Sep-21
Appendix IV Constituents			
Arsenic, As	ug/L	5 U	0.83 J

KC-19-29
SUMMARY OF 2021 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Mar-21	Sep-21
Appendix IV Constituents			
Arsenic, As	ug/L	5 U	1.2 J

KC-15-09
SUMMARY OF 2021 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Mar-21	Sep-21
Appendix III Constituents			
Boron, B	mg/L	0.1 U	0.1 U
Calcium, Ca	mg/L	74	69
Chloride, Cl	mg/L	12	13
Fluoride, F	mg/L	0.21	0.22
pH	s.u.	6.45	6.39
Sulfate, SO4	mg/L	61	63
Total Dissolved Solids (TDS)	mg/L	310	310
Appendix IV Constituents			
Antimony, Sb	ug/L	2 U	2 U
Arsenic, As	ug/L	0.89 J	1.4 J
Barium, Ba	ug/L	27	29
Beryllium, Be	ug/L	1 U	1 U
Cadmium, Cd	ug/L	1 U	1 U
Chromium, Cr	ug/L	2.1	5 U
Cobalt, Co	ug/L	2	2.1
Fluoride, F	mg/L	0.21	0.22
Lithium, Li	mg/L	0.003 J	0.0058 J
Lead, Pb	ug/L	1 U	1 U
Mercury, Hg	ug/L	0.2 U	0.2 U
Molybdenum, Mo	ug/L	5 U	5 U
Radium 226 & 228 (combined)	pCi/L	0.354 U	5 U
Selenium, Se	ug/L	5 U	5 U
Thallium, Tl	ug/L	1 U	1 U

KC-15-10
SUMMARY OF 2021 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Mar-21	Sep-21
Appendix III Constituents			
Boron, B	mg/L	0.1 U	0.1 U
Calcium, Ca	mg/L	56	60
Chloride, Cl	mg/L	10	10
Fluoride, F	mg/L	0.21	0.22
pH	s.u.	6.28	6.14
Sulfate, SO4	mg/L	68	70
Total Dissolved Solids (TDS)	mg/L	300	270
Appendix IV Constituents			
Antimony, Sb	ug/L	2 U	2 U
Arsenic, As	ug/L	2 J	1 J
Barium, Ba	ug/L	33	31
Beryllium, Be	ug/L	0.57 J	1 U
Cadmium, Cd	ug/L	1 U	1 U
Chromium, Cr	ug/L	2.3	5 U
Cobalt, Co	ug/L	1.1	1.3
Fluoride, F	mg/L	0.21	0.22
Lithium, Li	mg/L	0.0053 J	0.0065 J
Lead, Pb	ug/L	1 U	1 U
Mercury, Hg	ug/L	0.2 U	0.2 U
Molybdenum, Mo	ug/L	5 U	5 U
Radium 226 & 228 (combined)	pCi/L	0.77	0.572
Selenium, Se	ug/L	5 U	5 U
Thallium, Tl	ug/L	0.64 J	0.49 J

KC-15-11
SUMMARY OF 2021 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Mar-21	Sep-21
Appendix III Constituents			
Boron, B	mg/L	0.023 J	0.1 U
Calcium, Ca	mg/L	62	56
Chloride, Cl	mg/L	11	12
Fluoride, F	mg/L	0.2	0.2
pH	s.u.	6.24	6.08
Sulfate, SO4	mg/L	79	83
Total Dissolved Solids (TDS)	mg/L	300	280
Appendix IV Constituents			
Antimony, Sb	ug/L	2 U	2 U
Arsenic, As	ug/L	5 U	2.6 J
Barium, Ba	ug/L	27	36
Beryllium, Be	ug/L	1 U	1 U
Cadmium, Cd	ug/L	1 U	1 U
Chromium, Cr	ug/L	2.1	5 U
Cobalt, Co	ug/L	1	1.1
Fluoride, F	mg/L	0.2	0.2
Lithium, Li	mg/L	0.0073 J	0.0062 J
Lead, Pb	ug/L	1 U	1 U
Mercury, Hg	ug/L	0.2 U	0.2 U
Molybdenum, Mo	ug/L	5 U	5 U
Radium 226 & 228 (combined)	pCi/L	0.401 U	1
Selenium, Se	ug/L	5 U	5 U
Thallium, Tl	ug/L	1 U	1 U

KC-15-12
SUMMARY OF 2021 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Mar-21	Sep-21
Appendix III Constituents			
Boron, B	mg/L	0.064 J	0.057 J
Calcium, Ca	mg/L	84	83
Chloride, Cl	mg/L	11	14
Fluoride, F	mg/L	0.12	0.14
pH	s.u.	6.73	6.64
Sulfate, SO4	mg/L	61	73
Total Dissolved Solids (TDS)	mg/L	300	360
Appendix IV Constituents			
Antimony, Sb	ug/L	2 U	2 U
Arsenic, As	ug/L	5 U	1 J
Barium, Ba	ug/L	73	78
Beryllium, Be	ug/L	1 U	1 U
Cadmium, Cd	ug/L	1 U	1 U
Chromium, Cr	ug/L	2.4	5 U
Cobalt, Co	ug/L	0.36 J	0.58 J
Fluoride, F	mg/L	0.12	0.14
Lithium, Li	mg/L	0.0052 J	0.0038 J
Lead, Pb	ug/L	1 U	1 U
Mercury, Hg	ug/L	0.2 U	0.2 U
Molybdenum, Mo	ug/L	5 U	5 U
Radium 226 & 228 (combined)	pCi/L	0.201 U	1.66
Selenium, Se	ug/L	5 U	5 U
Thallium, Tl	ug/L	1 U	1 U

KC-15-13
SUMMARY OF 2021 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Mar-21	Sep-21
Appendix III Constituents			
Boron, B	mg/L	3.8	4.3
Calcium, Ca	mg/L	80	85
Chloride, Cl	mg/L	47	60
Fluoride, F	mg/L	0.085	0.089
pH	s.u.	5.91	5.75
Sulfate, SO4	mg/L	330	350
Total Dissolved Solids (TDS)	mg/L	630	670
Appendix IV Constituents			
Antimony, Sb	ug/L	2 U	2 U
Arsenic, As	ug/L	0.83 J	1.5 J
Barium, Ba	ug/L	44	58
Beryllium, Be	ug/L	1 U	1 U
Cadmium, Cd	ug/L	1 U	1 U
Chromium, Cr	ug/L	2	5 U
Cobalt, Co	ug/L	8.2	12
Fluoride, F	mg/L	0.085	0.089
Lithium, Li	mg/L	0.011	0.011
Lead, Pb	ug/L	1 U	1 U
Mercury, Hg	ug/L	0.2 U	0.2 U
Molybdenum, Mo	ug/L	5 U	5 U
Radium 226 & 228 (combined)	pCi/L	0.433 U	1.08
Selenium, Se	ug/L	5 U	5 U
Thallium, Tl	ug/L	1 U	1 U

KC-15-14
SUMMARY OF 2021 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Mar-21	Sep-21
Appendix III Constituents			
Boron, B	mg/L	11	11
Calcium, Ca	mg/L	72	71
Chloride, Cl	mg/L	55	60
Fluoride, F	mg/L	0.14	0.16
pH	s.u.	6.28	6.11
Sulfate, SO4	mg/L	190	220
Total Dissolved Solids (TDS)	mg/L	440	520
Appendix IV Constituents			
Antimony, Sb	ug/L	2 U	2 U
Arsenic, As	ug/L	1.1 J	2.3 J
Barium, Ba	ug/L	39	35
Beryllium, Be	ug/L	1 U	1 U
Cadmium, Cd	ug/L	1 U	1 U
Chromium, Cr	ug/L	2.3	5 U
Cobalt, Co	ug/L	3.2	3.3
Fluoride, F	mg/L	0.14	0.16
Lithium, Li	mg/L	0.021	0.018
Lead, Pb	ug/L	1 U	1 U
Mercury, Hg	ug/L	0.2 U	0.2 U
Molybdenum, Mo	ug/L	5 U	5 U
Radium 226 & 228 (combined)	pCi/L	0.653	1.33
Selenium, Se	ug/L	5 U	5 U
Thallium, Tl	ug/L	1 U	1 U

KC-15-15
SUMMARY OF 2021 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Mar-21	Sep-21
Appendix III Constituents			
Boron, B	mg/L	14	14
Calcium, Ca	mg/L	75	76
Chloride, Cl	mg/L	55	63
Fluoride, F	mg/L	0.089	0.1
pH	s.u.	5.5	5.31
Sulfate, SO4	mg/L	260	240
Total Dissolved Solids (TDS)	mg/L	490	540
Appendix IV Constituents			
Antimony, Sb	ug/L	2 U	2 U
Arsenic, As	ug/L	5 U	5 U
Barium, Ba	ug/L	22	19
Beryllium, Be	ug/L	1 U	1 U
Cadmium, Cd	ug/L	0.84 J	1
Chromium, Cr	ug/L	2 U	5 U
Cobalt, Co	ug/L	14	13
Fluoride, F	mg/L	0.089	0.1
Lithium, Li	mg/L	0.021	0.022
Lead, Pb	ug/L	1 U	1 U
Mercury, Hg	ug/L	0.2 U	0.2 U
Molybdenum, Mo	ug/L	5 U	5 U
Radium 226 & 228 (combined)	pCi/L	0.253 U	1.13
Selenium, Se	ug/L	5 U	5 U
Thallium, Tl	ug/L	1 U	1 U

KC-15-16
SUMMARY OF 2021 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Mar-21	Sep-21
Appendix III Constituents			
Boron, B	mg/L	8.1	10
Calcium, Ca	mg/L	150	200
Chloride, Cl	mg/L	78	96
Fluoride, F	mg/L	0.04 J	0.051
pH	s.u.	6.15	5.92
Sulfate, SO4	mg/L	480	670
Total Dissolved Solids (TDS)	mg/L	870	1100
Appendix IV Constituents			
Antimony, Sb	ug/L	2 U	2 U
Arsenic, As	ug/L	0.85 J	1.5 J
Barium, Ba	ug/L	43	51
Beryllium, Be	ug/L	1 U	1 U
Cadmium, Cd	ug/L	1 U	0.4 J
Chromium, Cr	ug/L	2 U	5 U
Cobalt, Co	ug/L	4.2	6
Fluoride, F	mg/L	0.04 J	0.051
Lithium, Li	mg/L	0.01	0.014
Lead, Pb	ug/L	1 U	1 U
Mercury, Hg	ug/L	0.2 U	0.2 U
Molybdenum, Mo	ug/L	5 U	5 U
Radium 226 & 228 (combined)	pCi/L	0.136 U	0.618
Selenium, Se	ug/L	5 U	5 U
Thallium, Tl	ug/L	1 U	1 U

KC-15-17
SUMMARY OF 2021 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Mar-21	Sep-21
Appendix III Constituents			
Boron, B	mg/L	19	19
Calcium, Ca	mg/L	310	310
Chloride, Cl	mg/L	130	160
Fluoride, F	mg/L	0.043 J	0.054
pH	s.u.	6.19	6.15
Sulfate, SO4	mg/L	1000	1100
Total Dissolved Solids (TDS)	mg/L	1600	1800
Appendix IV Constituents			
Antimony, Sb	ug/L	2 U	2 U
Arsenic, As	ug/L	1.6 J	2.3 J
Barium, Ba	ug/L	27	26
Beryllium, Be	ug/L	1 U	1 U
Cadmium, Cd	ug/L	0.5 J	0.65 J
Chromium, Cr	ug/L	1.4 J	5 U
Cobalt, Co	ug/L	29	31
Fluoride, F	mg/L	0.043 J	0.054
Lithium, Li	mg/L	0.023	0.025
Lead, Pb	ug/L	1 U	1 U
Mercury, Hg	ug/L	0.2 U	0.2 U
Molybdenum, Mo	ug/L	5 U	1.1 J
Radium 226 & 228 (combined)	pCi/L	0.588	1.3
Selenium, Se	ug/L	5 U	5 U
Thallium, Tl	ug/L	1 U	0.43 J

KC-15-18
SUMMARY OF 2021 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Mar-21	Jun-21	Sep-21	Dec-21
Appendix III Constituents					
Boron, B	mg/L	15	NA	14	NA
Calcium, Ca	mg/L	150	150	150	120
Chloride, Cl	mg/L	99	100	110	84
Fluoride, F	mg/L	0.074	NA	0.086	NA
pH	s.u.	5.95	NA	5.88	NA
Sulfate, SO4	mg/L	520	530	580	440
Total Dissolved Solids (TDS)	mg/L	1000	950	1100	850
Appendix IV Constituents					
Antimony, Sb	ug/L	2 U	NA	2 U	NA
Arsenic, As	ug/L	1.6 J	NA	2.2 J	NA
Barium, Ba	ug/L	26	NA	23	NA
Beryllium, Be	ug/L	1 U	NA	1 U	NA
Cadmium, Cd	ug/L	0.3 J	NA	0.37 J	NA
Chromium, Cr	ug/L	1.5 J	NA	5 U	NA
Cobalt, Co	ug/L	9.8	NA	11	NA
Fluoride, F	mg/L	0.074	NA	0.086	NA
Lithium, Li	mg/L	0.034	NA	0.041	NA
Lead, Pb	ug/L	1 U	NA	1 U	NA
Mercury, Hg	ug/L	0.2 U	NA	0.2 U	NA
Molybdenum, Mo	ug/L	5 U	NA	5 U	NA
Radium 226 & 228 (combined)	pCi/L	0.536	NA	0.48	NA
Selenium, Se	ug/L	5 U	NA	5 U	NA
Thallium, Tl	ug/L	1 U	NA	1 U	NA

Notes:
NA: Sampling not required for this parameter.

KC-15-19
SUMMARY OF 2021 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Mar-21	Jun-21	Sep-21	Dec-21
Appendix III Constituents					
Boron, B	mg/L	16	NA	16	NA
Calcium, Ca	mg/L	150	150	150	120
Chloride, Cl	mg/L	47	NA	49	NA
Fluoride, F	mg/L	0.098	NA	0.12	NA
pH	s.u.	6.16	NA	6.15	NA
Sulfate, SO4	mg/L	580	590	600	390
Total Dissolved Solids (TDS)	mg/L	1000	950	1000	700
Appendix IV Constituents					
Antimony, Sb	ug/L	2 U	NA	2 U	NA
Arsenic, As	ug/L	5 U	NA	5 U	NA
Barium, Ba	ug/L	18	NA	17	NA
Beryllium, Be	ug/L	1 U	NA	1 U	NA
Cadmium, Cd	ug/L	0.42 J	NA	0.47 J	NA
Chromium, Cr	ug/L	2 U	NA	5 U	NA
Cobalt, Co	ug/L	12	NA	12	13
Fluoride, F	mg/L	0.098	NA	0.12	NA
Lithium, Li	mg/L	0.017	NA	0.018	NA
Lead, Pb	ug/L	1 U	NA	1 U	NA
Mercury, Hg	ug/L	0.2 U	NA	0.2 U	NA
Molybdenum, Mo	ug/L	5 U	NA	5 U	NA
Radium 226 & 228 (combined)	pCi/L	0.42	NA	1.24	NA
Selenium, Se	ug/L	5 U	NA	5 U	NA
Thallium, Tl	ug/L	1 U	NA	1 U	NA

Notes:
NA: Sampling not required for this parameter.

KC-15-20
SUMMARY OF 2021 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Mar-21	Jun-21	Sep-21	Dec-21
Appendix III Constituents					
Boron, B	mg/L	11	NA	11	NA
Calcium, Ca	mg/L	170	200	170	160
Chloride, Cl	mg/L	46	NA	47	NA
Fluoride, F	mg/L	0.098	NA	0.1	NA
pH	s.u.	6.31	NA	6.31	NA
Sulfate, SO4	mg/L	510	510	520	450
Total Dissolved Solids (TDS)	mg/L	940	420	910	870
Appendix IV Constituents					
Antimony, Sb	ug/L	2 U	NA	2 U	NA
Arsenic, As	ug/L	1.8 J	NA	1.9 J	NA
Barium, Ba	ug/L	30	NA	27	NA
Beryllium, Be	ug/L	1 U	NA	1 U	NA
Cadmium, Cd	ug/L	1 U	NA	1 U	NA
Chromium, Cr	ug/L	2 U	NA	5 U	NA
Cobalt, Co	ug/L	3.5	NA	5.3	NA
Fluoride, F	mg/L	0.098	NA	0.1	NA
Lithium, Li	mg/L	0.015	NA	0.015	NA
Lead, Pb	ug/L	1 U	NA	1 U	NA
Mercury, Hg	ug/L	0.2 U	NA	0.2 U	NA
Molybdenum, Mo	ug/L	5 U	NA	1.6 J	NA
Radium 226 & 228 (combined)	pCi/L	0.351 U	NA	2.5	NA
Selenium, Se	ug/L	5 U	NA	5 U	NA
Thallium, Tl	ug/L	1 U	NA	1 U	NA

Notes:
NA: Sampling not required for this parameter.

KC-15-21
SUMMARY OF 2021 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Mar-21	Jun-21	Sep-21	Dec-21
Appendix III Constituents					
Boron, B	mg/L	4.8	NA	4.5	NA
Calcium, Ca	mg/L	180	160	190	240
Chloride, Cl	mg/L	26	NA	26	NA
Fluoride, F	mg/L	0.23	NA	0.31	NA
pH	s.u.	6.31	NA	6.57	NA
Sulfate, SO4	mg/L	420	NA	490	NA
Total Dissolved Solids (TDS)	mg/L	810	NA	850	1000
Appendix IV Constituents					
Antimony, Sb	ug/L	2 U	NA	2 U	NA
Arsenic, As	ug/L	0.94 J	NA	1.8 J	NA
Barium, Ba	ug/L	18	NA	22	NA
Beryllium, Be	ug/L	1 U	NA	1 U	NA
Cadmium, Cd	ug/L	1 U	NA	1 U	NA
Chromium, Cr	ug/L	2 U	NA	5 U	NA
Cobalt, Co	ug/L	8.2	NA	5.1	NA
Fluoride, F	mg/L	0.23	NA	0.31	NA
Lithium, Li	mg/L	0.0064 J	NA	0.0046 J	NA
Lead, Pb	ug/L	1 U	NA	1 U	NA
Mercury, Hg	ug/L	0.2 U	NA	0.2 U	NA
Molybdenum, Mo	ug/L	5 U	NA	5 U	NA
Radium 226 & 228 (combined)	pCi/L	-.0357 U	NA	5 U	NA
Selenium, Se	ug/L	5 U	NA	5 U	NA
Thallium, Tl	ug/L	1 U	NA	1 U	NA

Notes:
NA: Sampling not required for this parameter.

KC-15-22
SUMMARY OF 2021 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Mar-21	Sep-21
Appendix III Constituents			
Boron, B	mg/L	0.12	0.3
Calcium, Ca	mg/L	100	110
Chloride, Cl	mg/L	13	14
Fluoride, F	mg/L	0.14	0.12
pH	s.u.	6.87	6.92
Sulfate, SO4	mg/L	78	100
Total Dissolved Solids (TDS)	mg/L	390	410
Appendix IV Constituents			
Antimony, Sb	ug/L	2 U	2 U
Arsenic, As	ug/L	3.7 J	3.6 J
Barium, Ba	ug/L	63	73
Beryllium, Be	ug/L	0.37 J	1 U
Cadmium, Cd	ug/L	1 U	1 U
Chromium, Cr	ug/L	2 U	5 U
Cobalt, Co	ug/L	0.26 J	0.19 J
Fluoride, F	mg/L	0.14	0.12
Lithium, Li	mg/L	0.007 J	0.0053 J
Lead, Pb	ug/L	1 U	1 U
Mercury, Hg	ug/L	0.2 U	0.2 U
Molybdenum, Mo	ug/L	5 U	5 U
Radium 226 & 228 (combined)	pCi/L	0.484	0.528
Selenium, Se	ug/L	5 U	5 U
Thallium, Tl	ug/L	0.31 J	1 U