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

WRITER'S DIRECT DIAL NO:
740-289-7267

March 2, 2018

Mr. Bruno Pigott, Commissioner
Indiana Department of Environmental Management
100 N. Senate Avenue
Mail Code 50-01
Indianapolis, IN 46204-2251

Dear Mr. Pigott:

Re: Indiana-Kentucky Electric Corporation - Clifty Creek Station
Annual CCR Groundwater Monitoring and Corrective Actions Report

As required by 40 CFR 257.106(h)(1), the Indiana-Kentucky Electric Corporation (IKEC) is providing notification to the Commissioner (State Director) of the Indiana Department of Environmental Management that the first Annual CCR Groundwater Monitoring and Corrective Actions report has been completed in compliance with 40 CFR 257.90(e) for IKEC's Clifty 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 http://www.ovec.com/CCRCompliance.php

If you have any questions or require any additional information, please call me at (740) 289-7267.

Sincerely,

Gabriel S. Coriell

Gabriel S. Coriell
Environmental Services Manager

GSC:gln

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

January 31, 2018

File: 175534018, 200.201

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

Reference: 2017 Annual Groundwater Monitoring and Corrective Action Report
EPA Final Coal Combustion Residuals (CCR) Rule
Clifty Creek Generating Station
Madison, Indiana

Dear Mr. Coriell,

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 Indiana-Kentucky Electric Corporation (IKEC), this applies to the Clifty Creek Station's West Boiler Slag Pond, Landfill Runoff Collection 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: 2017 Annual Groundwater Monitoring and Corrective Action Report
EPA Final Coal Combustion Residuals (CCR) Rule
Clifty Creek Generating Station
Madison, Indiana

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.

IKEC has retained Applied Geology and Environmental Science, Inc. of Clinton, Pennsylvania (AGES) to perform the Clifty Creek Station's groundwater monitoring and corrective action support under the EPA Final CCR Rule. The 2017 CCR Regulation Groundwater Monitoring and Corrective Action Report (GWCAR) was prepared by AGES to present the annual groundwater monitoring at the West Boiler Slag Pond, Landfill Runoff Collection Pond, and CCR Landfill of the Clifty Creek Station. Stantec Consulting Services Inc. (Stantec) has reviewed AGES (2018), and it meets the requirements specified in 40 CFR 257.90(e). In accordance with the EPA Final CCR Rule, the eight rounds of groundwater sampling presented in AGES (2018) will be used to establish baseline CCR constituent concentrations associated within each operating unit network during 2018 as specified in 40 CFR 257.93.

Please contact us with any questions or concerns. We appreciate the opportunity to continue to work with the Clifty Creek Generating Station and the Indiana-Kentucky Electric Corporation.

Regards,

Stantec Consulting Services Inc.

Jacqueline S. Harmon

Jacqueline S. Harmon, P.E.
Senior Associate
Phone: (513) 842-8200 ext 8220
Fax: (513) 842-8250
Jacqueline.Harmon@stantec.com

Attachment: AGES (2018). Coal Combustion Residuals Regulation Groundwater Monitoring and Corrective Action Report, Indiana-Kentucky Electric Corporation. Clifty Creek Station, Madison, Indiana, January.

c. Stan Harris, John Griggs, Chris LaLonde

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AGES
Applied Geology And Environmental Science, Inc.

2402 Hookstown Grade Road, Suite 200
Clinton, PA 15026
www.appliedgeology.net
412. 264. 6453
412. 264. 6567

COAL COMBUSTION RESIDUALS REGULATION GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT

INDIANA-KENTUCKY ELECTRIC CORPORATION
CLIFTY CREEK STATION
MADISON, INDIANA

JANUARY 2018

Prepared for:

INDIANA-KENTUCKY ELECTRIC CORPORATION (IKEC)

By:

APPLIED GEOLOGY AND ENVIRONMENTAL SCIENCE, INC.

COAL COMBUSTION RESIDUALS REGULATION
GROUNDWATER MONITORING AND
CORRECTIVE ACTION REPORT
INDIANA-KENTUCKY ELECTRIC CORPORATION
CLIFTY CREEK STATION
MADISON, INDIANA

JANUARY 2018

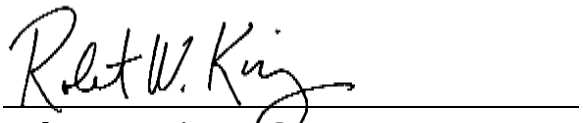
Prepared for:

INDIANA-KENTUCKY ELECTRIC CORPORATION (IKEC)

Prepared By:

Applied Geology and Environmental Science, Inc.

Diane E. Miller, P.G.
Senior Geologist



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

COAL COMBUSTION RESIDUALS REGULATION
GROUNDWATER MONITORING AND
CORRECTIVE ACTION REPORT
INDIANA-KENTUCKY ELECTRIC CORPORATION
CLIFTY CREEK STATION
MADISON, INDIANA

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

COAL COMBUSTION RESIDUALS REGULATION
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LIST OF ACRONYMS

AGES	Applied Geology and Environmental Science, Inc.
CCR	Coal Combustion Residuals
GMPP	Groundwater Monitoring Program Plan
IDEM	Indiana Department of Environmental Management
IKEC	Indiana-Kentucky Electric Corporation
LRCP	Landfill Runoff Collection Pond
MW	Megawatt
OVEC	Ohio Valley Electric Corporation
RCRA	Resource Conservation and Recovery Act
SAP	Statistical Analysis Plan
SSI	Statistically Significant Increase
Stantec	Stantec Consulting Services, Inc.
UPL	Upper Prediction Limit
U.S. EPA	United States Environmental Protection Agency
WBSP	West Boiler Slag Pond

COAL COMBUSTION RESIDUALS REGULATION
GROUNDWATER MONITORING AND
CORRECTIVE ACTION REPORT
INDIANA-KENTUCKY ELECTRIC CORPORATION
CLIFTY CREEK STATION
MADISON, INDIANA

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. The only compliance mechanism is for a state or citizen group to bring a RCRA suit in federal district court against any facility that is alleged to be in non-compliance with the new requirements.

All CCR landfills and CCR surface impoundments are subject to new, and typically more stringent than current state requirements for groundwater monitoring and, if necessary, corrective action. Per §257.90(b)(1), within 30 months after the date of publication (no later than October 17, 2017) in the Federal Register, all existing CCR landfills and existing CCR surface impoundments must be in compliance with the following groundwater monitoring requirements:

(i) Install the groundwater monitoring system as required by §257.91: The groundwater monitoring systems at all of the CCR units at the Clifty Creek Plant were installed in compliance with the CCR Rule and details of the installation are presented in the *Monitoring Well Installation Report* (AGES, 2016).

(ii) Develop the groundwater sampling and analysis program to include selection of the statistical procedures to be used for evaluating groundwater monitoring data as required by §257.93: Details regarding groundwater sampling procedures are presented in the *Groundwater Monitoring Program Plan* (GMPP) (AGES, 2016). Statistical evaluation of groundwater data will be conducted using a statistical method as specified in §257.93(f), and which meets the performance standards specified in §257.93(g) of the CCR Rule.

(iii) Initiate the detection monitoring program to include obtaining a minimum of eight independent samples for each background and downgradient well as required by §257.94(b): Between January 2016 and September 2017, nine (9) independent groundwater samples were collected from each background and downgradient monitoring well at each CCR unit. The collection of these samples from each CCR unit is discussed in the following sections of this report. The analytical data from these nine (9) samples will be used to establish site background conditions.

(iv) Begin evaluating the groundwater monitoring data for statistically significant increases over background levels for the constituents listed in Appendix III of this part as required by §257.94: In accordance with the U.S. EPA's Unified Guidance (U.S. EPA, 2009), Upper Prediction Limits (UPLs) with retesting is the statistical method that will be used to identify Statistically Significant Increased (SSIs) over background for Appendix III constituents during detection monitoring. The data presented in this report will be used to calculate UPLs. However, additional future data acquired during the semi-annual sampling events beginning in Spring of 2018, and subsequent retesting sampling events, if necessary, will be required to identify SSIs.

This Annual Groundwater Monitoring and Corrective Action Report has been prepared in accordance with §257.90(e) of the CCR Rule which states: **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. For purposes of this section, the owner or operator has prepared the annual report when the report is placed in the facility's operating record as required by § 257.105(h)(1). 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: Maps of each CCR unit including all background (or upgradient) and downgradient monitoring wells and well identification numbers are included in this report.

(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: Details regarding the installation of all groundwater monitoring wells for each monitoring system at each CCR unit are included in the *Monitoring Well Installation Report* (AGES, 2016). Summaries of the monitoring wells included in each CCR unit groundwater monitoring system are included in the following sections of this report.

(3) 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: Tables summarizing all groundwater samples collected from each CCR unit between January 2016 and August 2017 are included in this report.

(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 addition to identifying the constituent(s) detected at a statistically significant increase over background levels): In accordance with the U.S. EPA's Unified Guidance (U.S. EPA, 2009), UPLs with retesting is the statistical method that will be used to identify SSIs over background for Appendix III constituents during detection monitoring. The data presented in this report will be used to calculate UPLs. However, additional future data, acquired during the semi-annual sampling events (beginning in Spring of 2018), and subsequent retesting sampling events, if necessary, will be required to identify SSIs.

(5) Other information required to be included in the annual report as specified in §§ 257.90 through 257.98: Other information required is included in subsequent sections of this report.

2.0 BACKGROUND

The Clifty Creek Station, located in Madison, Indiana, is a 1,304-megawatt (MW) coal-fired generating plant operated by the Indiana-Kentucky Electric Corporation (IKEC), a subsidiary of the Ohio Valley Electric Company (OVEC). The Clifty Creek Station has six (6) 217.26-MW generating units and has been in operation since 1955. Beginning in 1955, ash products were sluiced to disposal ponds located in the plant site. During the course of plant operations, CCRs have been managed and disposed of in various units at the station. There are three (3) CCR units at the Clifty Creek Station (Figure 1):

- Type I Residual Waste Landfill (Landfill);
- Landfill Runoff Collection Pond (LRCP) and,
- West Boiler Slag Pond (WBSP).

In March 2015, the IKEC contracted with Applied Geology and Environmental Science (AGES), Inc. to administer the CCR groundwater monitoring program. AGES identified upgrades to the groundwater monitoring program for the Clifty Creek Station located in Madison, Indiana that would be necessary for compliance with the CCR Rule. Based on a review of available site data and the CCR Rule, AGES, IKEC, and staff from Stantec Consulting Services, Inc. (Stantec) worked together to develop a detailed scope of work and schedule for the groundwater monitoring system upgrades. Monitoring well installation and development was conducted from November 2015 through January 2016. Details of this work are presented in the *Well Installation Report* (AGES, 2016).

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 the previous year, describes any problems encountered, discusses actions to resolve the problems, and project key activities for the upcoming year.

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 TYPE I RESIDUAL WASTE LANDFILL AND LANDFILL RUNOFF COLLECTION POND

The Landfill and LRCP occupy an approximately 200-acre area situated within an eroded bedrock channel (Figures 1, 2 and 3). Beginning in 1955, ash products were sluiced to disposal ponds located in the plant site. To allow for more disposal capacity, an on-site fly ash pond was developed into a Type III landfill in 1988. All required permits for the Landfill were obtained from the Indiana Department of Environmental Management (IDEM) and the Landfill went operational in 1991. In March 1994, IDEM approved a pH variance for the disposal of low-sulfur coal ash in the fly ash landfill. Emplacement of low-sulfur coal ash in the Landfill began in January 1995 and has continued to date. In April, 2007, IKEC submitted a permit application to IDEM to upgrade the former Type III landfill to a Type I landfill. In 2013, IDEM issued a renewed permit and approved IKEC's request to upgrade the landfill to a Type I landfill.

The Landfill consists of approximately 109 acres, and has been approved by IDEM as a Type I Residual Waste Landfill. The remaining 91 acres consist of the LRCP located at the southwest end of the Landfill.

3.1 Groundwater Monitoring Network

As detailed in the *Monitoring Well Installation Report* (AGES, 2016), an aquifer does not exist beneath the Landfill and LRCP. Therefore, alluvial deposits located northeast of the Landfill and southwest of the LRCP are designated as the uppermost aquifer at the Landfill and LRCP.

IKEC installed a multiunit groundwater monitoring network to monitor groundwater around the Landfill and the LRCP in accordance with §257.91(d). Table 3-1 and Figure 2 present the construction information and locations of the monitoring wells in the Landfill and LRCP groundwater monitoring network. Groundwater in the northeastern portion of the Landfill flows toward the east/northeast while groundwater in the southwestern portion of the Landfill and LRCP flows toward the southwest.

In November 2015, the following monitoring wells were installed to form the CCR groundwater monitoring network for the Landfill and LRCP:

- CF-15-01 (downgradient – northeast end)
- CF-15-02 (downgradient – northeast end)
- CF-15-03 (downgradient – northeast end)
- CF-15-04 (background)
- CF-15-05 (background)
- CF-15-06 (background)
- CF-15-07 (downgradient – southwest end)
- CF-15-08 (downgradient – southwest end)
- CF-15-09 (downgradient – southwest end)

The Devils Backbone is a limestone ridge that trends northeast-southwest along the southern side of the Landfill and LRCP. This ridge acts as an impermeable barrier separating groundwater flowing beneath the Landfill and LRCP from groundwater flowing beneath the WBSP. Therefore, the upgradient WBSP wells WBSP-15-01 and WBSP-15-02 are also used as upgradient wells for the Landfill and LRCP groundwater monitoring network.

Based on groundwater levels measured from each well from January 2016 through August 2017, there is a groundwater divide located near the middle of the valley occupied by the Landfill. Groundwater in the northeast end of the Landfill flows to the northeast and groundwater in the southwest end of the Landfill and LRCP flows to the southwest toward the Ohio River. Groundwater levels measured from January 2016 through August 2017 are included in Appendix A. Groundwater flow maps for the nine (9) monitoring events completed between January 2016 and August 2017 are included in Appendix B.

3.2 Groundwater Sampling

In accordance with §257.90(b)(iii) of the CCR Rule, following the establishment of the groundwater monitoring system at the Landfill and LRCP, nine (9) independent groundwater samples were collected from each background and each downgradient monitoring well between January 2016 and August 2017. All of these groundwater samples were collected in accordance with the GMPP (AGES, 2016) to develop the background data set to be used during future semi-annual Detection Monitoring. Table 3-2 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 for all of the parameters listed in Appendix III and Appendix IV of the CCR Rule (Appendix C).

3.3 Analytical Results

In accordance with §257.93(c), groundwater elevations were measured in each well immediately prior to purging each time groundwater was sampled. Groundwater elevations were also measured in all of the monitoring wells at the Landfill and LRCP on the first day of field work for each monitoring event to avoid temporal variations in groundwater flow. These groundwater elevations were used to determine the rate and direction of groundwater flow each time groundwater was sampled. Table 3-3 summarizes the rates and direction of flow for each sampling event, and the minimum time interval between sampling events calculated per the SAP to evaluate the temporal independence of each sample.

In accordance with §257.90(b)(iii) of the CCR Rule, during each of the nine (9) monitoring events conducted between January 2016 and August 2017, groundwater samples were collected from each monitoring well and analyzed for all of the parameters listed in Appendix III and Appendix IV of the CCR Rule. Tables summarizing all of the analytical results are presented in Appendix D.

4.0 WEST BOILER SLAG POND

The WBSP currently serves as a settling facility for sluiced boiler slag produced at the plant. The pond is formed by natural grade to the north, east and west and a southern dike that runs along the bank of the Ohio River. The Devil's Backbone borders the northern side of the WBSP (Figures 1 and 3).

4.1 Groundwater Monitoring Network

An evaluation of the hydrogeology of the WBSP and identification of the uppermost aquifer is detailed in the *Monitoring Well Installation Report* (AGES, 2016). In November 2015, the following 10 groundwater monitoring wells were installed around the perimeter of the WBSP (Table 4-1 and Figure 3) to form the CCR groundwater monitoring network:

- WBSP-15-01 (Upgradient)
- WBSP-15-02 (Upgradient)
- WBSP-15-03 (Upgradient)
- WBSP-15-04 (Downgradient)
- WBSP-15-05 (Downgradient)
- WBSP-15-06 (Downgradient)
- WBSP-15-07 (Downgradient)
- WBSP-15-08 (Downgradient)
- WBSP-15-09 (Downgradient)
- WBSP-15-10 (Downgradient)

In addition to the wells listed above, monitoring wells CF-15-04, CF-15-05 and CF-15-06 are also included as background wells for the WBSP. Table 4-1 and Figure 3 present the construction information and locations of the monitoring wells in the WBSP groundwater monitoring network.

Based on groundwater levels measured from each well from January 2016 through August 2017, groundwater beneath the WBSP flows from the northwest to the southeast toward the Ohio River. Groundwater levels measured from January 2016 through August 2017 are included in Appendix A. Groundwater flow maps for the nine (9) monitoring events completed between January 2016 and August 2017 are included in Appendix B.

4.2 Groundwater Sampling

In accordance with §257.90(b)(iii) of the CCR Rule, following the establishment of the groundwater monitoring system at the WBSP, nine (9) independent groundwater samples were collected from each background and upgradient, and each downgradient monitoring well between January 2016 and August 2017. All of these groundwater samples were collected in accordance with the GMPP (AGES, 2016) to develop the background data set to be used during future semi-annual Detection Monitoring. Table 4-2 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 for all of the parameters listed in Appendix III and Appendix IV of the CCR Rule (Appendix C).

4.3 Analytical Results

In accordance with §257.93(c), groundwater elevations were measured in each well immediately prior to purging each time groundwater was sampled. Groundwater elevations were also measured in all of the monitoring wells at the WBSP on the first day of field work for each monitoring event to avoid temporal variations in groundwater flow. These groundwater elevations were used to determine the rate and direction of groundwater flow each time groundwater was sampled. Table 4-3 summarizes the rates and direction of flow for each sampling event, and the minimum time interval between sampling events calculated per the SAP to evaluate the temporal independence of each sample.

In accordance with §257.90(b)(iii) of the CCR Rule, during each of the nine (9) monitoring events conducted between January 2016 and August 2017, groundwater samples were collected from each monitoring well and analyzed for all of the parameters listed in Appendix III and Appendix IV of the CCR Rule. Tables summarizing all of the analytical results are presented in Appendix D.

5.0 PROBLEMS ENCOUNTERED

During the June 2017 monitoring event, Mercury was detected in both of the equipment blanks and in most of the samples collected from the Landfill and LRCP and from the WBSP at similar concentrations. Because 1) Mercury was detected in samples that were collected using either disposable bailers or dedicated pumps; 2) Mercury had not been detected at these concentrations in the historic samples collected from the Landfill for the IDEM monitoring program; and 3) Mercury had not been detected in groundwater sampled from the any of the CCR units prior to June 2017; it was determined that the Mercury detections were not indicative of a release. Standard corrections were applied to the affected samples resulting in all of the corrected results to be non-detect. During future monitoring events, OVEC will collect split samples from select wells to be analyzed at another analytical laboratory for Quality Assurance/Quality Control purposes.

6.0 PROJECTED ACTIVITIES FOR 2018

Detection Monitoring will begin in 2018 in accordance with the GMPP. The first semi-annual Detection Monitoring event is planned for the Spring (March or April) of 2018 and the second semi-annual Detection Monitoring event is planned for the Fall (September or October) of 2018. During the Detection Monitoring, in accordance with §257.94 of the CCR Rule, all wells within the groundwater monitoring network will be sampled and analyzed of all constituents listed in Appendix III of the CCR Rule.

In accordance with the U.S. EPA's Unified Guidance (U.S. EPA, 2009), UPLs with retesting is the statistical method that will be used to identify SSIs over background for Appendix III constituents during detection monitoring. The data presented in this report will be used to calculate UPLs. However, additional future data, acquired during the semi-annual sampling events and subsequent retesting sampling events, if necessary, will be required to identify SSIs.

7.0 REFERENCES

Applied Geology and Environmental Science, Inc. (AGES), 2006. Hydrogeologic Study Report, Clifty Creek Coal Ash Landfill, Clifty Creek Station, Madison, Indiana. November, 2006.

Applied Geology and Environmental Science, Inc. (AGES), 2016. Coal Combustion Residuals Regulation Groundwater Monitoring Program Plan, Indiana-Kentucky Electric Corporation, Clifty Creek Station, Madison, Jefferson County, Indiana. September, 2016.

Applied Geology and Environmental Science, Inc. (AGES), 2016. Coal Combustion Residuals Regulation Monitoring Well Installation Report. Indiana-Kentucky Electric Corporation, Clifty Creek Station, Madison, Jefferson County, Indiana. October, 2016.

Stantec Consulting Services, Inc. (Stantec), 2018. Coal Combustion Residuals Regulation Statistical Analysis Plan, Indiana-Kentucky Electric Corporation, Clifty Creek Station, Madison, Jefferson County, Indiana. January 2018

TABLES

TABLE 3-1
GROUNDWATER MONITORING NETWORK
TYPE I RESIDUAL WASTE LANDFILL AND LANDFILL RUNOFF COLLECTION POND
CLIFTY CREEK STATION
MADISON, INDIANA

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					
CF-15-01	Downgradient (Northeast End)	12/1/2015	450793.03	566812.11	503.51	506.10	491.51	481.51	24.59
CF-15-02	Downgradient (Northeast End)	12/1/2015	450449.42	566908.15	503.68	506.10	474.68	464.68	41.42
CF-15-03	Downgradient (Northeast End)	12/3/2015	450262.60	566915.99	506.46	508.98	479.46	469.46	39.52
CF-15-04	Background	12/3/2015	451482.81	569307.19	465.55	468.03	439.55	429.55	38.48
CF-15-05	Background	12/1/2015	447491.91	565533.64	439.85	442.58	422.85	412.85	29.73
CF-15-06	Background	11/30/2015	447026.92	565190.31	437.49	440.40	431.49	421.49	18.91
CF-15-07	Downgradient (Southwest End)	11/23/2015	443135.08	562259.25	438.61	441.11	432.61	422.61	18.50
CF-15-08	Downgradient (Southwest End)	11/19/2015	443219.57	562537.29	460.33	462.79	430.33	420.33	42.46
CF-15-09	Downgradient (Southwest End)	11/25/2015	443445.96	562871.69	456.73	459.45	447.73	442.73	16.72
WBSP-15-01	Background	11/30/2015	449072.27	566322.12	466.93	469.36	458.93	448.93	20.43
WBSP-15-02	Background	11/11/2015	449803.91	566987.30	473.83	476.76	457.83	452.83	23.93

Notes:
1. The Well locations are referenced to the North American Datum (NAD83), east zone coordinate system.
2. Elevations are referenced to the North American Vertical Datum (NAVD) 1988

Table 3-2
Clifty Creek Plant
Type I Residual Waste Landfill and Landfill Runoff Collection Pond
CCR Groundwater Monitoring Program
Summary of Measured Field Parameters
January 2016 through August 2017

Sample ID	Location	Date	Temperature	Conductivity	pH	Oxidation Reduction Potential	Dissolved Oxygen	Turbidity
CF-15-01	Northeast End	Jan-16	12.41	876	7.16	-17.3	5.48	4.98
CF-15-02	Northeast End	Jan-16	13.5	2274	6.98	-10.2	5.14	4.08
CF-15-03	Northeast End	Jan-16	12.94	1042	6.98	98.9	4.35	4.87
CF-15-04	Background	Jan-16	10.65	453	7.85	101.3	249	4.61
CF-15-05	Background	Jan-16	12.36	765	6.83	89.6	1.54	4.16
CF-15-06	Background	Jan-16	12.33	904	6.57	70.9	0.96	4.59
CF-15-07	Southwest End	Jan-16	8.95	863	7.16	-19.8	7.2	4.63
CF-15-08	Southwest End	Jan-16	12.63	749	7.37	2.1	6.18	4.32
CF-15-09	Southwest End	Jan-16	12.65	943	7.31	104.8	2.9	4.18
WBSP-15-01	Background	Jan-16	10.6	720	6.84	119.6	3.19	35.6
WBSP-15-02	Background	Jan-16	12.92	1370	7.06	102.1	6.11	4.06
CF-15-01	Northeast End	Mar-16	10.9	623	7.21	11.7	0.28	4.19
CF-15-02	Northeast End	Mar-16	13.4	1937	7.27	18.1	0.29	2.87
CF-15-03	Northeast End	Mar-16	9.15	856	7.18	8.4	1.02	4.12
CF-15-04	Background	Mar-16	7.17	404	7.84	57.5	2.41	4.76
CF-15-05	Background	Mar-16	11.47	789	5.72	70.1	4.11	4.57
CF-15-06	Background	Mar-16	10.34	806	5.67	68.4	1.92	5
CF-15-07	Southwest End	Mar-16	10.24	715	7.24	14.1	0.43	4.63
CF-15-08	Southwest End	Mar-16	13.43	6.58	7.11	24.3	0.31	17.9
CF-15-09	Southwest End	Mar-16	8.81	683	7.23	27.3	4.26	1.31
WBSP-15-01	Background	Mar-16	10.52	718	6.87	116.7	3.31	23
WBSP-15-02	Background	Mar-16	7.52	1151	7.12	50.9	6.07	4.79
CF-15-01	Northeast End	May-16	11.21	550	7.47	28.7	5.36	2.98
CF-15-02	Northeast End	May-16	14.47	1891	7.41	23.7	3.81	2.87
CF-15-03	Northeast End	May-16	15	1005	7.43	27.3	4.28	1.23
CF-15-04	Background	May-16	11.15	323	7.51	28.9	4.96	3.75
CF-15-05	Background	May-16	12.03	626	7.44	29.5	4.87	3.01
CF-15-06	Background	May-16	10.33	615	7.46	29.1	6.02	4.21
CF-15-07	Southwest End	May-16	11.41	726	7.4	29.3	3.23	
CF-15-08	Southwest End	May-16	13.59	633	7.5	23.5	4.01	17.1
CF-15-09	Southwest End	May-16	12.49	748	7.44	28	4.46	3.71
WBSP-15-01	Background	May-16	13.37	781	6.75	121.2	3.45	15.2
WBSP-15-02	Background	May-16	13.92	1132	7.13	191.5	1.2	3.53
CF-15-01	Northeast End	Jul-16	19.82	822	7.46	29.4	4.19	2.7
CF-15-02	Northeast End	Jul-16	17.74	1766	7.37	39.3	2.84	3.93
CF-15-03	Northeast End	Jul-16	22.21	1145	7.4	28.6	4.11	2.87
CF-15-04	Background	Jul-16	19.00	461	7.45	25.8	0.83	1.66
CF-15-05	Background	Jul-16	20.32	755	7.38	37.9	4.48	3.97
CF-15-06	Background	Jul-16	Dry	Dry	Dry	Dry	Dry	Dry
CF-15-07	Southwest End	Jul-16	17.54	874	7.17	37.8	3.38	4.36
CF-15-08	Southwest End	Jul-16	18.11	752	7.49	26.7	4.14	4.08
CF-15-09	Southwest End	Jul-16	16.83	968	7.48	38.6	2.21	11.82
WBSP-15-01	WBSP - Upgradient	Jul-16	19.64	1572	6.67	121.2	3.64	34
WBSP-15-02	WBSP - Upgradient	Jul-16	19.71	1730	6.99	233.1	3.62	21
CF-15-01	Northeast End	Sep-16	18.96	684	7.39	44.8	3.77	2.05
CF-15-02	Northeast End	Sep-16	17.73	1677	7.37	11.6	3.9	1.97
CF-15-03	Northeast End	Sep-16	23.47	999	7.82	24.6	3.82	2.08
CF-15-04	Background	Sep-16	20.42	397	7.27	23.9	3.64	1.68
CF-15-05	Background	Sep-16	16.6	920	7.2	-80.1	588.09	12.4
CF-15-06	Background	Sep-16	14.96	1123	5.57	71.1	684.5	86.7
CF-15-07	Southwest End	Sep-16	18.14	749	7.48	44.4	3.9	2.87
CF-15-08	Southwest End	Sep-16	17.58	627	7.53	23.3	4.49	3.03
CF-15-09	Southwest End	Sep-16	25.31	920	7.65	25	0.97	3.71
WBSP-15-01	Background	Sep-16	14.16	1119	6.17	-105.5	714.81	14.7
WBSP-15-02	Background	Sep-16	21.71	1717	6.79	-46.9	5.05	3.45

Table 3-2
Clifty Creek Plant
Type I Residual Waste Landfill and Landfill Runoff Collection Pond
CCR Groundwater Monitoring Program
Summary of Measured Field Parameters
January 2016 through August 2017

Sample ID	Location	Date	Temperature	Conductivity	pH	Oxidation Reduction Potential	Dissolved Oxygen	Turbidity
CF-15-01	Northeast End	Mar-17	14.8	11.42	7.06	29.8	0.62	2.17
CF-15-02	Northeast End	Mar-17	15.31	2519	6.65	57.3	0.91	2.13
CF-15-03	Northeast End	Mar-17	15.44	1433	7	86.3	0.56	4.01
CF-15-04	Background	Mar-17	10.85	627	7.46	32.3	0.81	3.71
CF-15-05	Background	Mar-17	12.21	1030	6.91	2.8	0.43	2.91
CF-15-06	Background	Mar-17	9.96	1177	7.54	2.3	1.76	4.36
CF-15-07	Southwest End	Mar-17	10.43	1154	6.99	14.8	0.2	3.02
CF-15-08	Southwest End	Mar-17	13.81	1021	7.28	34.1	0.54	3.01
CF-15-09	Southwest End	Mar-17	12.3	1280	7.16	88.5	0.9	2.02
WBSP-15-01	Background	Mar-17	14.97	1498	6.85	111.5	3.57	18.4
WBSP-15-02	Background	Mar-17	11.11	1235	6.78	-36.5	1.89	3.25
CF-15-01	Northeast End	Nov-16	12.96	1129	6.58	80.9	3.13	2.98
CF-15-02	Northeast End	Nov-16	14.28	2077	6.19	-141.8	4.13	2.73
CF-15-03	Northeast End	Nov-16	13.83	1090	7.24	23.8	4.84	2.98
CF-15-04	Background	Nov-16	14.17	473	6.19	51.4	6.88	3.12
CF-15-05	Background	Nov-16	14.28	786	6.1	38	5.18	2.71
CF-15-06	Background	Nov-16	Dry	Dry	Dry	Dry	Dry	Dry
CF-15-07	Southwest End	Nov-16	14.95	972	7.87	-129.5	NM	3.82
CF-15-08	Southwest End	Nov-16	14.6	796	6.64	53	6.07	3.51
CF-15-09	Southwest End	Nov-16	Dry	Dry	Dry	Dry	Dry	Dry
WBSP-15-01	Background	Nov-16	Dry	Dry	Dry	Dry	Dry	Dry
WBSP-15-02	Background	Nov-16	Dry	Dry	Dry	Dry	Dry	Dry
CF-15-01	Northeast End	Jun-17	18.7	931	6.22	27.3	7.15	3.65
CF-15-02	Northeast End	Jun-17	17.87	2640	6.6	31.9	7.62	3.91
CF-15-03	Northeast End	Jun-17	18.86	14.11	7.12	43.1	6.91	3.31
CF-15-04	Background	Jun-17	19.01	673	677	3012	6.99	2.97
CF-15-05	Background	Jun-17	17.12	1027	7.16	34.9	8.08	3.98
CF-15-06	Background	Jun-17	Dry	Dry	Dry	Dry	Dry	Dry
CF-15-07	Southwest End	Jun-17	19.96	1221	6.69	34.8	6.52	3.98
CF-15-08	Southwest End	Jun-17	17.92	955	7.24	38.2	7.69	3.87
CF-15-09	Southwest End	Jun-17	15.82	1180	7.91	28.8	8.91	35
WBSP-15-01	Background	Jun-17	18.51	1522	6.85	85.4	4.01	27
WBSP-15-02	Background	Jun-17	19.65	416	7.07	-45	0.93	3.58
CF-15-01	Northeast End	Aug-17	19.46	1092	7.43	121	6.7	3.73
CF-15-02	Northeast End	Aug-17	17.42	2480	6.28	123.2	7.98	3.89
CF-15-03	Northeast End	Aug-17	17.81	1363	6.99	126.1	0.14	3.22
CF-15-04	Background	Aug-17	19.12	671	7.37	111.6	6.89	2.17
CF-15-05	Background	Aug-17	15.86	923	7.18	112.6	8.89	3.11
CF-15-06	Background	Aug-17	Dry	Dry	Dry	Dry	Dry	Dry
CF-15-07	Southwest End	Aug-17	18.53	1179	7.14	105.3	0.11	3.92
CF-15-08	Southwest End	Aug-17	17.63	961	7.21	110.7	0.15	2.7
CF-15-09	Southwest End	Aug-17	15.32	1256	6.99	140.5	0.08	58.3
WBSP-15-01	Background	Dry	Dry	Dry	Dry	Dry	Dry	Dry
WBSP-15-02	Background	Aug-17	18.78	432	6.97	-94.7	1.41	85.1

Table 3-3
Clifty Creek Station
Type I Residual Waste Landfill and Landfill Runoff Collection Pond
CCR Groundwater Monitoring Program
Flow Rates, Flow Direction and Minimum Time Between Samples

Well ID	Jan-16			Mar-16			May-16		
	Flow Direction	Flow Rate (ft/day)	t_{min} (days)	Flow Direction	Flow Rate (ft/day)	t_{min} (days)	Flow Direction	Flow Rate (ft/day)	t_{min} (days)
Northeast End									
CF-15-01	Northeast	1.01	0.1515	Northeast	0.9831	0.1696	Northeast	0.9309	0.1791
CF-15-02[a]									
CF-15-03[a]									
CF-15-04[b]	Northeast	NC	NC	Northeast	NC	NC	Northeast	NC	NC
CF-15-05[b]	Southwest	NC	NC	Southwest	NC	NC	Southwest	NC	NC
CF-15-06[b]									
Southwest End									
CF-15-07[a]	Southwest	1.58	0.1055	Southwest	1.51	0.114	Southwest	1.48	0.1126
CF-15-08									
CF-15-09[a]									
WBSP-15-01[b]	Southeast	2.76	0.0604	Southeast	2.54	0.0656	Southeast	3.25	0.0513
WBSP-15-02[b]									

(a): Well used to calculate flow rate.
(b) Background well
t_{min}: Minimum time interval (days) between sampling events.
NC: Not Calculated

Table 3-3
Clifty Creek Station
Type I Residual Waste Landfill and Landfill Runoff Collection Pond
CCR Groundwater Monitoring Program
Flow Rates, Flow Direction and Minimum Time Between Samples

Well ID	Jul-16			Aug-16			Nov-16		
	Flow Direction	Flow Rate (ft/day)	t_{min} (days)	Flow Direction	Flow Rate (ft/day)	t_{min} (days)	Flow Direction	Flow Rate (ft/day)	t_{min} (days)
Northeast End									
CF-15-01	Northeast	0.9831	0.1696	Northeast	1.01	0.1515	Northeast	0.9309	0.1791
CF-15-02[a]									
CF-15-03[a]									
CF-15-04[b]	Northeast	NC	NC	Northeast	NC	NC	Northeast	NC	NC
CF-15-05[b]	Southwest	NC	NC	Southwest	NC	NC	Southwest	NC	NC
CF-15-06[b]									
Southwest End									
CF-15-07[a]	Southwest	1.14	0.1462	Southwest	1.25	0.1334	Southwest	1.18	0.1413
CF-15-08									
CF-15-09[a]									
WBSP-15-01[b]	Southeast	2.61	0.0639	Southeast	2.92	0.0571	Southeast	2.39	0.0697
WBSP-15-02[b]									

(a): Well used to calculate flow rate.
(b) Background well
t_{min}: Minimum time interval (days) between sampling events.
NC: Not Calculated

Table 3-3
Clifty Creek Station
Type I Residual Waste Landfill and Landfill Runoff Collection Pond
CCR Groundwater Monitoring Program
Flow Rates, Flow Direction and Minimum Time Between Samples

Well ID	Feb-17			Jun-17			Aug-17		
	Flow Direction	Flow Rate (ft/day)	t_{min} (days)	Flow Direction	Flow Rate (ft/day)	t_{min} (days)	Flow Direction	Flow Rate (ft/day)	t_{min} (days)
Northeast End									
CF-15-01	Northeast	0.9396	0.1774	Northeast	0.9831	0.1696	Northeast	0.9657	0.1726
CF-15-02[a]									
CF-15-03[a]									
CF-15-04[b]	Northeast	NC	NC	Northeast	NC	NC	Northeast	NC	NC
CF-15-05[b]	Southwest	NC	NC	Southwest	NC	NC	Southwest	NC	NC
CF-15-06[b]									
Southwest End									
CF-15-07[a]	Southwest	1.31	0.1273	Southwest	1.16	0.1437	Southwest	1.16	0.1437
CF-15-08									
CF-15-09[a]									
WBSP-15-01[b]	Southeast	2.82	0.0591	Southeast	2.94	0.0567	Southeast	2.48	0.0672
WBSP-15-02[b]									

(a): Well used to calculate flow rate.
(b) Background well
t_{min}: Minimum time interval (days) between sampling events.
NC: Not Calculated

TABLE 4-1
GROUNDWATER MONITORING NETWORK
WEST BOILER SLAG POND
CLIFTY CREEK STATION
MADISON, INDIANA

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					
WBSP-15-01	Upgradient	11/30/2015	449072.27	566322.12	466.93	469.36	458.93	448.93	20.43
WBSP-15-02	Upgradient	11/11/2015	449803.91	566987.30	473.83	476.76	457.83	452.83	23.93
WBSP-15-03	Upgradient	12/4/2015	451181.98	568093.60	484.91	488.03	476.91	471.91	16.12
WBSP-15-04	Downgradient	11/12/2015	450610.07	568637.65	471.17	473.71	416.17	406.17	67.54
WBSP-15-05	Downgradient	11/17/2015	450051.40	568495.72	471.90	474.42	410.90	400.90	73.52
WBSP-15-06	Downgradient	11/19/2015	449470.57	568402.50	471.28	473.51	395.78	385.78	87.73
WBSP-15-07	Downgradient	11/23/2015	448947.93	567946.39	468.82	471.31	426.82	416.82	54.49
WBSP-15-08	Downgradient	11/25/2015	448625.46	567343.24	468.56	471.06	415.76	405.76	65.30
WBSP-15-09	Downgradient	1/6/2016	448359.31	566711.13	471.21	470.69	421.21	410.21	59.48
WBSP-15-10	Downgradient	1/5/2016	448125.51	566225.21	471.21	470.69	425.21	435.21	55.48

Notes:
1. The Well locations are referenced to the North American Datum (NAD83), east zone coordinate system.
2. Elevations are referenced to the North American Vertical Datum (NAVD) 1988

Table 4-2
Clifty Creek Plant
West Boiler Slag Pond
CCR Groundwater Monitoring Program
Summary of Measured Field Parameters
January 2016 through August 2017

Sample ID	Location	Date	Temperature	Conductivity	pH	Oxidation Reduction Potential	Dissolved Oxygen	Turbidity
CF-15-04	Background	Jan-16	10.65	453	7.85	101.3	249	4.61
CF-15-05	Background	Jan-16	12.36	765	6.83	89.6	1.54	4.16
CF-15-06	Background	Jan-16	12.33	904	6.57	70.9	0.96	4.59
WBSP-15-01	Upgradient	Jan-16	10.6	720	6.84	119.6	3.19	35.6
WBSP-15-02	Upgradient	Jan-16	12.92	1370	7.06	102.1	6.11	4.06
WBSP-15-03	Upgradient	Jan-16	13.16	1067	7.35	112.6	5	4.71
WBSP-15-04	Downgradient	Jan-16	16.47	708	8.41	87.1	0.49	4.71
WBSP-15-05	Downgradient	Jan-16	11.26	656	5.29	-15.7	6.82	4.8
WBSP-15-06	Downgradient	Jan-16	13.32	682	5.38	-51.1	6.3	4.8
WBSP-15-07	Downgradient	Jan-16	10.19	1032	6.41	-285	8.56	4.18
WBSP-15-08	Downgradient	Jan-16	11.81	695	6.64	-32.9	6.59	87
WBSP-15-09	Downgradient	Jan-16	12.01	218	7.17	4.8	0.65	4.52
WBSP-15-10	Downgradient	Jan-16	12.51	328	7.1	6.8	0.45	4.75
CF-15-04	Background	Mar-16	7.17	404	7.84	57.5	2.41	4.76
CF-15-05	Background	Mar-16	11.47	789	5.72	70.1	4.11	4.57
CF-15-06	Background	Mar-16	10.34	806	5.67	68.4	1.92	5
WBSP-15-01	Upgradient	Mar-16	10.52	718	6.87	116.7	3.31	23
WBSP-15-02	Upgradient	Mar-16	7.52	1151	7.12	50.9	6.07	4.79
WBSP-15-03	Upgradient	Mar-16	8.6	666	7.55	56.2	4.78	4.65
WBSP-15-04	Downgradient	Mar-16	16.21	686	8.74	91.8	0.94	2.68
WBSP-15-05	Downgradient	Mar-16	13.74	719	8.4	65.1	1.86	4.27
WBSP-15-06	Downgradient	Mar-16	14.07	710	7.92	66.1	1.09	3.9
WBSP-15-07	Downgradient	Mar-16	6.61	810	7.67	27.5	1.19	3.94
WBSP-15-08	Downgradient	Mar-16	10.73	612	7.27	-7.1	0.3	32.8
WBSP-15-09	Downgradient	Mar-16	8.77	264	7.16	25.1	0.59	4.87
WBSP-15-10	Downgradient	Mar-16	9.12	309	7.16	22.2	0.53	4.16
CF-15-04	Background	May-16	11.15	323	7.51	28.9	4.96	3.75
CF-15-05	Background	May-16	12.03	626	7.44	29.5	4.87	3.01
CF-15-06	Background	May-16	10.33	615	7.46	29.1	6.02	4.21
WBSP-15-01	Upgradient	May-16	13.37	781	6.75	121.2	3.45	15.2
WBSP-15-02	Upgradient	May-16	13.92	1132	7.13	191.5	1.2	3.53
WBSP-15-03	Upgradient	May-16	12.78	683	7.19	186.5	3.63	4.21
WBSP-15-04	Downgradient	May-16	18.13	729	8.82	218.3	0.57	4.2
WBSP-15-05	Downgradient	May-16	16.08	725	8.36	204	0.54	3.71
WBSP-15-06	Downgradient	May-16	15.91	701	8.02	207.7	0.45	3.17
WBSP-15-07	Downgradient	May-16	18.11	1065	7.01	208	0.79	4.82
WBSP-15-08	Downgradient	May-16	13.92	690	6.83	180.2	0.45	27.8
WBSP-15-09	Downgradient	May-16	15.18	448	6.78	190.1	0.37	3.77
WBSP-15-10	Downgradient	May-16	13.89	521	6.82	188.8	0.58	3.85

Table 4-2
Clifty Creek Plant
West Boiler Slag Pond
CCR Groundwater Monitoring Program
Summary of Measured Field Parameters
January 2016 through August 2017

Sample ID	Location	Date	Temperature	Conductivity	pH	Oxidation Reduction Potential	Dissolved Oxygen	Turbidity
CF-15-04	Background	Jul-16	19.00	461	7.45	25.8	0.83	1.66
CF-15-05	Background	Jul-16	20.32	755	7.38	37.9	4.48	3.97
CF-15-06	Background	Jul-16	Dry	Dry	Dry	Dry	Dry	Dry
WBSP-15-01	Upgradient	Jul-16	19.64	1572	6.67	121.2	3.64	34
WBSP-15-02	Upgradient	Jul-16	19.71	1730	6.99	233.1	3.62	21
WBSP-15-03	Upgradient	Jul-16	22.81	754	7.36	40.4	0.74	0.44
WBSP-15-04	Downgradient	Jul-16	24.59	942	8.31	241	0.73	2.49
WBSP-15-05	Downgradient	Jul-16	23.12	1010	8.14	249.4	0.33	3.77
WBSP-15-06	Downgradient	Jul-16	22.84	989	7.9	250.1	0.29	3.68
WBSP-15-07	Downgradient	Jul-16	24.35	1470	7.07	246.5	0.5	3.68
WBSP-15-08	Downgradient	Jul-16	24.08	1046	6.87	248.2	0.29	57
WBSP-15-09	Downgradient	Jul-16	18.4	388	7.38	40.3	0.17	2.92
WBSP-15-10	Downgradient	Jul-16	27.78	601	7.4	31.3	3.37	25.5
CF-15-04	Background	Sep-16	20.42	397	7.27	23.9	3.64	1.68
CF-15-05	Background	Sep-16	16.6	920	7.2	-80.1	588.09	12.4
CF-15-06	Background	Sep-16	14.96	1123	5.57	71.1	684.5	86.7
WBSP-15-01	Upgradient	Sep-16	14.16	1119	6.17	-105.5	714.81	14.7
WBSP-15-02	Upgradient	Sep-16	21.71	1717	6.79	-46.9	5.05	3.45
WBSP-15-03	Upgradient	Sep-16	29.33	850	7.46	35.8	1.19	1.48
WBSP-15-04	Downgradient	Sep-16	21.1	635	7.34	29.8	3.25	3.26
WBSP-15-05	Downgradient	Sep-16	20.77	647	7.43	28	3.19	3.03
WBSP-15-06	Downgradient	Sep-16	18.76	605	7.25	25.6	1.34	3.55
WBSP-15-07	Downgradient	Sep-16	24.55	21193	6.62	-64.8	305.89	4.05
WBSP-15-08	Downgradient	Sep-16	17.12	907	6.49	-89.3	564.66	20.7
WBSP-15-09	Downgradient	Sep-16	19.42	474	6.51	-98.2	475.65	30.4
WBSP-15-10	Downgradient	Sep-16	28.95	698	6.65	-22.7	243.45	8.21
CF-15-04	Background	Mar-17	10.85	627	7.46	32.3	0.81	3.71
CF-15-05	Background	Mar-17	12.21	1030	6.91	2.8	0.43	2.91
CF-15-06	Background	Mar-17	9.96	1177	7.54	2.3	1.76	4.36
WBSP-15-01	Upgradient	Mar-17	14.97	1498	6.85	111.5	3.57	18.4
WBSP-15-02	Upgradient	Mar-17	11.11	1235	6.78	-36.5	1.89	3.25
WBSP-15-03	Upgradient	Mar-17	10.51	1186	6.78	20.3	0.9	1.98
WBSP-15-04	Downgradient	Mar-17	17.3	635	7.62	-60.3	5.46	3.08
WBSP-15-05	Downgradient	Mar-17	15.42	726	7.57	-113.5	3.81	3.55
WBSP-15-06	Downgradient	Mar-17	11.37	702	7.78	-25.1	4.57	4.72
WBSP-15-07	Downgradient	Mar-17	14.54	1164	7.65	-116.1	4.3	3.57
WBSP-15-08	Downgradient	Mar-17	13.28	921	6.48	19.3	0.78	128
WBSP-15-09	Downgradient	Mar-17	12.75	357	7.05	-114.5	3.21	3.59
WBSP-15-10	Downgradient	Mar-17	11.43	390	7.11	-47.1	5.85	10.73

Table 4-2
Clifty Creek Plant
West Boiler Slag Pond
CCR Groundwater Monitoring Program
Summary of Measured Field Parameters
January 2016 through August 2017

Sample ID	Location	Date	Temperature	Conductivity	pH	Oxidation Reduction Potential	Dissolved Oxygen	Turbidity
CF-15-04	Background	Nov-16	14.17	473	6.19	51.4	6.88	3.12
CF-15-05	Background	Nov-16	14.28	786	6.1	38	5.18	2.71
CF-15-06	Background	Nov-16	Dry	Dry	Dry	Dry	Dry	Dry
WBSP-15-01	Upgradient	Nov-16	Dry	Dry	Dry	Dry	Dry	Dry
WBSP-15-02	Upgradient	Nov-16	Dry	Dry	Dry	Dry	Dry	Dry
WBSP-15-03	Upgradient	Nov-16	15.55	817	6.76	54	1.55	1.96
WBSP-15-04	Downgradient	Nov-16	18.01	671	9.07	-27.5	4.36	3.51
WBSP-15-05	Downgradient	Nov-16	16.89	755	8.26	-85.8	3.05	3.57
WBSP-15-06	Downgradient	Nov-16	14.89	742	7.94	-50.1	4.88	3.29
WBSP-15-07	Downgradient	Nov-16	13.63	1093	7.07	-75.1	4.14	4.32
WBSP-15-08	Downgradient	Nov-16	12.91	707	6.62	-83.5	3.2	3.6
WBSP-15-09	Downgradient	Nov-16	13.51	390	6.75	-65.1	3.14	4.25
WBSP-15-10	Downgradient	Nov-16	12.29	489	6.72	-17.4	6.18	57
CF-15-04	Background	Jun-17	19.01	673	677	3012	6.99	2.97
CF-15-05	Background	Jun-17	17.12	1027	7.16	34.9	8.08	3.98
CF-15-06	Background	Jun-17	Dry	Dry	Dry	Dry	Dry	Dry
WBSP-15-01	Upgradient	Jun-17	18.51	1522	6.85	85.4	4.01	27
WBSP-15-02	Upgradient	Jun-17	19.65	416	7.07	-45	0.93	3.58
WBSP-15-03	Upgradient	Jun-17	20.96	772	7.38	32.8	6.05	2.89
WBSP-15-04	Downgradient	Jun-17	21.52	137	7.85	-179.5	0.88	4.32
WBSP-15-05	Downgradient	Jun-17	18.98	625	7.67	-171	1.04	4.82
WBSP-15-06	Downgradient	Jun-17	24.27	737	6.95	-160.9	3.85	4.85
WBSP-15-07	Downgradient	Jun-17	18.76	1275	7.7	-164.7	4.07	4.75
WBSP-15-08	Downgradient	Jun-17	21.94	866	7.67	-201.2	0.21	12.4
WBSP-15-09	Downgradient	Jun-17	21.44	562	7.77	-157.3	3.79	4.71
WBSP-15-10	Downgradient	Jun-17	16.62	532	7.49	-62.3	5.85	16
CF-15-04	Background	Aug-17	19.12	671	7.37	111.6	6.89	2.17
CF-15-05	Background	Aug-17	15.86	923	7.18	112.6	8.89	3.11
CF-15-06	Background	Aug-17	Dry	Dry	Dry	Dry	Dry	Dry
WBSP-15-01	Upgradient	Aug-17	Dry	Dry	Dry	Dry	Dry	Dry
WBSP-15-02	Upgradient	Aug-17	18.78	432	6.97	-94.7	1.41	85.1
WBSP-15-03	Upgradient	Aug-17	21.97	1115	7	103.1	5.63	2.06
WBSP-15-04	Downgradient	Aug-17	18.84	64	7.92	-97.6	0.77	4.02
WBSP-15-05	Downgradient	Aug-17	19.01	876	6.92	-99.5	0.29	1.28
WBSP-15-06	Downgradient	Aug-17	20.27	105.5	7.47	-125.4	1.04	3.76
WBSP-15-07	Downgradient	Aug-17	19.22	1506	7.27	-87.1	4.03	4.12
WBSP-15-08	Downgradient	Aug-17	21.65	652	7.92	-136.5	0.97	4.69
WBSP-15-09	Downgradient	Aug-17	22.4	781	7.3	-108.6	0.8	4.81
WBSP-15-10	Downgradient	Aug-17	17.75	810	7.53	-74.3	1.2	31.1

Table 4-3
Clifty Creek Station
West Boiler Slag Pond
CCR Groundwater Monitoring Program
Flow Rates, Flow Direction and Minimum Time Between Samples

Well ID	Jan-16			Mar-16			May-16		
	Flow Direction	Flow Rate (ft/day)	t_{min} (days)	Flow Direction	Flow Rate	t_{min} (days)	Flow Direction	Flow Rate	t_{min} (days)
CF-15-04[b]	NC	NC	NC	NC	NC	NC	NC	NC	NC
CF-15-05[b]									
CF-15-06[b]									
WBSP-15-01[b]	Southeast	2.76	0.0604	Southeast	2.54	0.0656	Southeast	3.25	0.0513
WBSP-15-02[a][b]									
WBSP-15-03[b]									
WBSP-15-04									
WBSP-15-05									
WBSP-15-06[a]									
WBSP-15-07									
WBSP-15-08									
WBSP-15-09									
WBSP-15-10									

(a) Well used to calculate Flow Rate.
(b) Background/Upgradient Well
t_{min}: Minimum time interval (days) between sampling events.

Table 4-3
Clifty Creek Station
West Boiler Slag Pond
CCR Groundwater Monitoring Program
Flow Rates, Flow Direction and Minimum Time Between Samples

Well ID	Jul-16			Aug-16			Nov-16		
	Flow Direction	Flow Rate	t_{min} (days)	Flow Direction	Flow Rate	t_{min} (days)	Flow Direction	Flow Rate	t_{min} (days)
CF-15-04[(b)]	NC	NC	NC	NC	NC	NC	NC	NC	NC
CF-15-05[(b)]									
CF-15-06[(b)]									
WBSP-15-01[(b)]	Southeast	2.61	0.0639	Southeast	2.92	0.0571	Southeast	2.39	0.0697
WBSP-15-02[(a)(b)]									
WBSP-15-03[(b)]									
WBSP-15-04									
WBSP-15-05									
WBSP-15-06[(a)]									
WBSP-15-07									
WBSP-15-08									
WBSP-15-09									
WBSP-15-10									

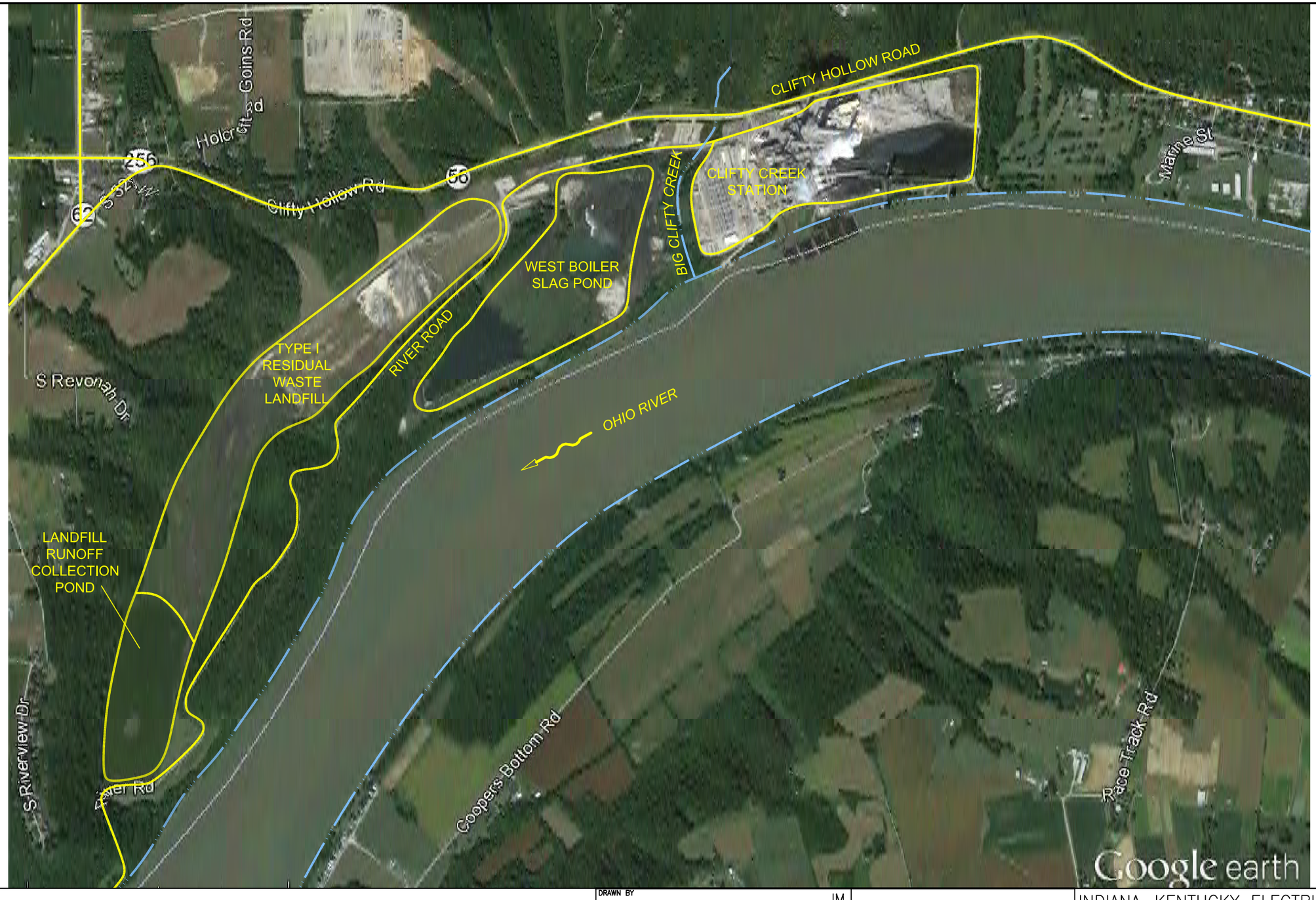
(a) Well used to calculate Flow Rate.
(b) Background/Upgradient Well
t_{min}: Minimum time interval (days) between sampling events.

Table 4-3
Clifty Creek Station
West Boiler Slag Pond
CCR Groundwater Monitoring Program
Flow Rates, Flow Direction and Minimum Time Between Samples

Well ID	Feb-17			Jun-17			Aug-17		
	Flow Direction	Flow Rate	t_{min} (days)	Flow Direction	Flow Rate	t_{min} (days)	Flow Direction	Flow Rate	t_{min} (days)
CF-15-04[b]	NC	NC	NC	NC	NC	NC	NC	NC	NC
CF-15-05[b]									
CF-15-06[b]									
WBSP-15-01[b]	Southeast	2.82	0.0591	Southeast	2.94	0.0567	Southeast	2.48	0.0672
WBSP-15-02[a][b]									
WBSP-15-03[b]									
WBSP-15-04									
WBSP-15-05									
WBSP-15-06[a]									
WBSP-15-07									
WBSP-15-08									
WBSP-15-09									
WBSP-15-10									

(a) Well used to calculate Flow Rate.
(b) Background/Upgradient Well
t_{min}: Minimum time interval (days) between sampling events.

FIGURES



N

1200' 0' 1200' 2400'

SCALE: 1"= 1200'

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DATE	
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DWG FILE	IKEC_Clifty_Corrective Action_Site Loc_b10_FIG 1.dwg
DRAWING SCALE	AS SHOWN

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INDIANA-KENTUCKY ELECTRIC CORPORATION

CLIFTY CREEK STATION
MADISON, INDIANA
SITE LOCATION MAP

DRAWING NAME	REV.
FIGURE 1	0

Plot: 01/19/2018 14:12 _PROGRAMS-IKEC\Clifty Creek-CCR Program\CAD\2017 GW Monitoring-Corrective Action Rpt-Figs\IKEC_Clifty_Corrective Action_Site Loc_b10_FIG 1.dwg

N

CLIFTY HOLLOW ROAD

CF-15-04

CF-15-01

CF-15-02

CF-15-03

WBSP-15-02

BIG CLIFTY CREEK

CLIFTY CREEK STATION

WEST BOILER SLAG POND

TYPE I RESIDUAL WASTE LANDFILL

DEVIL'S BACKBONE

WBSP-15-01

INDIANA / KENTUCKY

CF-15-05

CF-15-06

OHIO RIVER

RIVER ROAD

LANDFILL RUNOFF COLLECTION POND

CF-15-09

CF-15-08

CF-15-07

LEGEND:

MONITORING WELL LOCATION

800' 0' 800' 1600'

SCALE: 1"= 800'

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DWG FILE	IKEC_Clifty_Corrective Action_MW Locs_b11.dwg
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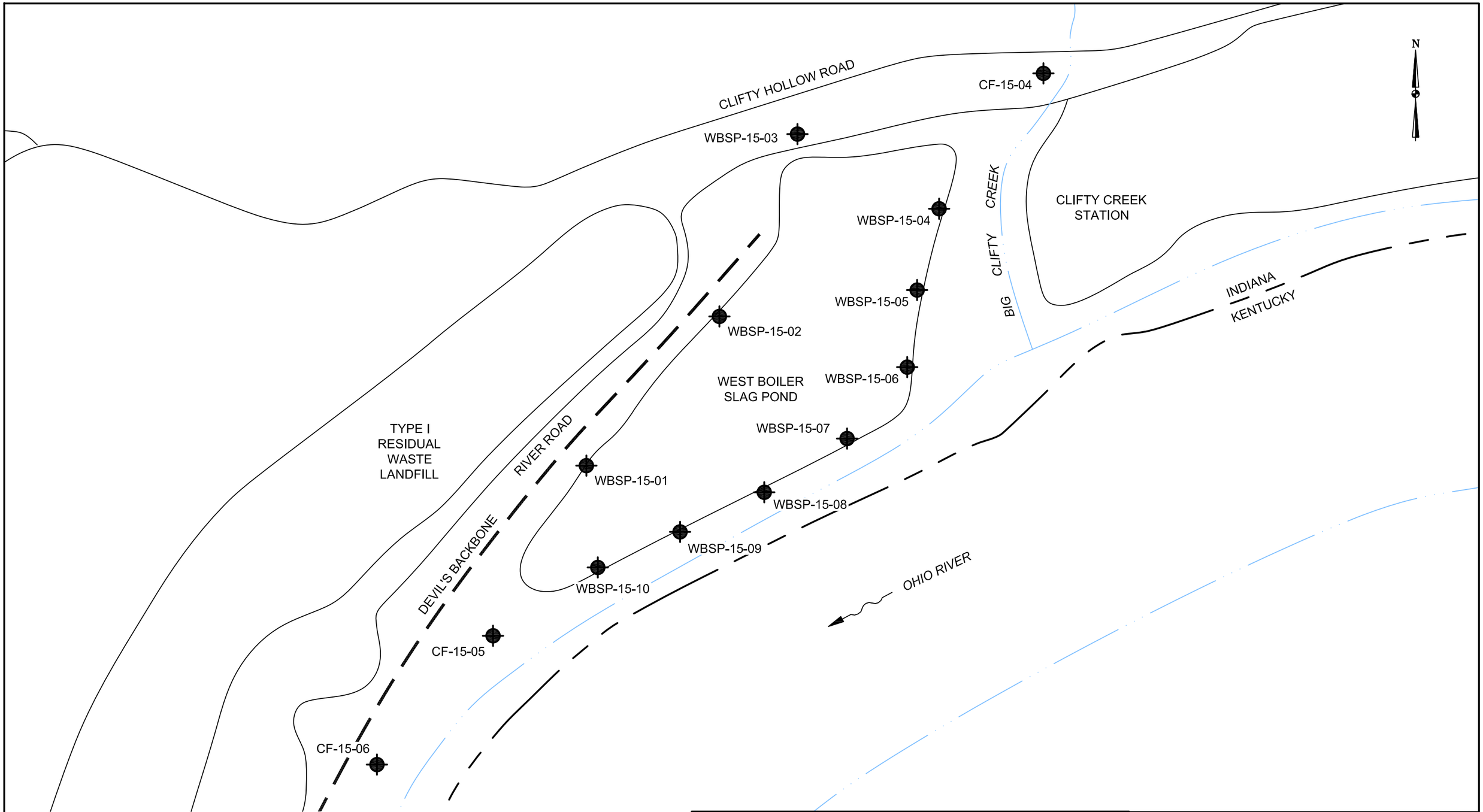
CLIFTY CREEK STATION
MADISON, INDIANA
TYPE I RESIDUAL WASTE LANDFILL AND
LANDFILL RUNOFF COLLECTION POND
MONITORING WELL LOCATIONS

DRAWING NAME: FIGURE 2

REV.: 0

Plot: 01/22/2018 15:51 _PROGRAMS-IKEC\Clifty Creek-CCR Program\CAD\2017_GW Monitoring-Corrective Action Rpt-Figs\IKEC_Clifty_Corrective Action_MW Locs_b11.dwg\FIG 2



LEGEND:

MONITORING WELL LOCATION

600' 0' 600' 1200'

SCALE: 1"= 600'

DRAWN BY	JM
DATE	
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JOB NO.	2017114-CLI
DWG FILE	IKEC_Clifty_Corrective Action_MW Locs_b11.dwg
DRAWING SCALE	AS SHOWN

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INDIANA-KENTUCKY ELECTRIC CORPORATION

CLIFTY CREEK STATION
MADISON, INDIANA
MONITORING WELL LOCATIONS

DRAWING NAME: FIGURE 3

REV. 0

Plot: 01/22/2018 15:52 _PROGRAMS-IKEC\Clifty Creek-CCR Program\CAD\2017_GW Monitoring-Corrective Action Rpt-Figs\IKEC_Clifty_Corrective Action_MW Locs_b11.dwg\FIG 3

APPENDIX A

GROUNDWATER ELEVATIONS

TABLE A-1
CLIFTY CREEK CREEK PLANT
SUMMARY OF GROUNDWATER ELEVATION DATA
JANUARY 2016 - AUGUST 2017

Monitoring Well Designation	Jan-16 Groundwater Elevation (ft)	Mar-16 Groundwater Elevation (ft)	May-16 Groundwater Elevation (ft)	Jul-16 Groundwater Elevation (ft)	Aug-16 Groundwater Elevation (ft)	Nov-16 Groundwater Elevation (ft)	Feb-17 Groundwater Elevation (ft)
LANDFILL AND LANDFILL RUNOFF COLLECTION POND							
CF-15-01	495.45	496.16	496.35	495.03	490.96	486.35	493.21
CF-15-02	490.68	490.95	490.97	489.51	490.07	489.19	490.25
CF-15-03	496.53	496.64	496.38	495.20	495.94	494.57	495.68
CF-15-04	439.83	441.19	441.27	436.59	438.10	436.58	437.65
CF-15-05	438.68	439.86	436.25	429.98	433.55	429.02	433.74
CF-15-06	432.27	437.12	429.22	Dry	423.28	422.24	426.38
CF-15-07	436.61	438.08	437.48	434.08	434.62	433.56	436.04
CF-15-08	439.48	440.54	440.88	439.68	439.41	438.05	439.15
CF-15-09	450.77	451.58	450.69	444.25	445.84	444.15	447.66
WEST BOILER SLAG POND							
WBSP-15-01	451.72	453.01	453.27	449.97	450.26	449.72	450.90
WBSP-15-02	468.31	472.52	471.52	457.52	462.38	454.37	462.67
WBSP-15-03	477.03	477.11	477.62	476.00	477.04	474.52	477.06
WBSP-15-04	429.22	436.25	424.96	420.14	420.57	420.19	422.41
WBSP-15-05	428.95	436.12	424.84	417.06	420.46	420.09	422.29
WBSP-15-06	428.82	436.06	424.77	419.96	420.40	420.06	422.28
WBSP-15-07	429.72	430.41	430.88	431.07	430.49	428.99	428.53
WBSP-15-08	434.03	434.62	434.81	434.53	433.99	433.55	433.57
WBSP-15-09	432.17	430.39	432.21	427.79	430.33	429.38	432.53
WBSP-15-10	431.41	433.28	432.58	431.95	432.19	431.59	432.25

TABLE A-1
CLIFTY CREEK CREEK PLANT
SUMMARY OF GROUNDWATER ELEVATION DATA
JANUARY 2016 - AUGUST 2017

Monitoring Well Designation	Jun-17 Groundwater Elevation (ft)	Aug-17 Groundwater Elevation (ft)	Groundwater Elevation (ft)
LANDFILL AND LANDFILL RUNOFF COLLECTION POND			
CF-15-01	489.90	486.80	
CF-15-02	490.14	489.12	
CF-15-03	495.85	494.71	
CF-15-04	436.26	435.19	
CF-15-05	434.32	428.73	
CF-15-06	423.52	422.27	
CF-15-07	434.38	433.89	
CF-15-08	440.53	439.19	
CF-15-09	444.69	444.19	
WEST BOILER SLAG POND			
WBSP-15-01	450.64	449.88	
WBSP-15-02	462.60	455.24	
WBSP-15-03	476.33	474.83	
WBSP-15-04	420.57	419.90	
WBSP-15-05	420.44	419.75	
WBSP-15-06	420.39	419.68	
WBSP-15-07	430.53	430.42	
WBSP-15-08	434.48	434.47	
WBSP-15-09	432.08	432.59	
WBSP-15-10	432.61	431.94	

APPENDIX B

GROUNDWATER FLOW MAPS

Type I Residual Waste Landfill and Landfill Runoff Collection Pond

N

NOTE: CF-15-04 IS LOCATED APPROXIMATELY ½ MILE (MORE THAN 2,500 FEET) NORTHEAST OF THE TYPE I RESIDUAL WASTE LANDFILL.

CLIFTY HOLLOW ROAD

CF-15-04
439.83

CLIFTY CREEK
STATION

CLIFTY CREEK

CLIFTY

BIG

INDIANA

KENTUCKY

OHIO RIVER

490
492
494
496

CF-15-01
495.45

CF-15-02
490.68

CF-15-03
496.53

TYPE I RESIDUAL
WASTE LANDFILL

WEST BOILER
SLAG POND

DEVIL'S BACKBONE

RIVER ROAD

GROUNDWATER FLOW

LEGEND:

MONITORING WELL LOCATION

GROUNDWATER FLOW DIRECTION

300' 0' 300' 600'

SCALE: 1"= 300'

DRAWN BY	JM
DATE	
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JOB NO.	2017114-CLI
DWG FILE	IKEC_Clifty_Corrective Action_Appx B_Jan16 b01.dwg
DRAWING SCALE	AS SHOWN

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INDIANA-KENTUCKY ELECTRIC CORPORATION

CLIFTY CREEK STATION
MADISON, INDIANA
TYPE I RESIDUAL WASTE LANDFILL AND LANDFILL RUNOFF COLLECTION POND – NORTHEAST END
GROUNDWATER LEVELS & FLOW DIRECTION – JANUARY 2016

DRAWING NAME: FIGURE B-1

REV.: 0

Plot: 01/29/2018 11:34 _PROGRAMS-IKEC\Clifty Creek-CCR Program\CAD\2017 GW Monitoring-Corrective Action Rpt-Appx B\IKEC_Clifty_Corrective Action_Appx B_Jan16 b01.dwg\B-1

NOTE: CF-15-04 IS LOCATED APPROXIMATELY ½ MILE (MORE THAN 2,500 FEET) NORTHEAST OF THE TYPE I RESIDUAL WASTE LANDFILL.

N

CLIFTY HOLLOW ROAD

CF-15-04
441.19

CLIFTY CREEK
STATION

CLIFTY CREEK

CLIFTY

BIG

490
492
494
496

CF-15-01
496.16

CF-15-02
490.95

CF-15-03
496.64

TYPE I RESIDUAL
WASTE LANDFILL

WEST BOILER
SLAG POND

DEVIL'S BACKBONE

RIVER ROAD

GROUNDWATER FLOW

INDIANA

KENTUCKY

OHIO RIVER

LEGEND:

MONITORING WELL LOCATION

GROUNDWATER FLOW DIRECTION

300' 0' 300' 600'

SCALE: 1"= 300'

DRAWN BY	JM
DATE	
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JOB NO.	2017114-CLI
DWG FILE	IKEC_Clifty_Corrective Action_Appx B_Mar16 b02.dwg
DRAWING SCALE	AS SHOWN

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CLIFTY CREEK STATION
MADISON, INDIANA
TYPE I RESIDUAL WASTE LANDFILL AND LANDFILL RUNOFF COLLECTION POND – NORTHEAST END
GROUNDWATER LEVELS & FLOW DIRECTION – MARCH 2016

DRAWING NAME: FIGURE B-2

REV. 0

Plot: 01/29/2018 11:40 _PROGRAMS-IKEC\Clifty Creek-CCR Program\CAD\2017 GW Monitoring-Corrective Action Rpt-Appx B\IKEC_Clifty_Corrective Action_Appx B_Mar16 b02.dwg\B-2

NOTE: CF-15-04 IS LOCATED APPROXIMATELY ½ MILE (MORE THAN 2,500 FEET) NORTHEAST OF THE TYPE I RESIDUAL WASTE LANDFILL.

N

CLIFTY HOLLOW ROAD

CF-15-04
441.27

CLIFTY CREEK
STATION

490
492
494
496

CF-15-01
496.35

CF-15-02
490.97

CF-15-03
496.38

TYPE I RESIDUAL
WASTE LANDFILL

WEST BOILER
SLAG POND

DEVIL'S BACKBONE

RIVER ROAD

GROUNDWATER FLOW

CLIFTY CREEK

CLIFTY

BIG

INDIANA

KENTUCKY

OHIO RIVER

LEGEND:

MONITORING WELL LOCATION

GROUNDWATER FLOW DIRECTION

600' 0' 600' 1200'

SCALE: 1"= 600'

DRAWN BY	JM
DATE	
CHECKED BY	
JOB NO.	2017114-CLI
DWG FILE	IKEC_Clifty_Corrective Action_Appx B_May16 b03.dwg
DRAWING SCALE	AS SHOWN

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INDIANA-KENTUCKY ELECTRIC CORPORATION

CLIFTY CREEK STATION
MADISON, INDIANA
TYPE I RESIDUAL WASTE LANDFILL AND LANDFILL RUNOFF COLLECTION POND - NORTHEAST END
GROUNDWATER LEVELS & FLOW DIRECTION - MAY 2016

DRAWING NAME: FIGURE B-3

REV. 0

Plot: 01/29/2018 11:42 _PROGRAMS-IKEC\Clifty Creek-CCR Program\CAD\2017 GW Monitoring-Corrective Action Rpt-Appx B\IKEC_Clifty_Corrective Action_Appx B_May16 b03.dwg\B-3

NOTE: CF-15-04 IS LOCATED APPROXIMATELY ½ MILE (MORE THAN 2,500 FEET) NORTHEAST OF THE TYPE I RESIDUAL WASTE LANDFILL.

N

CLIFTY HOLLOW ROAD

CF-15-04
436.59

CLIFTY CREEK
STATION

490
492
494

CF-15-01
495.03

CF-15-02
489.51

CF-15-03
495.20

TYPE I RESIDUAL
WASTE LANDFILL

WEST BOILER
SLAG POND

DEVILS BACKBONE

RIVER ROAD

GROUNDWATER FLOW

CLIFTY CREEK

BIG CLIFTY

INDIANA

KENTUCKY

OHIO RIVER

LEGEND:

MONITORING WELL LOCATION

GROUNDWATER FLOW DIRECTION

600' 0' 600' 1200'

SCALE: 1"= 600'

DRAWN BY	JM
DATE	
CHECKED BY	
JOB NO.	2017114-CLI
DWG FILE	IKEC_Clifty_Corrective Action_Appx B_July16 b04.dwg
DRAWING SCALE	AS SHOWN

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INDIANA-KENTUCKY ELECTRIC CORPORATION

CLIFTY CREEK STATION
MADISON, INDIANA
TYPE I RESIDUAL WASTE LANDFILL AND LANDFILL RUNOFF COLLECTION POND – NORTHEAST END
GROUNDWATER LEVELS & FLOW DIRECTION – JULY 2016

DRAWING NAME: FIGURE B-4

REV.: 0

Plot: 01/29/2018 11:46 _PROGRAMS-IKEC\Clifty Creek-CCR Program\CAD\2017 GW Monitoring-Corrective Action Rpt-Appx B\IKEC_Clifty_Corrective Action_Appx B_July16 b04.dwg\B-4

NOTE: CF-15-04 IS LOCATED APPROXIMATELY ½ MILE (MORE THAN 2,500 FEET) NORTHEAST OF THE TYPE I RESIDUAL WASTE LANDFILL.

N

CLIFTY HOLLOW ROAD

CF-15-04
438.10

CLIFTY CREEK
STATION

CF-15-01
490.96

490

492

494

CF-15-02
490.07

CF-15-03
495.94

TYPE I RESIDUAL
WASTE LANDFILL

WEST BOILER
SLAG POND

DEVIL'S BACKBONE

GROUNDWATER FLOW

RIVER ROAD

CREEK

CLIFTY

BIG

INDIANA

KENTUCKY

OHIO RIVER

LEGEND:

MONITORING WELL LOCATION

GROUNDWATER FLOW DIRECTION

600' 0' 600' 1200'

SCALE: 1"= 600'

DRAWN BY	JM
DATE	
CHECKED BY	
JOB NO.	2017114-CLI
DWG FILE	IKEC_Clifty_Corrective Action_Appx B_Aug16 b05.dwg
DRAWING SCALE	AS SHOWN

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CLIFTY CREEK STATION
MADISON, INDIANA
TYPE I RESIDUAL WASTE LANDFILL AND LANDFILL RUNOFF COLLECTION POND – NORTHEAST END
GROUNDWATER LEVELS & FLOW DIRECTION – AUGUST 2016

DRAWING NAME: FIGURE B-5

REV. 0

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NOTE: CF-15-04 IS LOCATED APPROXIMATELY ½ MILE (MORE THAN 2,500 FEET) NORTHEAST OF THE TYPE I RESIDUAL WASTE LANDFILL.

N

CLIFTY HOLLOW ROAD

CF-15-04
436.58

CLIFTY CREEK
STATION

CF-15-01
486.35

CF-15-02
489.19

CF-15-03
494.57

486
488
490
492
494

TYPE I RESIDUAL
WASTE LANDFILL

WEST BOILER
SLAG POND

DEVIL'S BACKBONE

RIVER ROAD

GROUNDWATER FLOW

CREEK

CLIFTY

BIG

INDIANA

KENTUCKY

OHIO RIVER

LEGEND:

MONITORING WELL LOCATION

GROUNDWATER FLOW DIRECTION

600' 0' 600' 1200'

SCALE: 1"= 600'

DRAWN BY	JM
DATE	
CHECKED BY	
JOB NO.	2017114-CLI
DWG FILE	IKEC_Clifty_Corrective Action_Appx B_Nov16 b06.dwg
DRAWING SCALE	AS SHOWN

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INDIANA-KENTUCKY ELECTRIC CORPORATION

CLIFTY CREEK STATION
MADISON, INDIANA
TYPE I RESIDUAL WASTE LANDFILL AND LANDFILL RUNOFF COLLECTION POND – NORTHEAST END
GROUNDWATER LEVELS & FLOW DIRECTION – NOVEMBER 2016

DRAWING NAME: FIGURE B-6

REV. 0

Plot: 01/29/2018 11:54 _PROGRAMS-IKEC\Clifty Creek-CCR Program\CAD\2017 GW Monitoring-Corrective Action Rpt-Appx B\IKEC_Clifty_Corrective Action_Appx B_Nov16 b06.dwg\B-6

NOTE: CF-15-04 IS LOCATED APPROXIMATELY ½ MILE (MORE THAN 2,500 FEET) NORTHEAST OF THE TYPE I RESIDUAL WASTE LANDFILL.

N

CLIFTY HOLLOW ROAD

CF-15-04
437.65

CLIFTY CREEK
STATION

CREEK

CLIFTY

BIG

CF-15-01
493.21

490

492

494

CF-15-02
490.25

CF-15-03
495.68

TYPE I RESIDUAL
WASTE LANDFILL

WEST BOILER
SLAG POND

DEVIL'S BACKBONE

RIVER ROAD

GROUNDWATER FLOW

INDIANA

KENTUCKY

OHIO RIVER

LEGEND:

MONITORING WELL LOCATION

GROUNDWATER FLOW DIRECTION

600' 0' 600' 1200'

SCALE: 1"= 600'

DRAWN BY	JM
DATE	
CHECKED BY	
JOB NO.	2017114-CLI
DWG FILE	IKEC_Clifty_Corrective Action_Appx B_Feb17 b07.dwg
DRAWING SCALE	AS SHOWN

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CLIFTY CREEK STATION
MADISON, INDIANA
TYPE I RESIDUAL WASTE LANDFILL AND LANDFILL RUNOFF COLLECTION POND – NORTHEAST END
GROUNDWATER LEVELS & FLOW DIRECTION – FEBRUARY 2017

DRAWING NAME: FIGURE B-7

REV. 0

Plot: 01/29/2018 12:04 _PROGRAMS-IKEC\Clifty Creek-CCR Program\CAD\2017 GW Monitoring-Corrective Action Rpt-Appx B\IKEC_Clifty_Corrective Action_Appx B_Feb17 b07.dwg\B-7

NOTE: CF-15-04 IS LOCATED APPROXIMATELY ½ MILE (MORE THAN 2,500 FEET) NORTHEAST OF THE TYPE I RESIDUAL WASTE LANDFILL.

N

CLIFTY HOLLOW ROAD

CF-15-04
436.26

CLIFTY CREEK
STATION

CF-15-01
489.90

490

CF-15-02
490.14

492

494

TYPE I RESIDUAL
WASTE LANDFILL

CF-15-03
495.85

DEVIL'S BACKBONE

WEST BOILER
SLAG POND

GROUNDWATER FLOW

RIVER ROAD

CREEK

CLIFTY

BIG

INDIANA

KENTUCKY

OHIO RIVER

LEGEND:

MONITORING WELL LOCATION

GROUNDWATER FLOW DIRECTION

600' 0' 600' 1200'

SCALE: 1"= 600'

DRAWN BY	JM
DATE	
CHECKED BY	
JOB NO.	2017114-CLI
DWG FILE	IKEC_Clifty_Corrective Action_Appx B_Jun17 b08.dwg
DRAWING SCALE	AS SHOWN

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INDIANA-KENTUCKY ELECTRIC CORPORATION

CLIFTY CREEK STATION
MADISON, INDIANA
TYPE I RESIDUAL WASTE LANDFILL AND LANDFILL RUNOFF COLLECTION POND – NORTHEAST END
GROUNDWATER LEVELS & FLOW DIRECTION – JUNE 2017

DRAWING NAME: FIGURE B-8

REV. 0

Plot: 01/29/2018 12:07 _PROGRAMS-IKEC\Clifty Creek-CCR Program\CAD\2017 GW Monitoring-Corrective Action Rpt-Appx B\IKEC_Clifty_Corrective Action_Appx B_Jun17 b08.dwg\B-8

NOTE: CF-15-04 IS LOCATED APPROXIMATELY ½ MILE (MORE THAN 2,500 FEET) NORTHEAST OF THE TYPE I RESIDUAL WASTE LANDFILL.

N

CLIFTY HOLLOW ROAD

CF-15-04
435.19

CLIFTY CREEK
STATION

CF-15-01
486.80

CF-15-02
489.12

CF-15-03
494.71

486
488
490
492
494

TYPE I RESIDUAL
WASTE LANDFILL

WEST BOILER
SLAG POND

DEVIL'S BACKBONE

RIVER ROAD

GROUNDWATER FLOW

CREEK

CLIFTY

BIG

INDIANA

KENTUCKY

OHIO RIVER

LEGEND:

MONITORING WELL LOCATION

GROUNDWATER FLOW DIRECTION

600' 0' 600' 1200'

SCALE: 1"= 600'

DRAWN BY	JM
DATE	
CHECKED BY	
JOB NO.	2017114-CLI
DWG FILE	IKEC_Clifty_Corrective Action_Appx B_Aug17 b09.dwg
DRAWING SCALE	AS SHOWN

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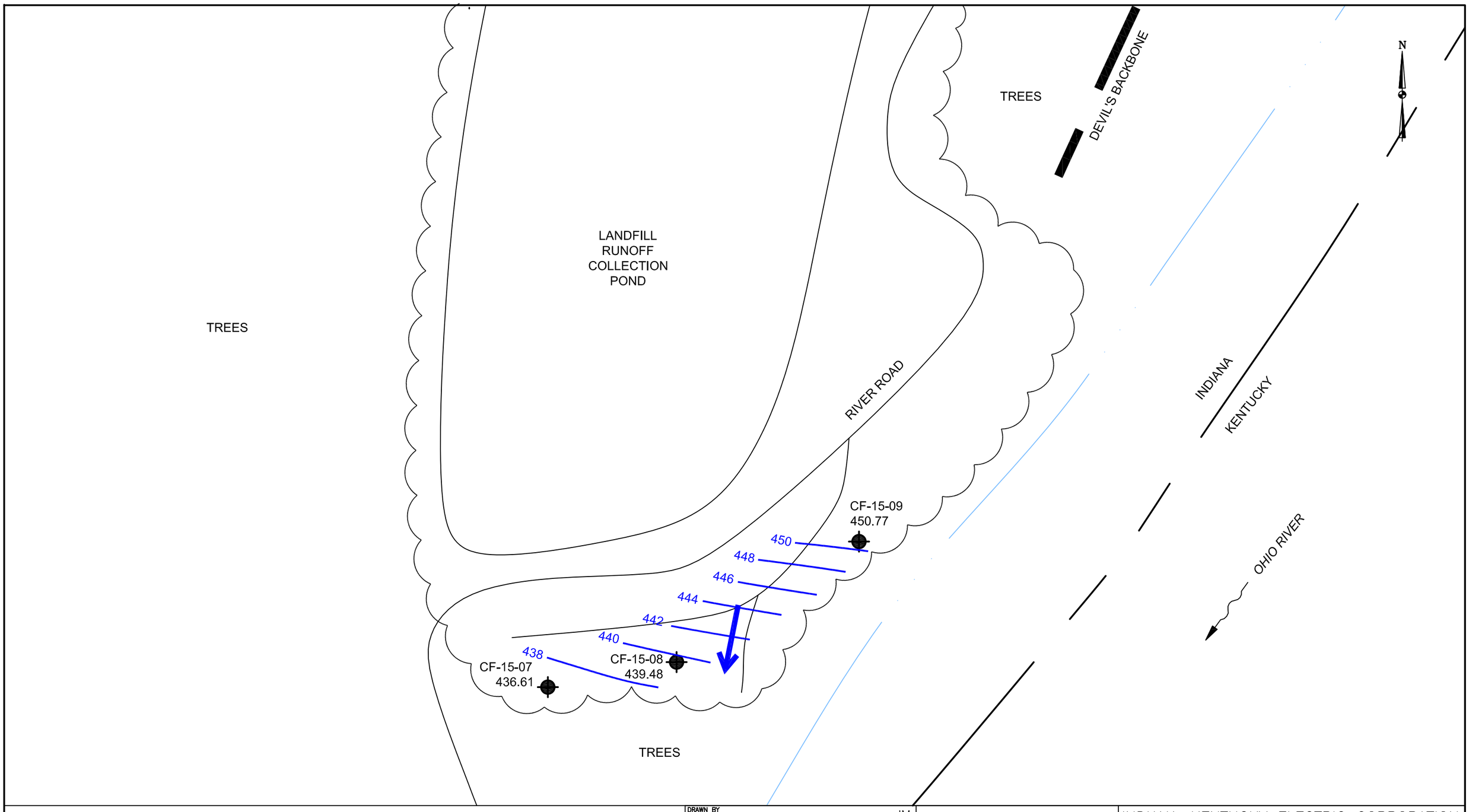
CLIFTY CREEK STATION
MADISON, INDIANA
TYPE I RESIDUAL WASTE LANDFILL AND LANDFILL RUNOFF COLLECTION POND – NORTHEAST END
GROUNDWATER LEVELS & FLOW DIRECTION – AUGUST 2017

DRAWING NAME: FIGURE B-9

REV. 0

Plot: 01/23/2018 10:10 _PROGRAMS-IKEC\Clifty Creek-CCR Program\CAD\2017 GW Monitoring-Corrective Action Rpt-Appx B\IKEC_Clifty_Corrective Action_Appx B_Aug17 b09.dwg\B-9



LEGEND:

MONITORING WELL LOCATION

GROUNDWATER FLOW DIRECTION

200' 0' 200' 400'

SCALE: 1"= 200'

DRAWN BY	JM
DATE	
CHECKED BY	
JOB NO.	2017114-CLI
DWG FILE	IKEC_Clifty_Corrective Action_Appx B_Jan16 b01.dwg
DRAWING SCALE	AS SHOWN

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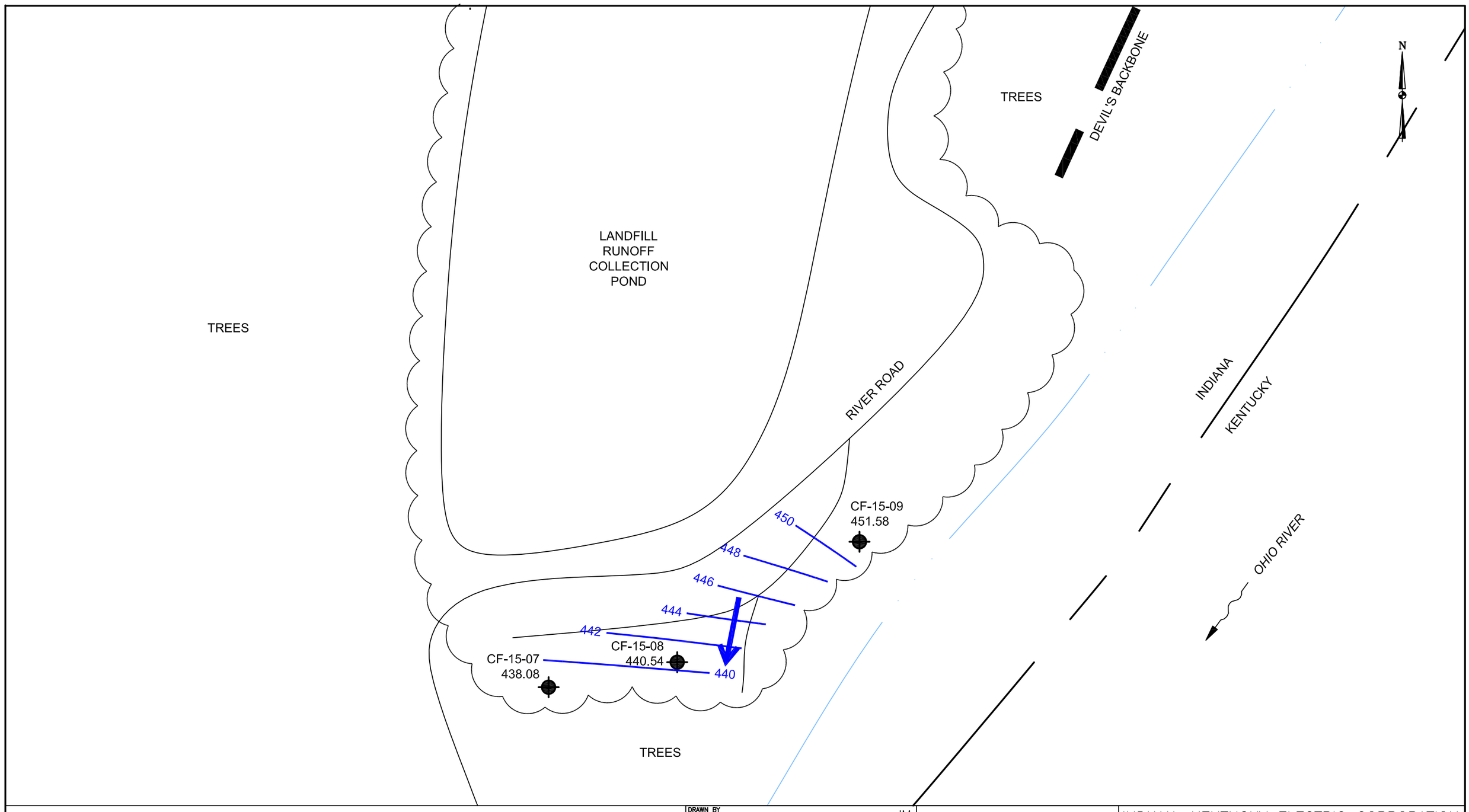
CLIFTY CREEK STATION
MADISON, INDIANA
TYPE I RESIDUAL WASTE LANDFILL AND
LANDFILL RUNOFF COLLECTION POND - SOUTHWEST END
GROUNDWATER LEVELS & FLOW DIRECTION - JANUARY 2016

DRAWING NAME: FIGURE B-10

REV. 0

Plot: 01/16/2018 11:43 _PROGRAMS-IKEC\Clifty Creek-CCR Program\CAD\2017 GW Monitoring-Corrective Action Rpt-Appx B\IKEC_Clifty_Corrective Action_Appx B_Jan16 b01.dwg\B-10



LEGEND:

MONITORING WELL LOCATION

GROUNDWATER FLOW DIRECTION

200' 0' 200' 400'

SCALE: 1"= 200'

DRAWN BY	JM
DATE	
CHECKED BY	
JOB NO.	2017114-CLI
DWG FILE	IKEC_Clifty_Corrective Action_Appx B_Mar16 b02.dwg
DRAWING SCALE	AS SHOWN

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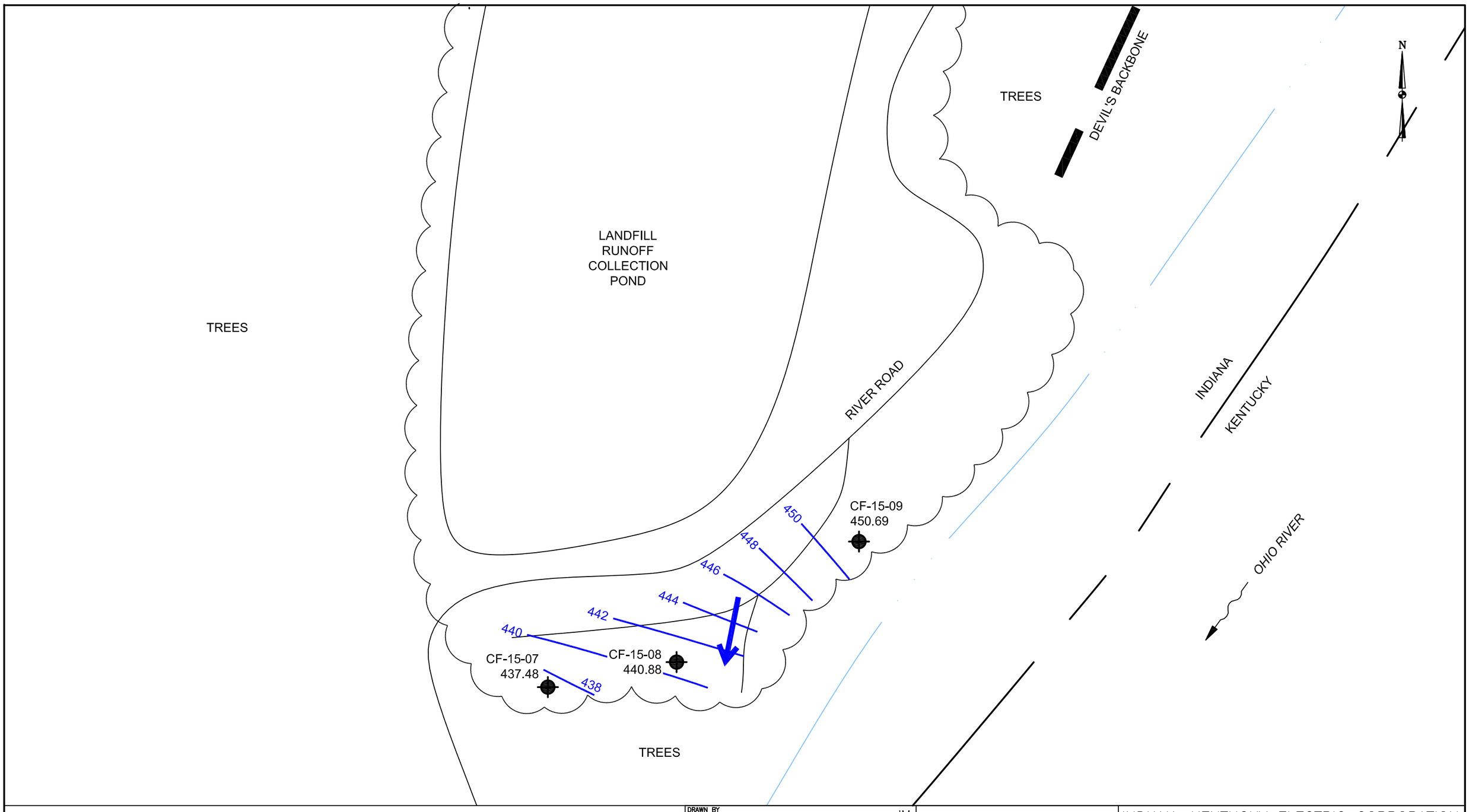
TYPE I RESIDUAL WASTE LANDFILL AND
LANDFILL RUNOFF COLLECTION POND – SOUTHWEST END
GROUNDWATER LEVELS & FLOW DIRECTION – MARCH 2016

DRAWING NAME: FIGURE B-11

REV.: 0

Plot: 01/16/2018 14:13 _PROGRAMS-IKEC\Clifty Creek-CCR Program\CAD\2017 GW Monitoring-Corrective Action Rpt-Appx B\IKEC_Clifty_Corrective Action_Appx B_Mar16 b02.dwg\B-11



LEGEND:

MONITORING WELL LOCATION

GROUNDWATER FLOW DIRECTION

200' 0' 200' 400'

SCALE: 1"= 200'

DRAWN BY	JM
DATE	
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JOB NO.	2017114-CLI
DWG FILE	IKEC_Clifty_Corrective Action_Appx B_May16 b03.dwg
DRAWING SCALE	AS SHOWN

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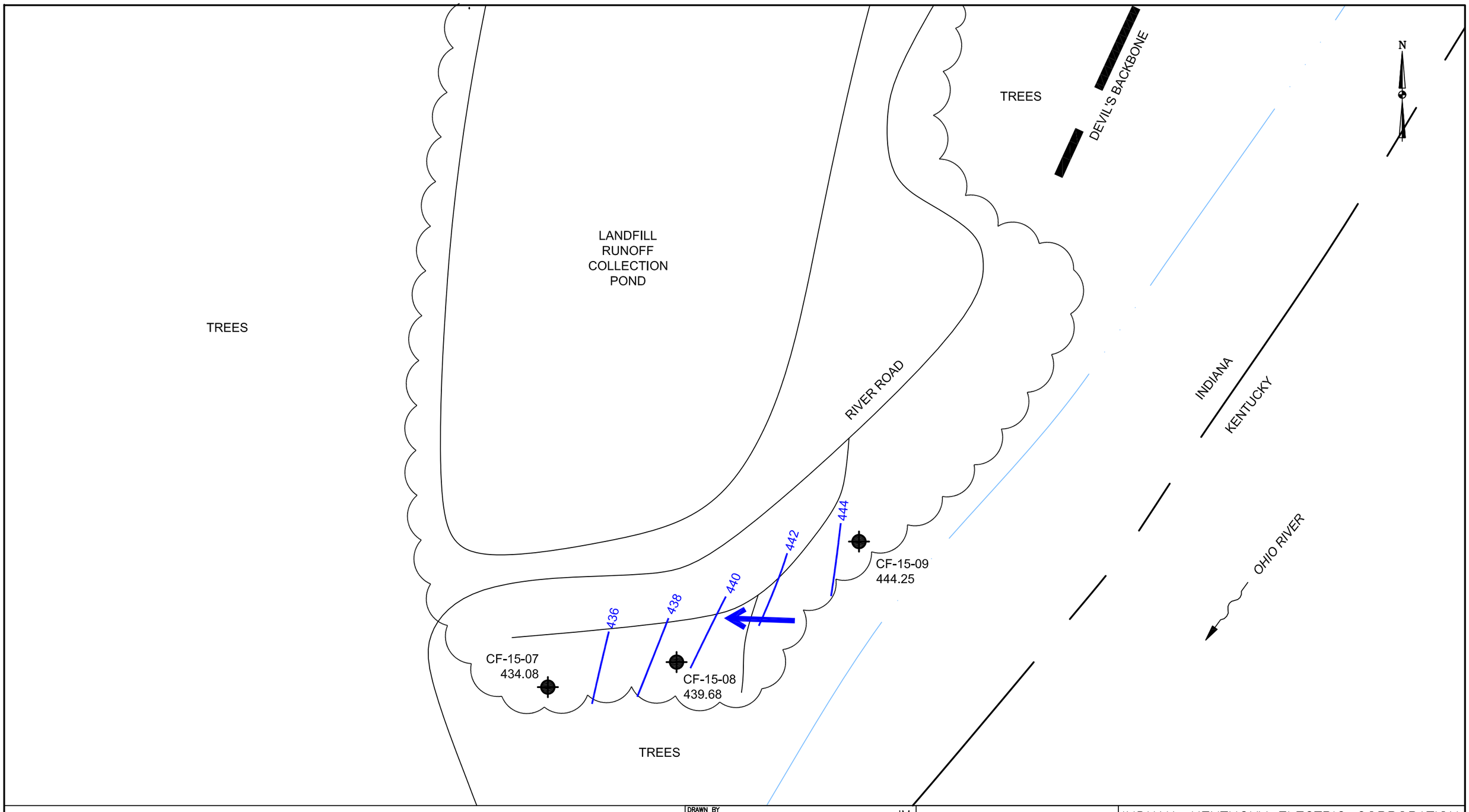
TYPE I RESIDUAL WASTE LANDFILL AND
LANDFILL RUNOFF COLLECTION POND - SOUTHWEST END
GROUNDWATER LEVELS & FLOW DIRECTION - MAY 2016

DRAWING NAME: FIGURE B-12

REV.: 0



LEGEND:

MONITORING WELL LOCATION

GROUNDWATER FLOW DIRECTION

200' 0' 200' 400'

SCALE: 1"= 200'

DRAWN BY	JM
DATE	
CHECKED BY	
JOB NO.	2017114-CLI
DWG FILE	IKEC_Clifty_Corrective Action_Appx B_July16 b04.dwg
DRAWING SCALE	AS SHOWN

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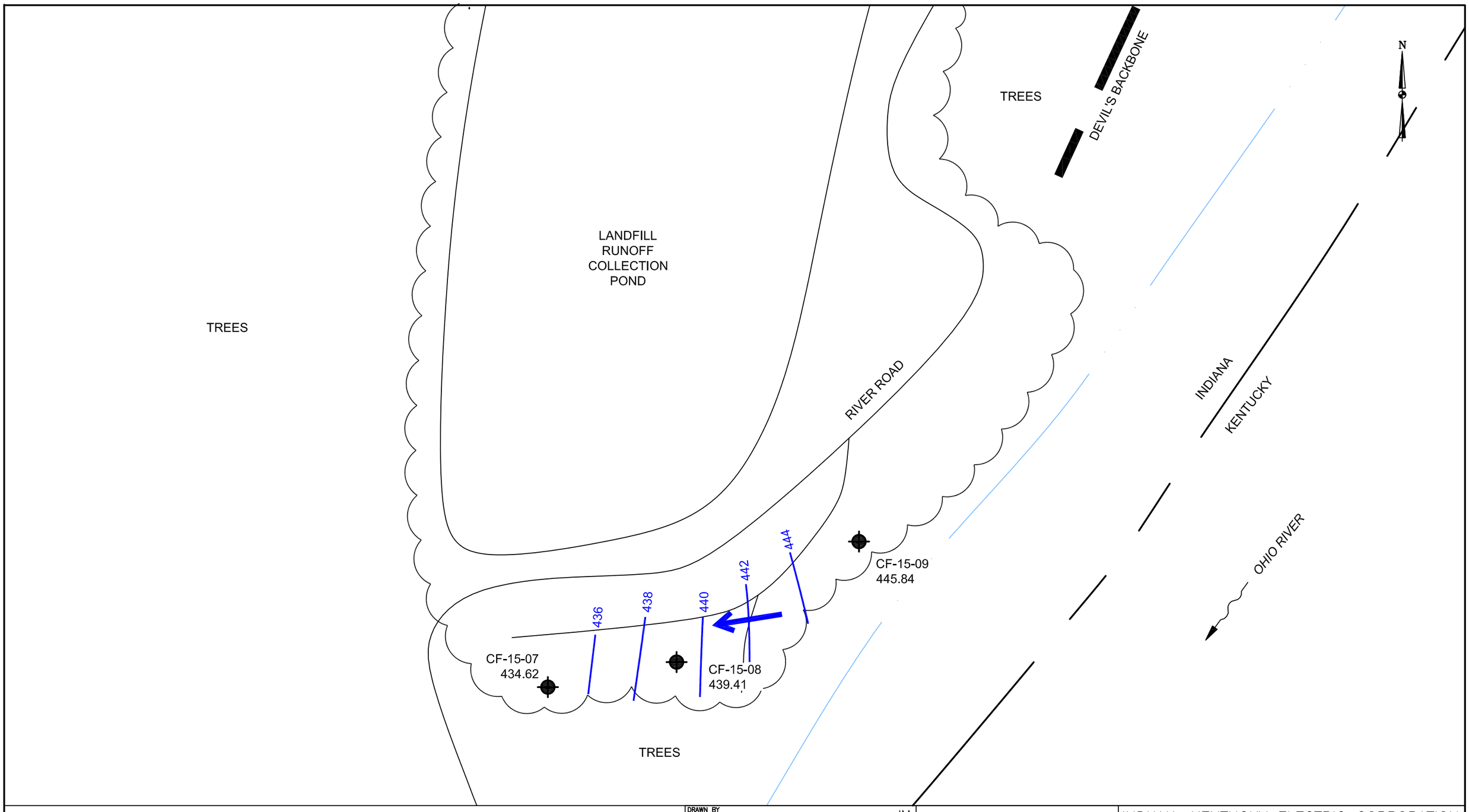
TYPE I RESIDUAL WASTE LANDFILL AND
LANDFILL RUNOFF COLLECTION POND - SOUTHWEST END
GROUNDWATER LEVELS & FLOW DIRECTION - JULY 2016

DRAWING NAME: FIGURE B-13

REV.: 0

Plot: 01/17/2018 10:59 _PROGRAMS-IKEC\Clifty Creek-CCR Program\CAD\2017 GW Monitoring-Corrective Action Rpt-Appx B\IKEC_Clifty_Corrective Action_Appx B_July16 b04.dwg\B-13



LEGEND:

MONITORING WELL LOCATION

GROUNDWATER FLOW DIRECTION

200' 0' 200' 400'

SCALE: 1"= 200'

DRAWN BY	JM
DATE	
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JOB NO.	2017114-CLI
DWG FILE	IKEC_Clifty_Corrective Action_Appx B_Aug16 b05.dwg
DRAWING SCALE	AS SHOWN

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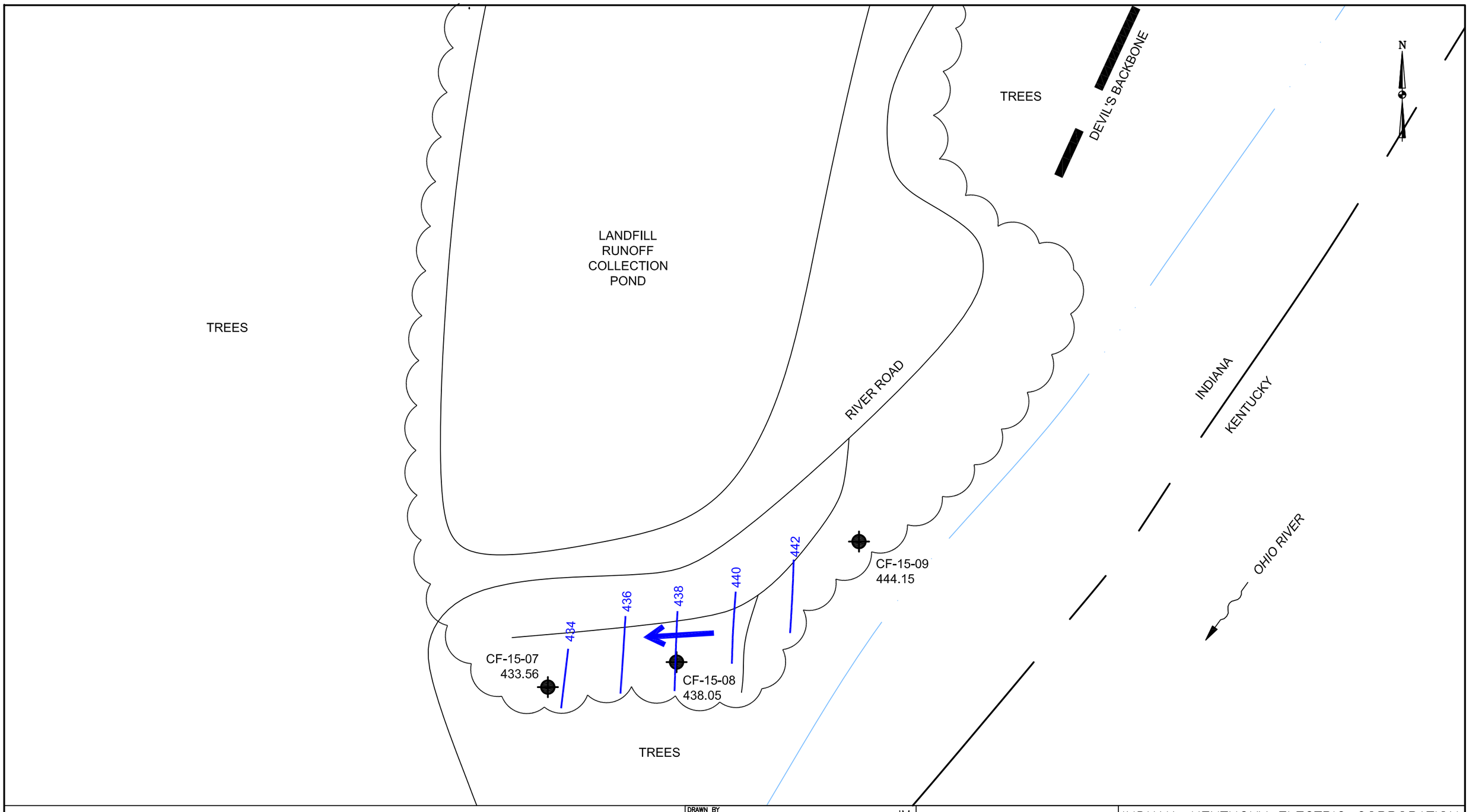
TYPE I RESIDUAL WASTE LANDFILL AND
LANDFILL RUNOFF COLLECTION POND - SOUTHWEST END
GROUNDWATER LEVELS & FLOW DIRECTION - AUGUST 2016

DRAWING NAME: FIGURE B-14

REV.: 0



LEGEND:

MONITORING WELL LOCATION

GROUNDWATER FLOW DIRECTION

200' 0' 200' 400'

SCALE: 1"= 200'

DRAWN BY	JM
DATE	
CHECKED BY	
JOB NO.	2017114-CLI
DWG FILE	IKEC_Clifty_Corrective Action_Appx B_Nov16 b06.dwg
DRAWING SCALE	AS SHOWN

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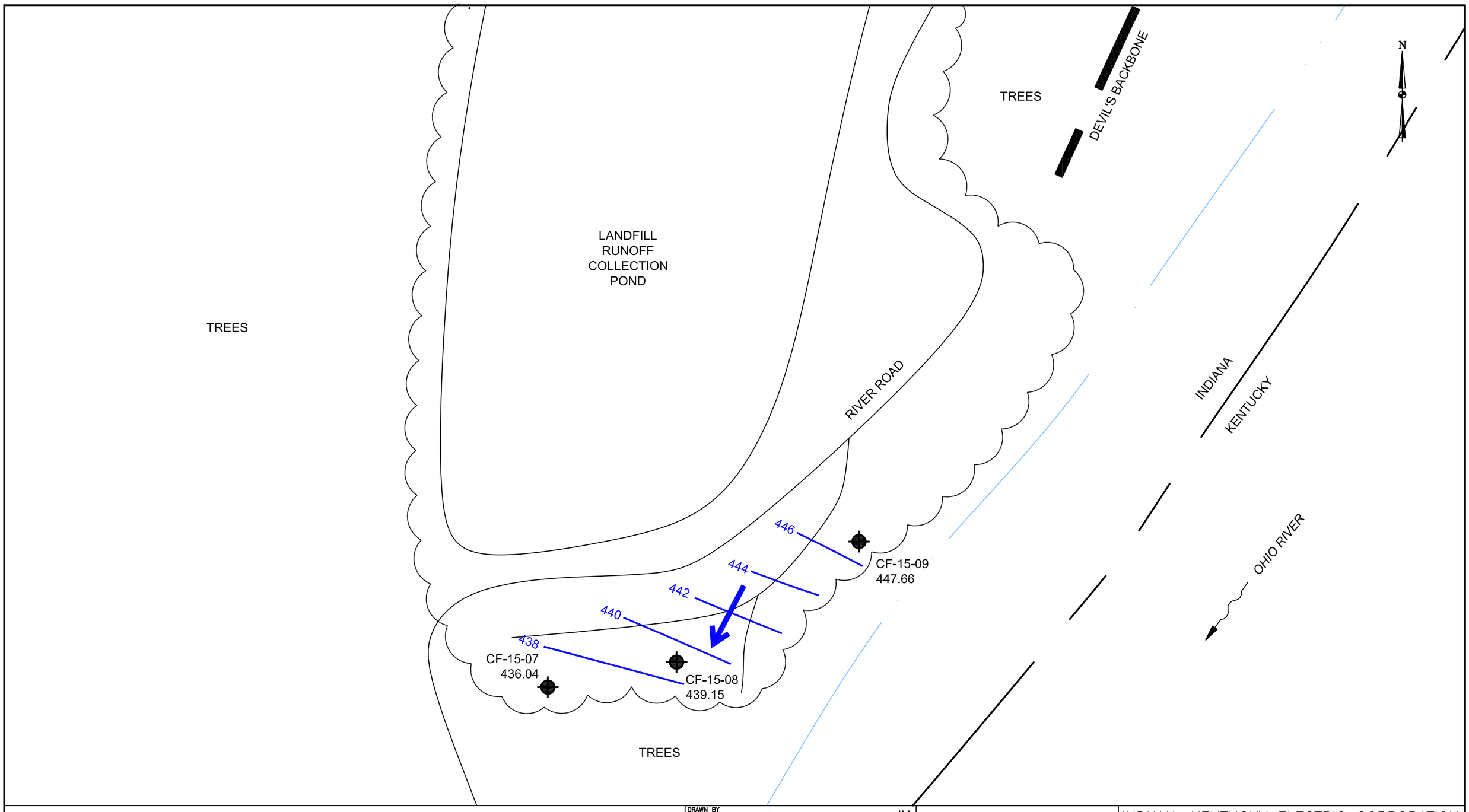
MADISON, INDIANA
TYPE I RESIDUAL WASTE LANDFILL AND
LANDFILL RUNOFF COLLECTION POND - SOUTHWEST END
GROUNDWATER LEVELS & FLOW DIRECTION - NOVEMBER 2016

DRAWING NAME: FIGURE B-15

REV.: 0

Plot: 01/18/2018 11:38 _PROGRAMS-IKEC\Clifty Creek-CCR Program\CAD\2017 GW Monitoring-Corrective Action Rpt-Appx B\IKEC_Clifty_Corrective Action_Appx B_Nov16 b06.dwg\B-15



LEGEND:

MONITORING WELL LOCATION

GROUNDWATER FLOW DIRECTION

200' 0' 200' 400'

SCALE: 1"= 200'

DRAWN BY	JM
DATE	
CHECKED BY	
JOB NO.	2017114-CLI
DWG FILE	IKEC_Clifty_Corrective Action_Appx B_Feb17 b07.dwg
DRAWING SCALE	AS SHOWN

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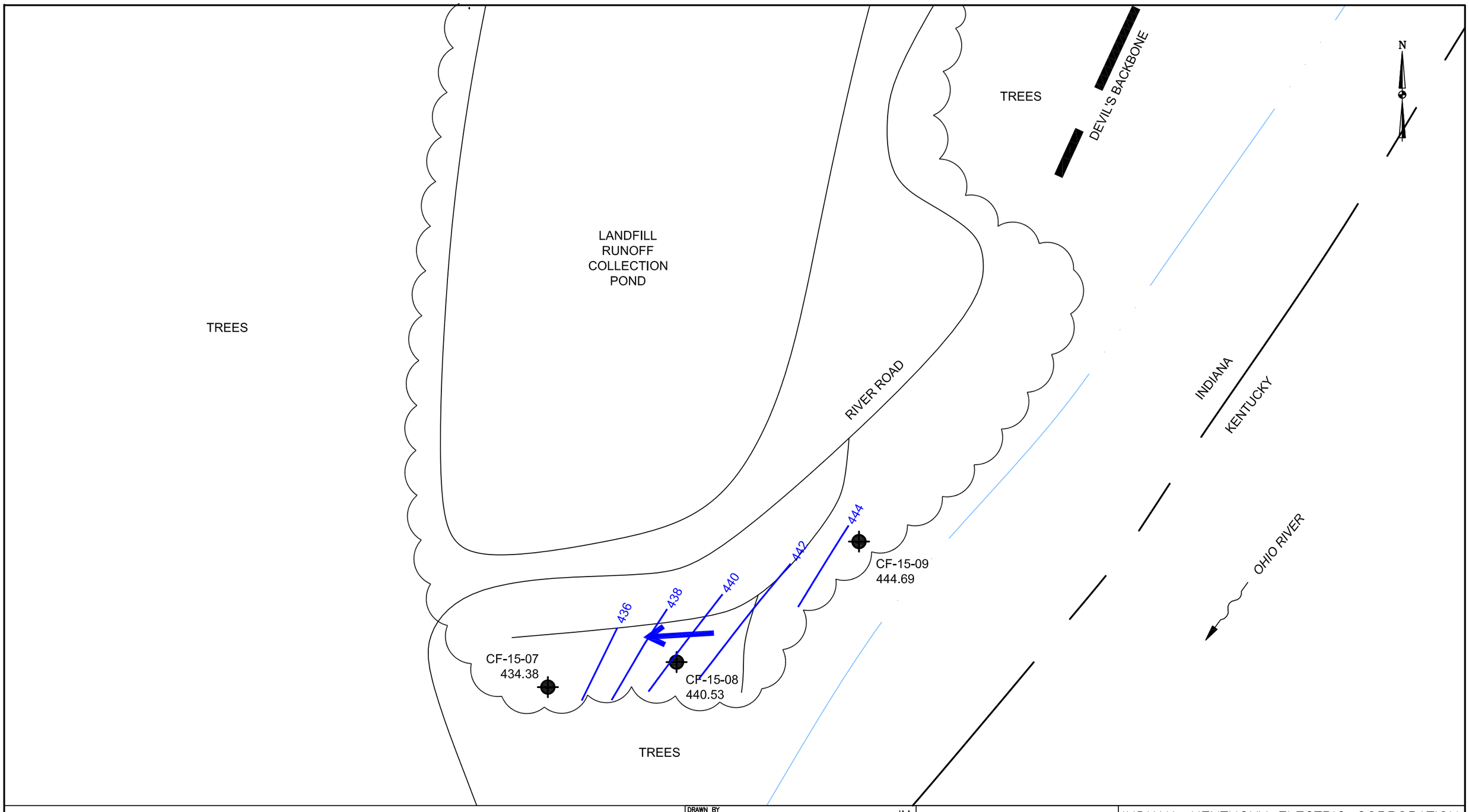
TYPE I RESIDUAL WASTE LANDFILL AND
LANDFILL RUNOFF COLLECTION POND – SOUTHWEST END
GROUNDWATER LEVELS & FLOW DIRECTION – FEBRUARY 2017

DRAWING NAME: FIGURE B-16

REV.: 0

Plot: 01/18/2018 14:38 _PROGRAMS-IKEC\Clifty Creek-CCR Program\CAD\2017 GW Monitoring-Corrective Action Rpt-Appx B\IKEC_Clifty_Corrective Action_Appx B_Feb17 b07.dwg\B-16



LEGEND:

MONITORING WELL LOCATION

GROUNDWATER FLOW DIRECTION

200' 0' 200' 400'

SCALE: 1"= 200'

DRAWN BY	JM
DATE	
CHECKED BY	
JOB NO.	2017114-CLI
DWG FILE	IKEC_Clifty_Corrective Action_Appx B_Jun17 b08.dwg
DRAWING SCALE	AS SHOWN

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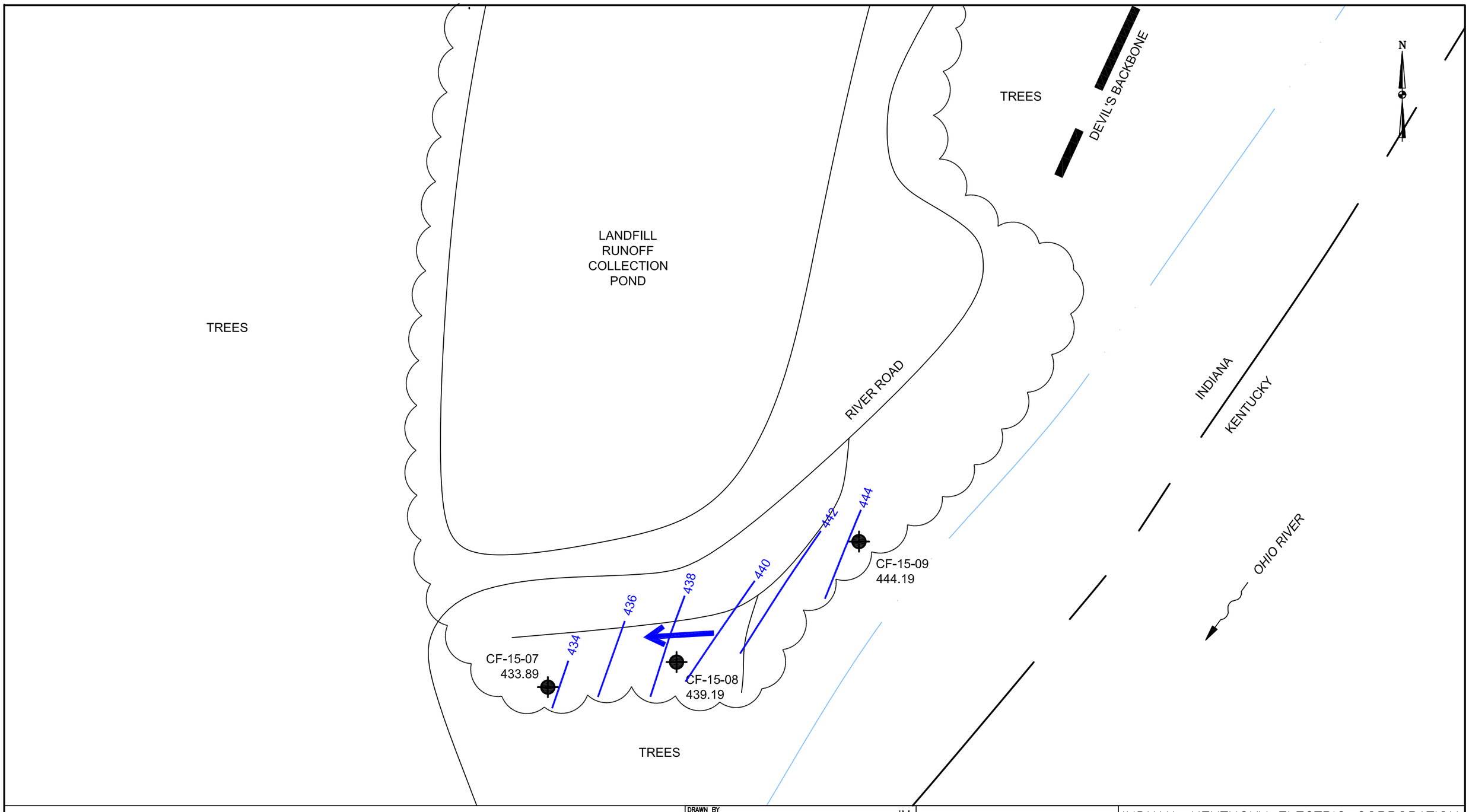
TYPE I RESIDUAL WASTE LANDFILL AND
LANDFILL RUNOFF COLLECTION POND – SOUTHWEST END
GROUNDWATER LEVELS & FLOW DIRECTION – JUNE 2017

DRAWING NAME: FIGURE B-17

REV.: 0

Plot: 01/18/2018 15:46 _PROGRAMS-IKEC\Clifty Creek-CCR Program\CAD\2017 GW Monitoring-Corrective Action Rpt-Appx B\IKEC_Clifty_Corrective Action_Appx B_Jun17 b08.dwg\B-17



LEGEND:

MONITORING WELL LOCATION

GROUNDWATER FLOW DIRECTION

200' 0' 200' 400'

SCALE: 1"= 200'

DRAWN BY	JM
DATE	
CHECKED BY	
JOB NO.	2017114-CLI
DWG FILE	IKEC_Clifty_Corrective Action_Appx B_Aug17 b09.dwg
DRAWING SCALE	AS SHOWN

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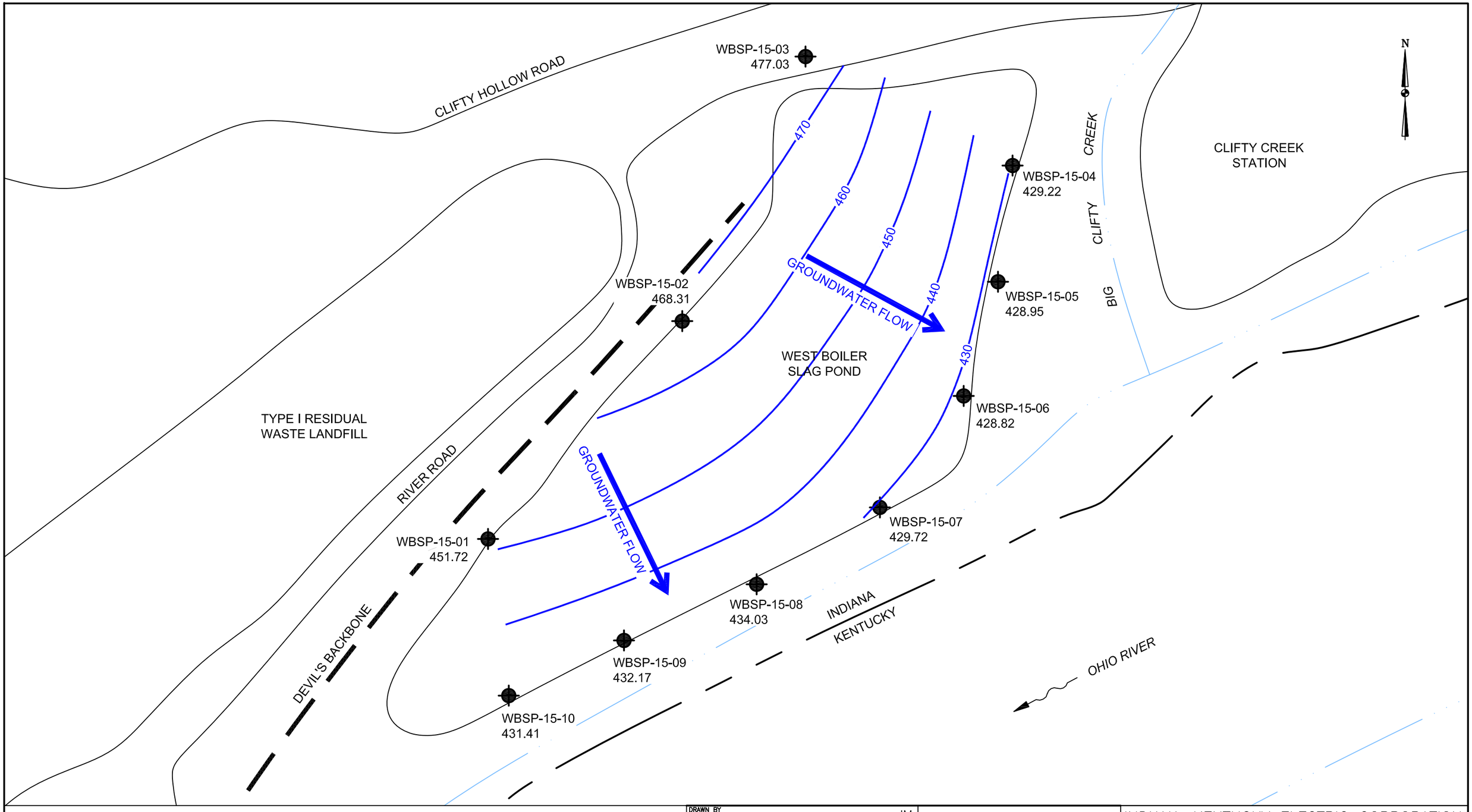
CLIFTY CREEK STATION
MADISON, INDIANA
TYPE I RESIDUAL WASTE LANDFILL AND
LANDFILL RUNOFF COLLECTION POND - SOUTHWEST END
GROUNDWATER LEVELS & FLOW DIRECTION - AUGUST 2017

DRAWING NAME: FIGURE B-18

REV.: 0

Plot: 01/19/2018 15:08 _PROGRAMS-IKEC\Clifty Creek-CCR Program\CAD\2017 GW Monitoring-Corrective Action Rpt-Appx B\IKEC_Clifty_Corrective Action_Appx B_Aug17 b09.dwg\B-18

West Boiler Slag Pond



LEGEND:

- MONITORING WELL LOCATION
- GROUNDWATER FLOW DIRECTION

400' 0' 400' 800'

SCALE: 1"= 400'

DRAWN BY	JM
DATE	
CHECKED BY	
JOB NO.	2017114-CLI
DWG FILE	IKEC_Clifty_Corrective Action_Appx B_Jan16 b01.dwg
DRAWING SCALE	AS SHOWN

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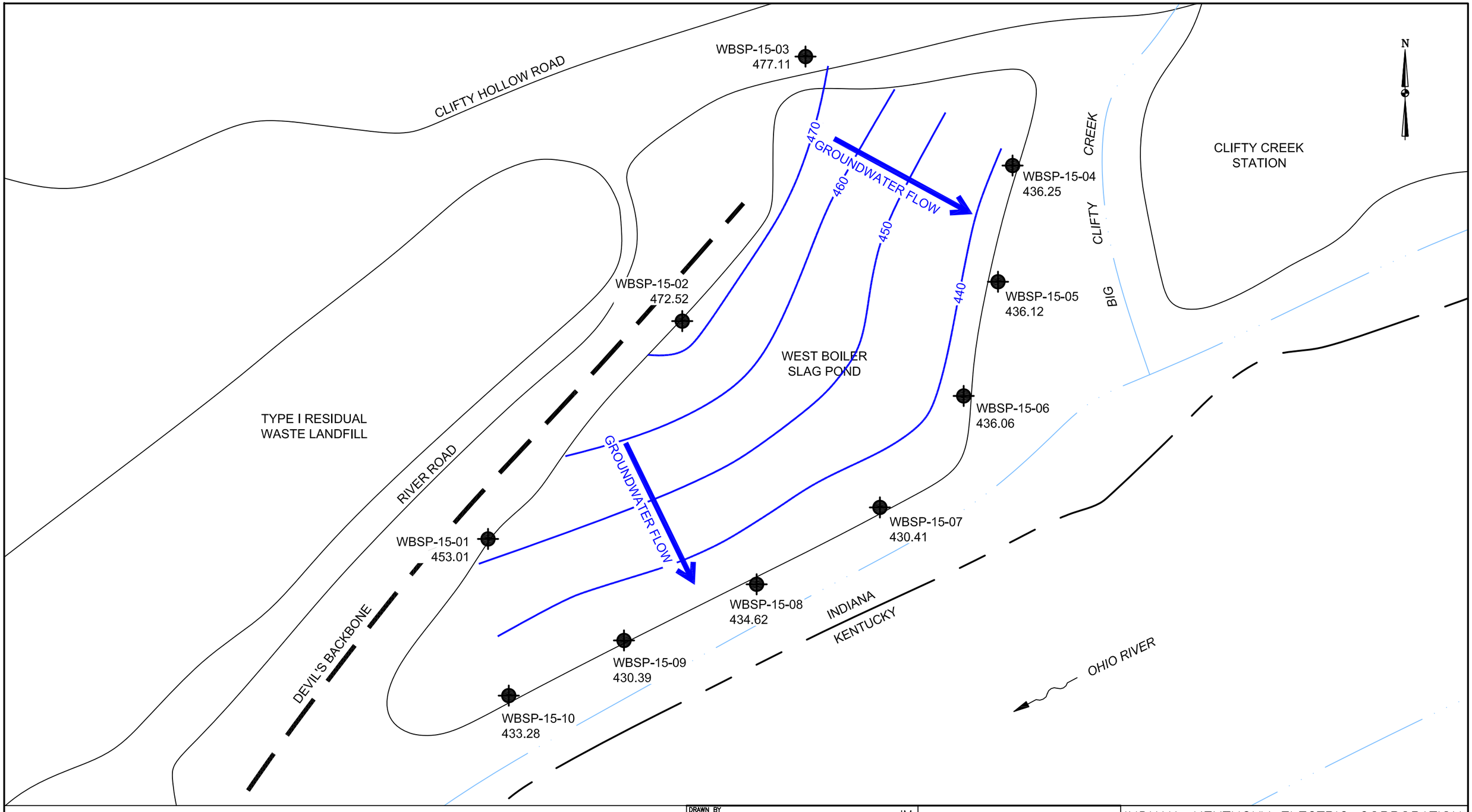
CLIFTY CREEK STATION
MADISON, INDIANA
WEST BOILER SLAG POND
GROUNDWATER LEVELS & FLOW DIRECTION - JANUARY 2016

DRAWING NAME: FIGURE B-19

REV. 0

Plot: 01/16/2018 11:50 _PROGRAMS-IKEC\Clifty Creek-CCR Program\CAD\2017 GW Monitoring-Corrective Action Rpt-Appx B\IKEC_Clifty_Corrective Action_Appx B_Jan16 b01.dwg\B-19



LEGEND:

MONITORING WELL LOCATION

GROUNDWATER FLOW DIRECTION

400' 0' 400' 800'

SCALE: 1"= 400'

DRAWN BY	JM
DATE	
CHECKED BY	
JOB NO.	2017114-CLI
DWG FILE	IKEC_Clifty_Corrective Action_Appx B_Mar16 b02.dwg
DRAWING SCALE	AS SHOWN

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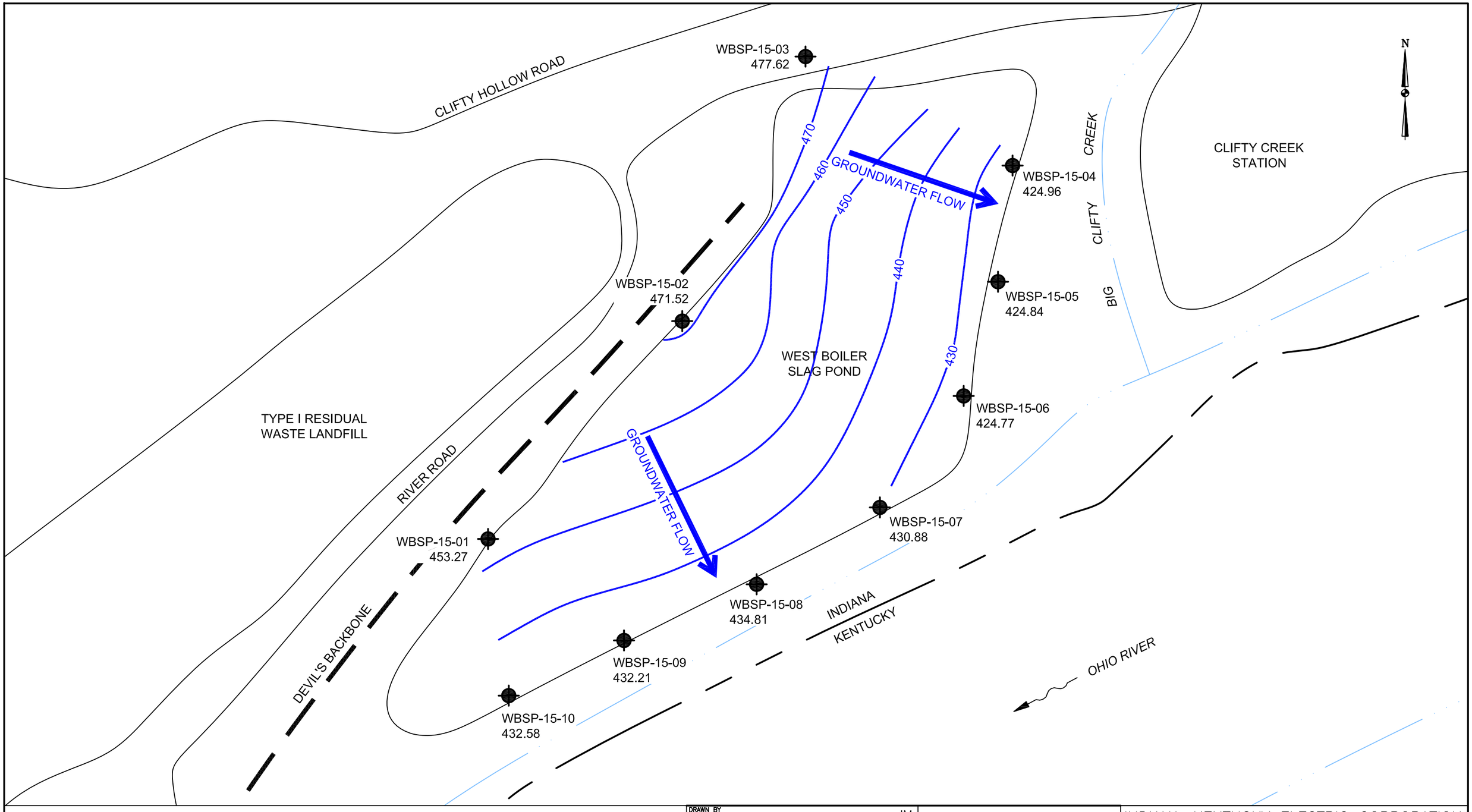
INDIANA-KENTUCKY ELECTRIC CORPORATION

CLIFTY CREEK STATION
MADISON, INDIANA
WEST BOILER SLAG POND
GROUNDWATER LEVELS & FLOW DIRECTION - MARCH 2016

DRAWING NAME: FIGURE B-20

REV. 0

Plot: 01/16/2018 14:21 _PROGRAMS-IKEC\Clifty Creek-CCR Program\CAD\2017 GW Monitoring-Corrective Action Rpt-Appx B\IKEC_Clifty_Corrective Action_Appx B_Mar16 b02.dwg\B-20



LEGEND:

- MONITORING WELL LOCATION
- GROUNDWATER FLOW DIRECTION

400' 0' 400' 800'

SCALE: 1"= 400'

DRAWN BY	JM
DATE	
CHECKED BY	
JOB NO.	2017114-CLI
DWG FILE	IKEC_Clifty_Corrective Action_Appx B_May16 b03.dwg
DRAWING SCALE	AS SHOWN

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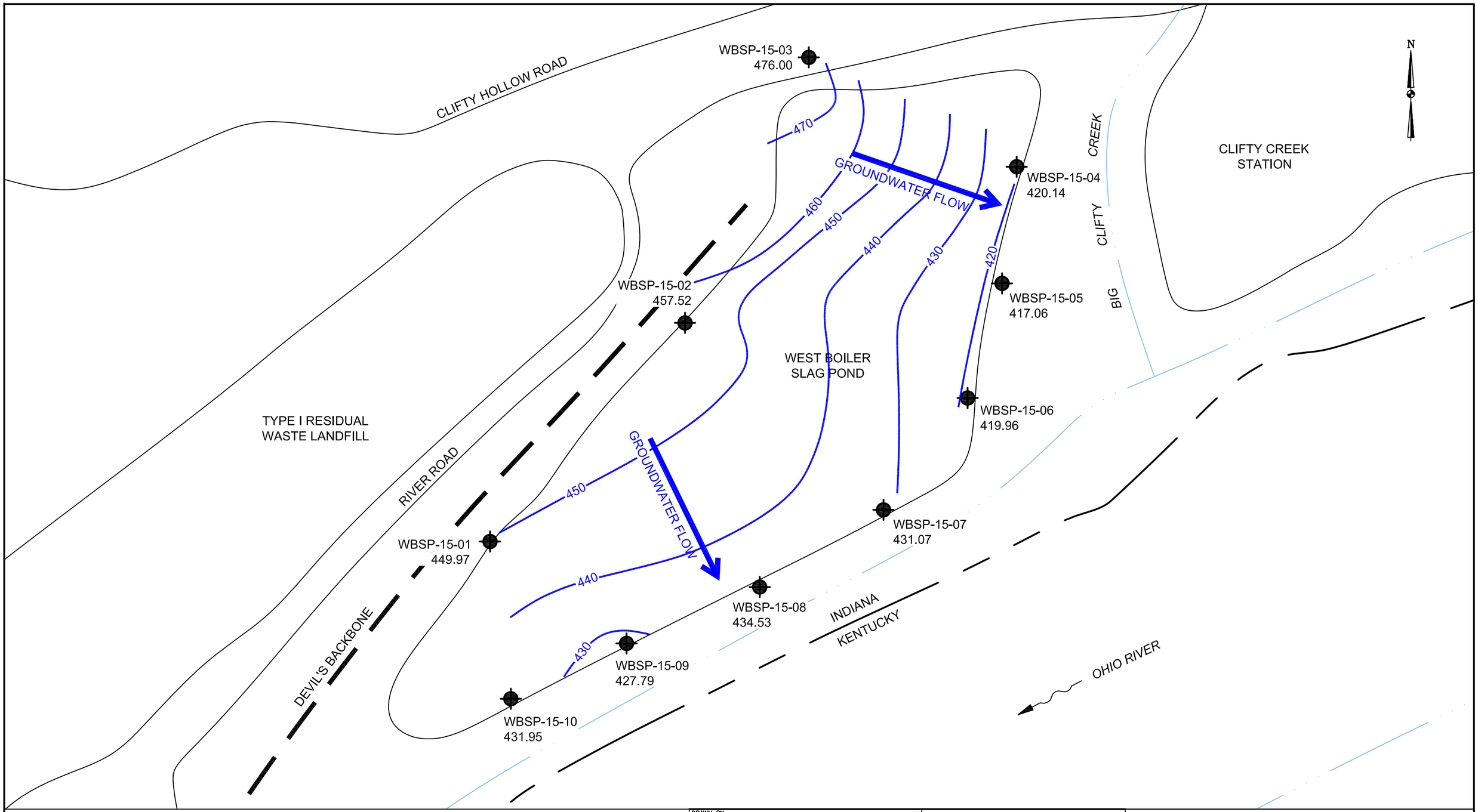
CLIFTY CREEK STATION
MADISON, INDIANA
WEST BOILER SLAG POND
GROUNDWATER LEVELS & FLOW DIRECTION - MAY 2016

DRAWING NAME: FIGURE B-21

REV. 0

Plot: 01/16/2018 15:32 _PROGRAMS-IKEC\Clifty Creek-CCR Program\CAD\2017 GW Monitoring-Corrective Action Rpt-Appx B\IKEC_Clifty_Corrective Action_Appx B_May16 b03.dwg\B-21



LEGEND:

- MONITORING WELL LOCATION
- GROUNDWATER FLOW DIRECTION

400' 0' 400' 800'

SCALE: 1"= 400'

DRAWN BY	JM
DATE	
CHECKED BY	
JOB NO.	2017114-CLI
DWG FILE	IKEC_Clifty_Corrective Action_Appx B_July16 b04.dwg
DRAWING SCALE	AS SHOWN

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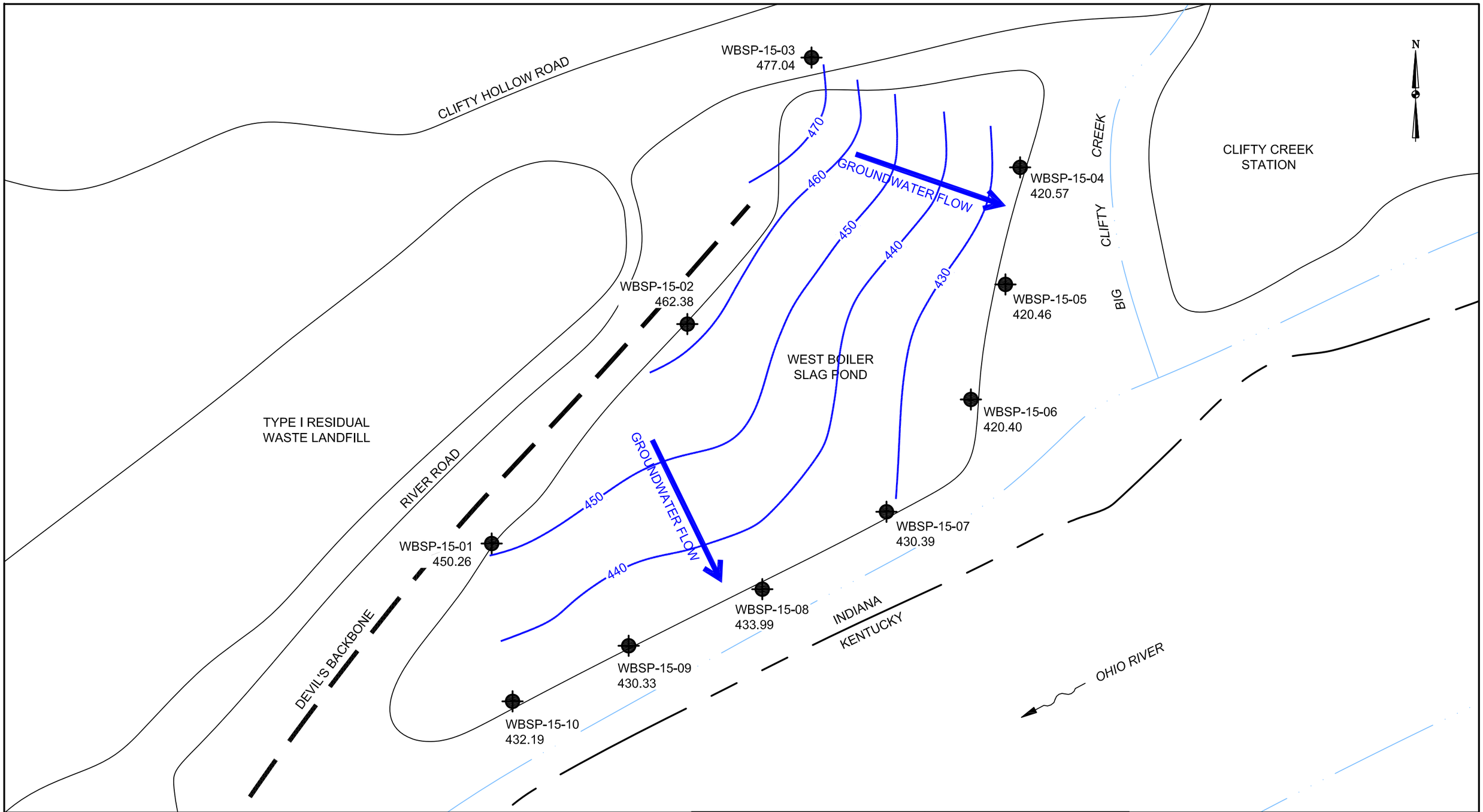
INDIANA-KENTUCKY ELECTRIC CORPORATION

CLIFTY CREEK STATION
MADISON, INDIANA
WEST BOILER SLAG POND
GROUNDWATER LEVELS & FLOW DIRECTION - JULY 2016

DRAWING NAME: FIGURE B-22

REV. 0

Plot: 01/17/2018 11:40 _PROGRAMS-IKEC\Clifty Creek-CCR Program\CAD\2017 GW Monitoring-Corrective Action Rpt-Appx B\IKEC_Clifty_Corrective Action_Appx B_July16 b04.dwg\B-22



LEGEND:

- MONITORING WELL LOCATION
- GROUNDWATER FLOW DIRECTION

400' 0' 400' 800'

SCALE: 1"= 400'

DRAWN BY	JM
DATE	
CHECKED BY	
JOB NO.	2017114-CLI
DWG FILE	IKEC_Clifty_Corrective Action_Appx B_Aug16 b05.dwg
DRAWING SCALE	AS SHOWN

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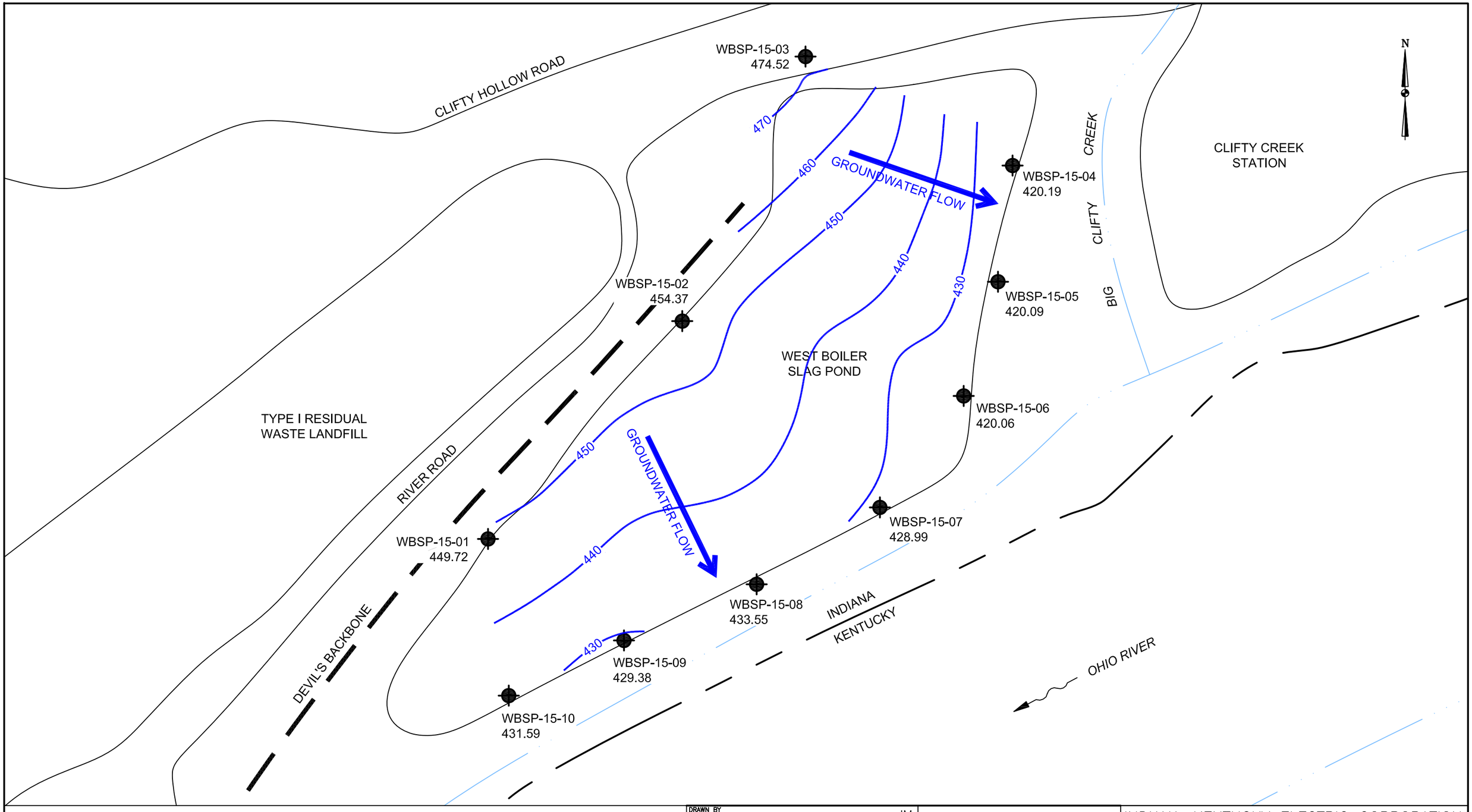
INDIANA-KENTUCKY ELECTRIC CORPORATION

CLIFTY CREEK STATION
MADISON, INDIANA
WEST BOILER SLAG POND
GROUNDWATER LEVELS & FLOW DIRECTION - AUGUST 2016

DRAWING NAME: FIGURE B-23

REV. 0

Plot: 01/18/2018 10:15 _PROGRAMS-IKEC\Clifty Creek-CCR Program\CAD\2017 GW Monitoring-Corrective Action Rpt-Appx B\IKEC_Clifty_Corrective Action_Appx B_Aug16 b05.dwg\B-23



LEGEND:

- MONITORING WELL LOCATION
- GROUNDWATER FLOW DIRECTION

400' 0' 400' 800'

SCALE: 1"= 400'

DRAWN BY	JM
DATE	
CHECKED BY	
JOB NO.	2017114-CLI
DWG FILE	IKEC_Clifty_Corrective Action_Appx B_Nov16 b06.dwg
DRAWING SCALE	AS SHOWN

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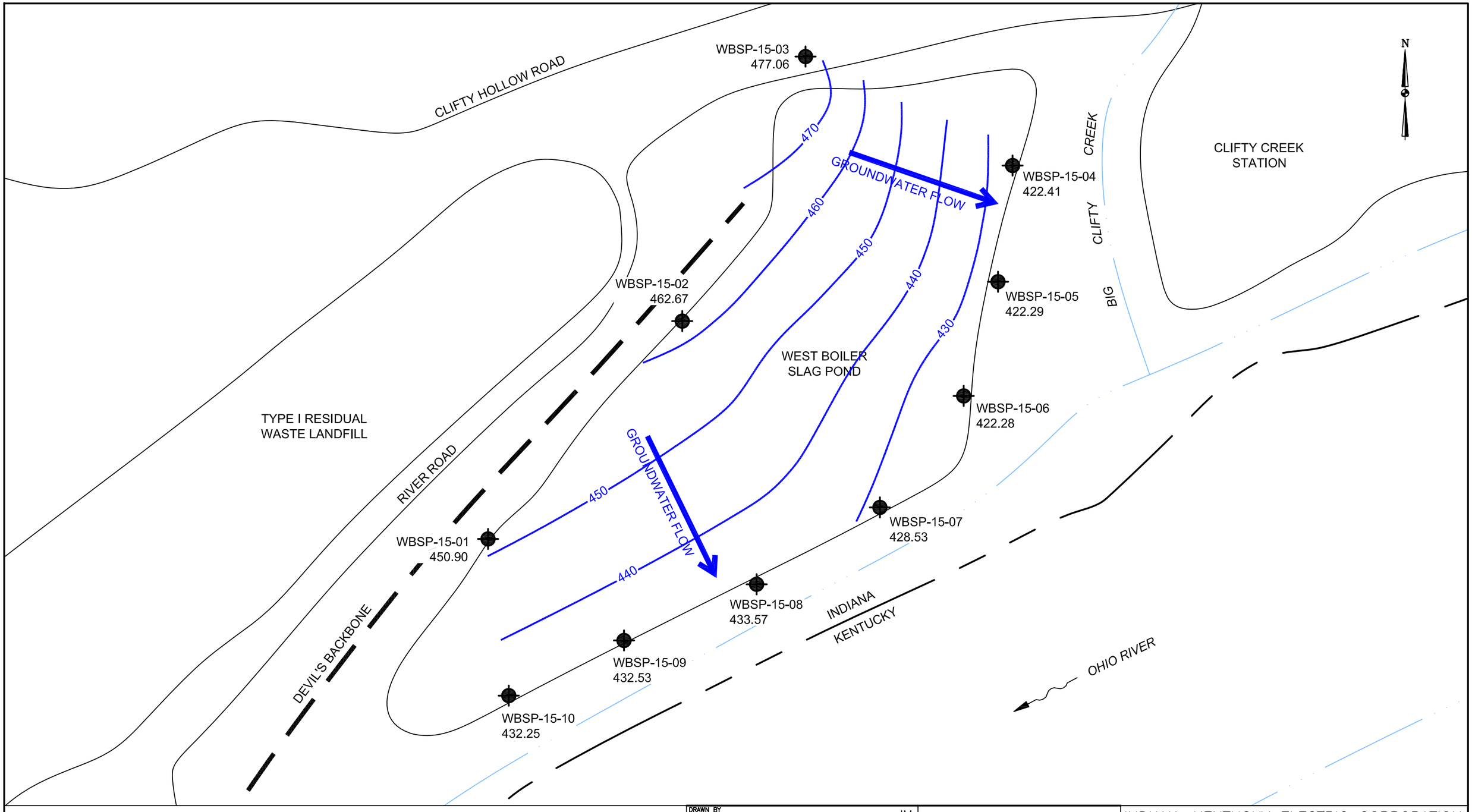
INDIANA-KENTUCKY ELECTRIC CORPORATION

CLIFTY CREEK STATION
MADISON, INDIANA
WEST BOILER SLAG POND
GROUNDWATER LEVELS & FLOW DIRECTION - NOVEMBER 2016

DRAWING NAME: FIGURE B-24

REV. 0

Plot: 01/18/2018 13:45 _PROGRAMS-IKEC\Clifty Creek-CCR Program\CAD\2017 GW Monitoring-Corrective Action Rpt-Appx B\IKEC_Clifty_Corrective Action_Appx B_Nov16 b06.dwg\B-24



LEGEND:

- MONITORING WELL LOCATION
- GROUNDWATER FLOW DIRECTION

400' 0' 400' 800'

SCALE: 1"= 400'

DRAWN BY	JM
DATE	
CHECKED BY	
JOB NO.	2017114-CLI
DWG FILE	IKEC_Clifty_Corrective Action_Appx B_Feb17 b07.dwg
DRAWING SCALE	AS SHOWN

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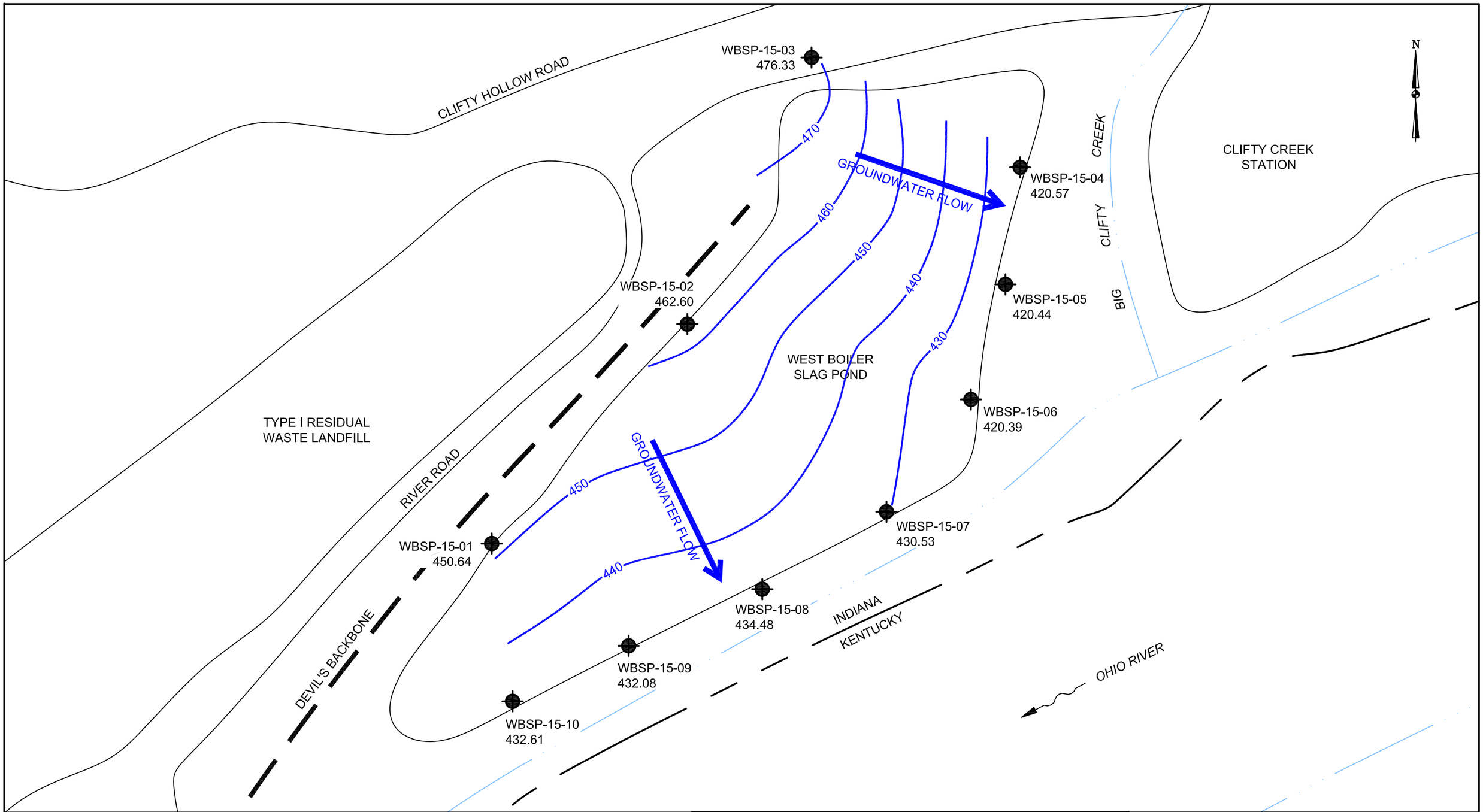
INDIANA-KENTUCKY ELECTRIC CORPORATION

CLIFTY CREEK STATION
MADISON, INDIANA
WEST BOILER SLAG POND
GROUNDWATER LEVELS & FLOW DIRECTION - FEBRUARY 2017

DRAWING NAME: FIGURE B-25

REV. 0

Plot: 01/18/2018 15:04 _PROGRAMS-IKEC\Clifty Creek-CCR Program\CAD\2017 GW Monitoring-Corrective Action Rpt-Appx B\IKEC_Clifty_Corrective Action_Appx B_Feb17 b07.dwg\B-25



LEGEND:

- MONITORING WELL LOCATION
- GROUNDWATER FLOW DIRECTION

400' 0' 400' 800'

SCALE: 1"= 400'

DRAWN BY	JM
DATE	
CHECKED BY	
JOB NO.	2017114-CLI
DWG FILE	IKEC_Clifty_Corrective Action_Appx B_Jun17 b08.dwg
DRAWING SCALE	AS SHOWN

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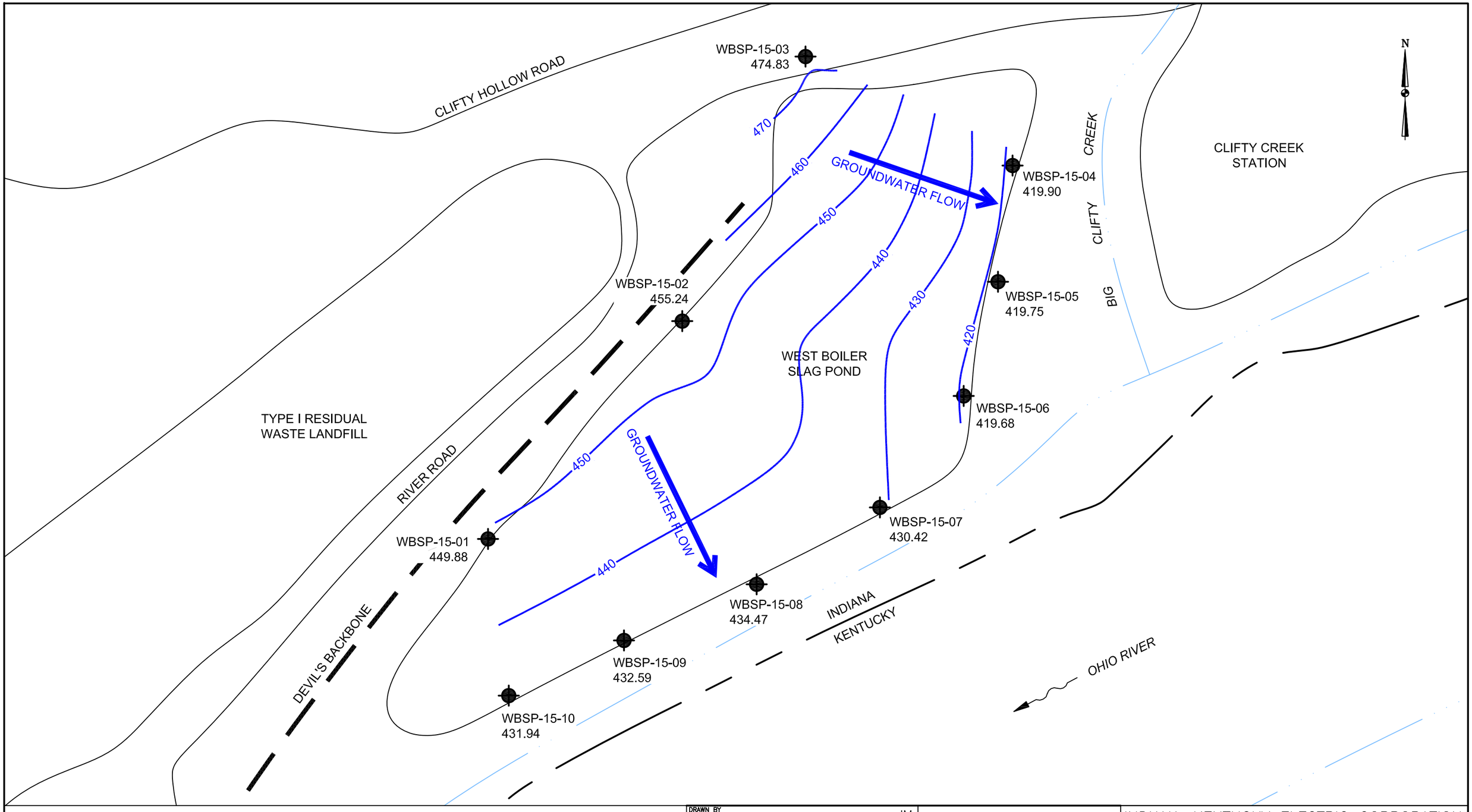
INDIANA-KENTUCKY ELECTRIC CORPORATION

CLIFTY CREEK STATION
MADISON, INDIANA
WEST BOILER SLAG POND
GROUNDWATER LEVELS & FLOW DIRECTION - JUNE 2017

DRAWING NAME: FIGURE B-26

REV. 0



LEGEND:

- MONITORING WELL LOCATION
- GROUNDWATER FLOW DIRECTION

400' 0' 400' 800'

SCALE: 1"= 400'

DRAWN BY	JM
DATE	
CHECKED BY	
JOB NO.	2017114-CLI
DWG FILE	IKEC_Clifty_Corrective Action_Appx B_Aug17 b09.dwg
DRAWING SCALE	AS SHOWN

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INDIANA-KENTUCKY ELECTRIC CORPORATION

CLIFTY CREEK STATION
MADISON, INDIANA
WEST BOILER SLAG POND
GROUNDWATER LEVELS & FLOW DIRECTION - AUGUST 2017

DRAWING NAME: FIGURE B-27

REV. 0

Plot: 01/19/2018 15:30 _PROGRAMS-IKEC\Clifty Creek-CCR Program\CAD\2017 GW Monitoring-Corrective Action Rpt-Appx B\IKEC_Clifty_Corrective Action_Appx B_Aug17 b09.dwg\B-27

APPENDIX C

APPENDIX III AND APPENDIX IV CONSTITUENTS

APPENDIX III AND APPENDIX IV CONSTITUENTS

Appendix III Constituents (Detection Monitoring)	
Constituent	**MCL (mg/L)**
Boron, B	None
Calcium, Ca	None
Chloride, Cl	250
Fluoride, F	4.0
pH (units=SU)	6.5 – 8.5
Sulfate, SO4	250
Total Dissolved Solids (TDS)	500
Appendix IV Constituents (Assessment Monitoring)	
Constituent	**MCL (mg/L)**
Antimony, Sb	0.006
Arsenic, As	0.01
Barium, Ba	2
Beryllium, Be	0.004
Cadmium, Cd	0.005
Chromium, Cr	0.1
Cobalt, Co	None
Fluoride, F	4.0
Lithium, Li	None
Lead, Pb	0.015
Mercury, Hg	0.002
Molybdenum, Mo	None
Radium 226 & 228 (combined)(units=pCi/L)	5
Selenium, Se	0.05
Thallium, Tl	0.002

APPENDIX D

ANALYTICAL RESULTS

Type I Residual Waste Landfill and Landfill Runoff Collection Pond

CF-15-01
SUMMARY OF ANALYTICAL RESULTS
Indiana-Kentucky Electric Corporation
Clifty Creek Station
Madison, Indiana

Parameter	Units	Jan-16	Mar-16	May-16	Jul-16	Aug-16
Appendix III Constituents						
Boron, B	mg/L	1.62	1.07	0.942	1.05	1.27
Calcium, Ca	mg/L	170	124	138	161	161
Chloride, Cl	mg/L	20	31.4	19.4	35.1	20.2
Fluoride, F	mg/L	0.25 U	0.1 J	0.17	0.14	0.1 J
pH	s.u.	7.42	7	7.47	7.46	7.39
Sulfate, SO4	mg/L	259	207	184	254	216
Total Dissolved Solids (TDS)	mg/L	716	516	546	660	630
Appendix IV Constituents						
Antimony, Sb	ug/L	0.1 U	0.03 J	0.07	0.08	0.06 J
Arsenic, As	ug/L	3.19	2.96	1.46	0.82	0.93
Barium, Ba	ug/L	99.7	82.1	56.5	66.6	65.7
Beryllium, Be	ug/L	0.05	0.02 U	0.006 J	0.007 J	0.1 U
Cadmium, Cd	ug/L	0.05 U	0.02	0.08	0.13	0.15
Chromium, Cr	ug/L	0.8	0.1	0.3	0.2	0.3
Cobalt, Co	ug/L	1.42	1.13	1.1	1.08	1.34
Fluoride, F	mg/L	0.25 U	0.1 J	0.17	0.14	0.1 J
Lithium, Li	mg/L	0.005 U	0.007	0.01	0.016	0.01
Lead, Pb	ug/L	0.812	0.088	0.135	0.179	0.201
Mercury, Hg	ug/L	0.005 U	0.005 U	0.005 U	0.002 J	0.005 U
Molybdenum, Mo	ug/L	17.3	13.7	19.3	22.4	24.1
Radium 226 & 228 (combined)	pCi/L	0.315 U	0.94 U	0.419	1.1483	1.03
Selenium, Se	ug/L	0.2	0.2	0.4	0.06 J	0.2 J
Thallium, Tl	ug/L	0.02 U	0.01 J	0.01 J	0.02 J	0.2 U

CF-15-01
SUMMARY OF ANALYTICAL RESULTS
Indiana-Kentucky Electric Corporation
Clifty Creek Station
Madison, Indiana

Parameter	Units	Nov-16	Feb-17	Jun-17	Aug-17
Appendix III Constituents					
Boron, B	mg/L	1.65	1.95	1.12	1.35
Calcium, Ca	mg/L	176	155	116	166
Chloride, Cl	mg/L	25.8	28.8	16.4	28.3
Fluoride, F	mg/L	0.1 J	0.15	0.1 J	0.16
pH	s.u.	6.58	7.06	6.22	7.43
Sulfate, SO4	mg/L	250	224	152	271
Total Dissolved Solids (TDS)	mg/L	690	666	530	676
Appendix IV Constituents					
Antimony, Sb	ug/L	0.09	0.07	0.05	0.06 J
Arsenic, As	ug/L	0.88	0.95	0.57	0.61
Barium, Ba	ug/L	62.2	79	49.1	55.8
Beryllium, Be	ug/L	0.01 J	0.01 J	0.006 J	0.01 J
Cadmium, Cd	ug/L	0.1	0.12	0.12	0.12
Chromium, Cr	ug/L	0.211	0.209	0.097	0.408
Cobalt, Co	ug/L	1.02	1.04	0.645	0.773
Fluoride, F	mg/L	0.1 J	0.15	0.1 J	0.16
Lithium, Li	mg/L	0.022	0.011	0.006	0.017
Lead, Pb	ug/L	0.148	0.239	0.106	0.155
Mercury, Hg	ug/L	0.004 J	0.005 U	1.2	0.005 U
Molybdenum, Mo	ug/L	26.5	16.7	17.5	21.7
Radium 226 & 228 (combined)	pCi/L	0.639	1.186	34.176	0.439
Selenium, Se	ug/L	0.1	0.09 J	0.1	0.07 J
Thallium, Tl	ug/L	0.03 J	0.05	0.02 J	0.04 J

CF-15-02
SUMMARY OF ANALYTICAL RESULTS
Indiana-Kentucky Electric Corporation
Clifty Creek Station
Madison, Indiana

Parameter	Units	Jan-16	Mar-16	May-16	Jul-16	Aug-16
Appendix III Constituents						
Boron, B	mg/L	10.4	10.4	10.3	8.88	10.1
Calcium, Ca	mg/L	310	286	292	261	293
Chloride, Cl	mg/L	42.6	43.6	42.2	43.1	43.6
Fluoride, F	mg/L	0.25 U	0.2 U	0.21	0.25	0.22
pH	s.u.	7.23	6.89	7.41	7.46	7.37
Sulfate, SO4	mg/L	1140	1160	1120	976	1130
Total Dissolved Solids (TDS)	mg/L	1980	2050	1930	1800	1960
Appendix IV Constituents						
Antimony, Sb	ug/L	0.11	0.01 J	0.1	0.1	0.07 J
Arsenic, As	ug/L	5.86	2.5	6.16	6.04	5.46
Barium, Ba	ug/L	64.1	24.9	67.8	85.6	51
Beryllium, Be	ug/L	0.01 U	0.02 U	0.04 U	0.005 J	0.1 U
Cadmium, Cd	ug/L	0.27	0.02 U	0.04 U	0.15	0.1 U
Chromium, Cr	ug/L	0.2	0.05 J	0.3	0.2	0.3
Cobalt, Co	ug/L	3.2	1.49	2.95	2.83	3.02
Fluoride, F	mg/L	0.25 U	0.2 U	0.21	0.25	0.22
Lithium, Li	mg/L	0.595	0.632	0.577	0.486	0.578
Lead, Pb	ug/L	0.239	0.066	0.131	0.328	0.295
Mercury, Hg	ug/L	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Molybdenum, Mo	ug/L	1980	1720	3080	2700	2490
Radium 226 & 228 (combined)	pCi/L	0.575	0.16 U	0.666	1.843	1.211
Selenium, Se	ug/L	0.1	0.04 J	0.1 J	0.1	0.3 J
Thallium, Tl	ug/L	0.071	0.04 J	0.08 J	0.058	0.2 J

CF-15-02
SUMMARY OF ANALYTICAL RESULTS
Indiana-Kentucky Electric Corporation
Clifty Creek Station
Madison, Indiana

Parameter	Units	Nov-16	Feb-17	Jun-17	Aug-17
Appendix III Constituents					
Boron, B	mg/L	9.72	0.142	9.71	10.3
Calcium, Ca	mg/L	281	157	272	299
Chloride, Cl	mg/L	41.7	41.2	43.5	42.3
Fluoride, F	mg/L	0.19	0.25	0.22	0.23
pH	s.u.	6.19	6.65	6.6	6.28
Sulfate, SO4	mg/L	1040	907	1090	1150
Total Dissolved Solids (TDS)	mg/L	1920	1820	1980	1900
Appendix IV Constituents					
Antimony, Sb	ug/L	0.06	0.05 J	0.03 J	0.09 J
Arsenic, As	ug/L	5.29	8.42	5.56	4.36
Barium, Ba	ug/L	61.2	86	74.6	55.6
Beryllium, Be	ug/L	0.006 J	0.01 J	0.04 U	0.08 U
Cadmium, Cd	ug/L	0.02 U	0.02 U	0.04 U	0.08 U
Chromium, Cr	ug/L	0.106	0.139	0.09 J	0.659
Cobalt, Co	ug/L	2.82	2.82	2.83	2.8
Fluoride, F	mg/L	0.19	0.25	0.22	0.23
Lithium, Li	mg/L	0.585	0.024	0.573	0.63
Lead, Pb	ug/L	0.095	0.161	0.097	0.275
Mercury, Hg	ug/L	0.004 J	0.002 J	0.005 U	0.005 U
Molybdenum, Mo	ug/L	2950	2700	2890	2520
Radium 226 & 228 (combined)	pCi/L	0.632	2.172	0.768	0.598
Selenium, Se	ug/L	0.1	0.1	0.2 J	0.2 J
Thallium, Tl	ug/L	0.07	0.058	0.08 J	0.1 J

CF-15-03
SUMMARY OF ANALYTICAL RESULTS
Indiana-Kentucky Electric Corporation
Clifty Creek Station
Madison, Indiana

Parameter	Units	Jan-16	Mar-16	May-16	Jul-16	Aug-16
Appendix III Constituents						
Boron, B	mg/L	0.67	0.733	0.806	0.833	0.766
Calcium, Ca	mg/L	245	222	258	264	262
Chloride, Cl	mg/L	11	11.7	11.8	26.6	11.6
Fluoride, F	mg/L	0.17	0.25	0.27	0.46	0.26
pH	s.u.	7.23	6.76	7.43	7.37	7.82
Sulfate, SO4	mg/L	270	196	231	39.9	225
Total Dissolved Solids (TDS)	mg/L	862	824	894	898	856
Appendix IV Constituents						
Antimony, Sb	ug/L	0.42	0.1	0.39	0.62	0.64
Arsenic, As	ug/L	2.67	14.6	12.9	14.1	9
Barium, Ba	ug/L	93.8	93.3	83.3	74.1	67.5
Beryllium, Be	ug/L	0.013	0.02 J	0.009 J	0.007 J	0.1 U
Cadmium, Cd	ug/L	0.05 U	0.02 J	0.02 J	0.03	0.1 U
Chromium, Cr	ug/L	0.3	0.4	0.2	0.3	0.2 J
Cobalt, Co	ug/L	6.89	4.03	3.96	4.49	4.56
Fluoride, F	mg/L	0.17	0.25	0.27	0.46	0.26
Lithium, Li	mg/L	0.005 U	0.005 J	0.001 U	0.007	0.005
Lead, Pb	ug/L	0.274	0.291	0.178	0.16	0.181
Mercury, Hg	ug/L	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Molybdenum, Mo	ug/L	3.11	2.4	12.1	17.8	5.89
Radium 226 & 228 (combined)	pCi/L	0.269	0.377 U	0.13	1.136	0.871
Selenium, Se	ug/L	0.1	0.07 J	0.09 J	0.08 J	0.5 U
Thallium, Tl	ug/L	0.022	0.01 J	0.05 U	0.05 U	0.2 U

CF-15-03
SUMMARY OF ANALYTICAL RESULTS
Indiana-Kentucky Electric Corporation
Clifty Creek Station
Madison, Indiana

Parameter	Units	Nov-16	Feb-17	Jun-17	Aug-17
Appendix III Constituents					
Boron, B	mg/L	0.836	0.883	0.255	0.831
Calcium, Ca	mg/L	271	270	35.4	267
Chloride, Cl	mg/L	11.5	11.6	12	11.7
Fluoride, F	mg/L	0.23	0.25	0.26	0.27
pH	s.u.	7.24	7	7.12	7
Sulfate, SO4	mg/L	203	209	203	211
Total Dissolved Solids (TDS)	mg/L	862	906	882	856
Appendix IV Constituents					
Antimony, Sb	ug/L	0.4	0.25	0.34	0.28
Arsenic, As	ug/L	11.1	5.43	3.42	4.86
Barium, Ba	ug/L	65.6	58.2	59.3	54.8
Beryllium, Be	ug/L	0.008 J	0.02 J	0.006 J	0.005 J
Cadmium, Cd	ug/L	0.03	0.02	0.03	0.03
Chromium, Cr	ug/L	0.288	0.24	0.311	0.093
Cobalt, Co	ug/L	2.69	1.86	2.1	3.07
Fluoride, F	mg/L	0.23	0.25	0.26	0.27
Lithium, Li	mg/L	0.001 U	0.009	0.001	0.009
Lead, Pb	ug/L	0.164	0.188	0.129	0.091
Mercury, Hg	ug/L	0.004 J	0.005 U	1.18	0.005 U
Molybdenum, Mo	ug/L	4.29	2.56	3.06	3.79
Radium 226 & 228 (combined)	pCi/L	0.4366	3.505	1.729	0.86
Selenium, Se	ug/L	0.1	0.06 J	0.08 J	0.04 J
Thallium, Tl	ug/L	0.02 J	0.03 J	0.02 J	0.04 J

CF-15-04
SUMMARY OF ANALYTICAL RESULTS
Indiana-Kentucky Electric Corporation
Clifty Creek Station
Madison, Indiana

Parameter	Units	Jan-16	Mar-16	May-16	Jul-16	Aug-16
Appendix III Constituents						
Boron, B	mg/L	0.052	0.035	0.028	0.047	0.055
Calcium, Ca	mg/L	67.2	56	56.2	68.9	68.1
Chloride, Cl	mg/L	19.6	40.9	21.3	31.7	20.5
Fluoride, F	mg/L	0.25 U	0.12	0.14	0.1 J	0.1 J
pH	s.u.	7.72	7.56	7.51	7.45	7.27
Sulfate, SO4	mg/L	30.1	27.7	24.6	25.4	23.4
Total Dissolved Solids (TDS)	mg/L	278	314	282	294	270
Appendix IV Constituents						
Antimony, Sb	ug/L	0.1 U	0.11	0.1	0.1	0.15
Arsenic, As	ug/L	0.33	0.69	0.33	0.36	0.46
Barium, Ba	ug/L	39.9	41.7	39.2	50.8	47.9
Beryllium, Be	ug/L	0.01 U	0.028	0.02 U	0.007 J	0.01 J
Cadmium, Cd	ug/L	0.05 U	0.02	0.007 J	0.07	0.02 J
Chromium, Cr	ug/L	0.2	0.6	0.3	0.4	0.3
Cobalt, Co	ug/L	0.086	0.53	0.094	0.115	0.157
Fluoride, F	mg/L	0.25 U	0.12	0.14	0.1 J	0.1 J
Lithium, Li	mg/L	0.005 U	0.011	0.001 U	0.018	0.003
Lead, Pb	ug/L	0.182	0.631	0.103	0.237	0.191
Mercury, Hg	ug/L	0.005 U	0.003 J	0.005 U	0.2 U	0.005 U
Molybdenum, Mo	ug/L	1.05	0.91	2.8	1.09	1.83
Radium 226 & 228 (combined)	pCi/L	0.0803 U	0.526 U	0.1095	0.962	0.261
Selenium, Se	ug/L	0.2	0.3	0.1	0.3	0.2
Thallium, Tl	ug/L	0.02 U	0.02 J	0.05 U	0.059	0.212

CF-15-04
SUMMARY OF ANALYTICAL RESULTS
Indiana-Kentucky Electric Corporation
Clifty Creek Station
Madison, Indiana

Parameter	Units	Nov-16	Feb-17	Jun-17	Aug-17
Appendix III Constituents					
Boron, B	mg/L	0.043	0.023	0.106	0.06
Calcium, Ca	mg/L	69.2	58.1	63	68.8
Chloride, Cl	mg/L	32.2	32.3	28.5	38.3
Fluoride, F	mg/L	0.09 J	0.1 J	0.1 J	0.1 J
pH	s.u.	6.19	7.46	6.77	7.33
Sulfate, SO4	mg/L	32.2	26.8	24.8	31.4
Total Dissolved Solids (TDS)	mg/L	294	288	326	304
Appendix IV Constituents					
Antimony, Sb	ug/L	0.1	0.09	0.11	0.09
Arsenic, As	ug/L	0.52	0.38	0.36	0.45
Barium, Ba	ug/L	50.9	38.2	48	51.3
Beryllium, Be	ug/L	0.007 J	0.02 J	0.007 J	0.01 J
Cadmium, Cd	ug/L	0.009 J	0.009 J	0.01 J	0.01 J
Chromium, Cr	ug/L	0.299	0.381	0.301	0.317
Cobalt, Co	ug/L	0.176	0.106	0.104	0.182
Fluoride, F	mg/L	0.09 J	0.1 J	0.1 J	0.1 J
Lithium, Li	mg/L	0.001 U	0.005	0.002	0.008
Lead, Pb	ug/L	0.096	0.268	0.104	0.199
Mercury, Hg	ug/L	0.004 J	0.002 J	0.932	0.005 U
Molybdenum, Mo	ug/L	3.21	0.83	1.07	1.29
Radium 226 & 228 (combined)	pCi/L	0.5	0.631	8.02	0.1274
Selenium, Se	ug/L	0.2	0.4	0.3	0.1
Thallium, Tl	ug/L	0.01 J	0.01 J	0.01 J	0.01 J

CF-15-05
SUMMARY OF ANALYTICAL RESULTS
Indiana-Kentucky Electric Corporation
Clifty Creek Station
Madison, Indiana

Parameter	Units	Jan-16	Mar-16	May-16	Jul-16	Aug-16
Appendix III Constituents						
Boron, B	mg/L	0.134	0.105	0.085	0.118	0.126
Calcium, Ca	mg/L	112	116	110	109	113
Chloride, Cl	mg/L	17.2	24.6	24.5	13.8	22.6
Fluoride, F	mg/L	0.39	0.44	0.46	0.55	0.43
pH	s.u.	7.3	6.06	7.44	7.38	7.2
Sulfate, SO4	mg/L	37.8	35.8	36.2	20.2	34.8
Total Dissolved Solids (TDS)	mg/L	472	542	524	522	520
Appendix IV Constituents						
Antimony, Sb	ug/L	0.1 U	0.06	0.12	0.08	0.04 J
Arsenic, As	ug/L	4.45	2.1	2.69	2.42	1.46
Barium, Ba	ug/L	138	97.4	106	96.4	93.9
Beryllium, Be	ug/L	0.018	0.024	0.04	0.02 J	0.02 J
Cadmium, Cd	ug/L	0.05 U	0.02 J	0.01 J	0.008 J	0.008 J
Chromium, Cr	ug/L	0.3	0.2	0.7	0.5	0.5
Cobalt, Co	ug/L	0.749	0.686	0.749	0.517	0.498
Fluoride, F	mg/L	0.39	0.44	0.46	0.55	0.43
Lithium, Li	mg/L	0.005	0.012	0.008	0.013	0.012
Lead, Pb	ug/L	0.266	0.433	0.691	0.325	0.323
Mercury, Hg	ug/L	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Molybdenum, Mo	ug/L	4.2	1.08	1.96	4.71	6
Radium 226 & 228 (combined)	pCi/L	0.2787	0.519 U	0.563	0.879	1.101
Selenium, Se	ug/L	0.1 U	0.1	0.1	0.08 J	0.1 J
Thallium, Tl	ug/L	0.02 U	0.02 J	0.083	0.02 J	0.03 J

CF-15-05
SUMMARY OF ANALYTICAL RESULTS
Indiana-Kentucky Electric Corporation
Clifty Creek Station
Madison, Indiana

Parameter	Units	Nov-16	Feb-17	Jun-17	Aug-17
Appendix III Constituents					
Boron, B	mg/L	0.12	0.124	0.137	0.102
Calcium, Ca	mg/L	111	105	101	105
Chloride, Cl	mg/L	29.5	26.1	29.6	29.9
Fluoride, F	mg/L	0.43	0.42	0.44	0.44
pH	s.u.	6.1	6.91	7.16	7.18
Sulfate, SO4	mg/L	40.1	35.3	40.3	43.2
Total Dissolved Solids (TDS)	mg/L	490	530	513	520
Appendix IV Constituents					
Antimony, Sb	ug/L	0.06	0.06	0.03 J	0.06
Arsenic, As	ug/L	1.91	1.79	1.16	1.35
Barium, Ba	ug/L	63.2	71.2	69.2	68
Beryllium, Be	ug/L	0.01 J	0.02 J	0.009 J	0.01 J
Cadmium, Cd	ug/L	0.01 J	0.02	0.02	0.01 J
Chromium, Cr	ug/L	0.253	0.43	0.17	0.269
Cobalt, Co	ug/L	0.399	0.644	0.42	0.446
Fluoride, F	mg/L	0.43	0.42	0.44	0.44
Lithium, Li	mg/L	0.015	0.016	0.011	0.019
Lead, Pb	ug/L	0.175	0.356	0.155	0.227
Mercury, Hg	ug/L	0.003 J	0.005 U	0.522	0.005 U
Molybdenum, Mo	ug/L	1.3	1.6	1.48	1.34
Radium 226 & 228 (combined)	pCi/L	0.695	0.169	3.996	1.475
Selenium, Se	ug/L	0.07 J	0.1	0.09 J	0.08 J
Thallium, Tl	ug/L	0.03 J	0.085	0.02 J	0.04 J

CF-15-06
SUMMARY OF ANALYTICAL RESULTS
Indiana-Kentucky Electric Corporation
Clifty Creek Station
Madison, Indiana

Parameter	Units	Jan-16	Mar-16	May-16	Jul-16	Aug-16
Appendix III Constituents						
Boron, B	mg/L	0.179	0.083	0.083	NA	NA
Calcium, Ca	mg/L	149	126	130	NA	NA
Chloride, Cl	mg/L	8.14	5.54	5.55	NA	NA
Fluoride, F	mg/L	0.16	0.2 U	0.24	NA	NA
pH	s.u.	7.04	6.06	7.46	NA	NA
Sulfate, SO4	mg/L	109	91	102	NA	NA
Total Dissolved Solids (TDS)	mg/L	636	628	594	NA	NA
Appendix IV Constituents						
Antimony, Sb	ug/L	0.1 U	0.08	0.03 J	NA	NA
Arsenic, As	ug/L	0.56	0.42	0.32	NA	NA
Barium, Ba	ug/L	57	40	33	NA	NA
Beryllium, Be	ug/L	0.021	0.006 J	0.006 J	NA	NA
Cadmium, Cd	ug/L	0.06	0.04	0.04	NA	NA
Chromium, Cr	ug/L	0.7	0.4	0.5	NA	NA
Cobalt, Co	ug/L	0.497	0.653	0.191	NA	NA
Fluoride, F	mg/L	0.16	0.2 U	0.24	NA	NA
Lithium, Li	mg/L	0.012	0.017	0.012	NA	NA
Lead, Pb	ug/L	0.333	0.082	0.424	NA	NA
Mercury, Hg	ug/L	0.005 U	0.005 U	0.005 U	NA	NA
Molybdenum, Mo	ug/L	1.42	0.45	0.47	NA	NA
Radium 226 & 228 (combined)	pCi/L	0.258	1.14 U	0.416	NA	NA
Selenium, Se	ug/L	0.2	0.4	0.09 J	NA	NA
Thallium, Tl	ug/L	0.048	0.01 J	0.03 J	NA	NA

Notes:
1. NA = Not analyzed due to insufficent water in monitoring well or the reduced sampling plan

CF-15-06
SUMMARY OF ANALYTICAL RESULTS
Indiana-Kentucky Electric Corporation
Clifty Creek Station
Madison, Indiana

Parameter	Units	Nov-16	Feb-17	Jun-17	Aug-17
Appendix III Constituents					
Boron, B	mg/L	NA	0.139	NA	NA
Calcium, Ca	mg/L	NA	125	NA	NA
Chloride, Cl	mg/L	NA	8.96	NA	NA
Fluoride, F	mg/L	NA	0.2	NA	NA
pH	s.u.	NA	7.54	NA	NA
Sulfate, SO4	mg/L	NA	104	NA	NA
Total Dissolved Solids (TDS)	mg/L	NA	606	NA	NA
Appendix IV Constituents					
Antimony, Sb	ug/L	NA	0.04 J	NA	NA
Arsenic, As	ug/L	NA	0.32	NA	NA
Barium, Ba	ug/L	NA	33.7	NA	NA
Beryllium, Be	ug/L	NA	0.02 U	NA	NA
Cadmium, Cd	ug/L	NA	0.08	NA	NA
Chromium, Cr	ug/L	NA	0.685	NA	NA
Cobalt, Co	ug/L	NA	0.163	NA	NA
Fluoride, F	mg/L	NA	0.2	NA	NA
Lithium, Li	mg/L	NA	0.017	NA	NA
Lead, Pb	ug/L	NA	0.187	NA	NA
Mercury, Hg	ug/L	NA	0.005 U	NA	NA
Molybdenum, Mo	ug/L	NA	0.96	NA	NA
Radium 226 & 228 (combined)	pCi/L	NA	1.357	NA	NA
Selenium, Se	ug/L	NA	0.2	NA	NA
Thallium, Tl	ug/L	NA	0.172	NA	NA

Notes:
1. NA = Not analyzed due to insufficent water in monitoring well or the reduced sampling plan

CF-15-07
SUMMARY OF ANALYTICAL RESULTS
Indiana-Kentucky Electric Corporation
Clifty Creek Station
Madison, Indiana

Parameter	Units	Jan-16	Mar-16	May-16	Jul-16	Aug-16
Appendix III Constituents						
Boron, B	mg/L	0.057	0.032	0.022	0.045	0.046
Calcium, Ca	mg/L	174	146	152	159	160
Chloride, Cl	mg/L	5.24	5.67	5.34	5.57	5.15
Fluoride, F	mg/L	0.25 U	0.2 U	0.22	0.23	0.2
pH	s.u.	7.44	6.78	7.4	7.17	7.48
Sulfate, SO4	mg/L	4.7	6.4	7.1	8	7.1
Total Dissolved Solids (TDS)	mg/L	630	608	602	596	584
Appendix IV Constituents						
Antimony, Sb	ug/L	0.1 U	0.04 J	0.05 J	0.04 J	0.05
Arsenic, As	ug/L	4.08	2.51	4.47	4.83	5.4
Barium, Ba	ug/L	80.2	73.6	71.8	74.9	81.2
Beryllium, Be	ug/L	0.038	0.02 J	0.02 J	0.02 J	0.029
Cadmium, Cd	ug/L	0.05 U	0.02 J	0.02	0.02 J	0.02
Chromium, Cr	ug/L	1	0.3	0.3	0.5	0.7
Cobalt, Co	ug/L	3.95	3.35	2.94	2.81	3.11
Fluoride, F	mg/L	0.25 U	0.2 U	0.22	0.23	0.2
Lithium, Li	mg/L	0.005 U	0.002 J	0.001 U	0.001 U	0.004
Lead, Pb	ug/L	0.809	0.197	0.207	0.258	0.452
Mercury, Hg	ug/L	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Molybdenum, Mo	ug/L	2.18	1.99	1.57	3.2	2.6
Radium 226 & 228 (combined)	pCi/L	0.111	0.77 U	0.3301	1.4843	0.296
Selenium, Se	ug/L	0.3	0.1	0.1 J	0.1	0.2
Thallium, Tl	ug/L	0.031	0.04 J	0.03 J	0.02 J	0.063

CF-15-07
SUMMARY OF ANALYTICAL RESULTS
Indiana-Kentucky Electric Corporation
Clifty Creek Station
Madison, Indiana

Parameter	Units	Nov-16	Feb-17	Jun-17	Aug-17
Appendix III Constituents					
Boron, B	mg/L	0.053	0.021	0.05	0.059
Calcium, Ca	mg/L	159	159	144	151
Chloride, Cl	mg/L	5.52	5.07	5.25	5.13
Fluoride, F	mg/L	0.19	0.23	0.21	0.21
pH	s.u.	7.87	6.99	6.69	7.14
Sulfate, SO4	mg/L	3.5	2.1	2.5	2.8
Total Dissolved Solids (TDS)	mg/L	578	602	606	592
Appendix IV Constituents					
Antimony, Sb	ug/L	0.03 J	0.04 J	0.02 J	0.03 J
Arsenic, As	ug/L	6.12	6.22	5.07	5.32
Barium, Ba	ug/L	77.3	79.1	77.8	77.2
Beryllium, Be	ug/L	0.01 J	0.021	0.01 J	0.007 J
Cadmium, Cd	ug/L	0.02 J	0.01 J	0.02	0.007 J
Chromium, Cr	ug/L	0.299	0.395	0.144	0.187
Cobalt, Co	ug/L	2.61	3.03	2.8	2.82
Fluoride, F	mg/L	0.19	0.23	0.21	0.21
Lithium, Li	mg/L	0.001 U	0.007	0.002	0.006
Lead, Pb	ug/L	0.158	0.298	0.12	0.11
Mercury, Hg	ug/L	0.002 J	0.003 J	1.12	0.005 U
Molybdenum, Mo	ug/L	3.03	2.49	1.69	2.86
Radium 226 & 228 (combined)	pCi/L	0.781	0.2136	14.215	0.4738
Selenium, Se	ug/L	0.1	0.1	0.2	0.1
Thallium, Tl	ug/L	0.03 J	0.02 J	0.01 J	0.01 J

CF-15-08
SUMMARY OF ANALYTICAL RESULTS
Indiana-Kentucky Electric Corporation
Clifty Creek Station
Madison, Indiana

Parameter	Units	Jan-16	Mar-16	May-16	Jul-16	Aug-16
Appendix III Constituents						
Boron, B	mg/L	8.64	8.24	9.34	9.65	9.63
Calcium, Ca	mg/L	119	126	131	138	138
Chloride, Cl	mg/L	18.3	16	15.6	17.5	17.8
Fluoride, F	mg/L	0.41	0.42	0.41	0.27	0.38
pH	s.u.	7.69	6.83	7.5	7.49	7.53
Sulfate, SO4	mg/L	225	199	223	247	247
Total Dissolved Solids (TDS)	mg/L	606	626	662	644	632
Appendix IV Constituents						
Antimony, Sb	ug/L	0.19	0.11	0.11	0.09	0.1
Arsenic, As	ug/L	1.99	1.32	0.99	0.72	0.83
Barium, Ba	ug/L	95.6	93	80.8	71	67.8
Beryllium, Be	ug/L	0.011	0.01 J	0.01 J	0.007 J	0.01 J
Cadmium, Cd	ug/L	0.05 U	0.07	0.03	0.07	0.04
Chromium, Cr	ug/L	0.3	0.4	0.4	0.2	0.3
Cobalt, Co	ug/L	1.38	2.08	0.649	0.416	0.45
Fluoride, F	mg/L	0.41	0.42	0.41	0.27	0.38
Lithium, Li	mg/L	0.014	0.011	0.014	0.017	0.017
Lead, Pb	ug/L	0.427	0.947	0.419	0.217	0.331
Mercury, Hg	ug/L	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Molybdenum, Mo	ug/L	196	266	317	303	315
Radium 226 & 228 (combined)	pCi/L	0.299	0.335 U	0.4	0.715	0.304
Selenium, Se	ug/L	0.1	0.1	0.08 J	0.07 J	0.08 J
Thallium, Tl	ug/L	0.074	0.065	0.063	0.101	0.101

CF-15-08
SUMMARY OF ANALYTICAL RESULTS
Indiana-Kentucky Electric Corporation
Clifty Creek Station
Madison, Indiana

Parameter	Units	Nov-16	Feb-17	Jun-17	Aug-17
Appendix III Constituents					
Boron, B	mg/L	10.9	9.29	7.62	9.04
Calcium, Ca	mg/L	133	143	114	136
Chloride, Cl	mg/L	17.4	15.9	14.1	17.1
Fluoride, F	mg/L	0.36	0.34	0.34	0.36
pH	s.u.	6.64	7.28	7.24	7.21
Sulfate, SO4	mg/L	238	203	178	233
Total Dissolved Solids (TDS)	mg/L	582	626	564	594
Appendix IV Constituents					
Antimony, Sb	ug/L	0.08	0.09	0.05	0.07
Arsenic, As	ug/L	0.66	0.82	0.6	0.93
Barium, Ba	ug/L	61.7	64.1	56.4	58.4
Beryllium, Be	ug/L	0.008 J	0.01 J	0.009 J	0.01 J
Cadmium, Cd	ug/L	0.02	0.04	0.02	0.05
Chromium, Cr	ug/L	0.242	0.261	0.189	0.403
Cobalt, Co	ug/L	0.327	0.49	0.29	0.537
Fluoride, F	mg/L	0.36	0.34	0.34	0.36
Lithium, Li	mg/L	0.017	0.025	0.015	0.022
Lead, Pb	ug/L	0.159	0.289	0.156	0.457
Mercury, Hg	ug/L	0.004 J	0.005 U	1.26	0.005 U
Molybdenum, Mo	ug/L	500	311	391	425
Radium 226 & 228 (combined)	pCi/L	0.901	8.401	0.792	0.583
Selenium, Se	ug/L	0.08 J	0.06 J	0.04 J	0.07 J
Thallium, Tl	ug/L	0.05 J	0.04 J	0.05 J	0.056

CF-15-09
SUMMARY OF ANALYTICAL RESULTS
Indiana-Kentucky Electric Corporation
Clifty Creek Station
Madison, Indiana

Parameter	Units	Jan-16	Mar-16	May-16	Jul-16	Aug-16
Appendix III Constituents						
Boron, B	mg/L	6.86	5.78	6.58	7.01	6.73
Calcium, Ca	mg/L	203	165	186	394	202
Chloride, Cl	mg/L	6.59	5.09	4.49	4.6	4.11
Fluoride, F	mg/L	0.28	0.27	0.24	0.28	0.28
pH	s.u.	7.58	7.1	7.44	7.48	7.65
Sulfate, SO4	mg/L	359	299	286	363	309
Total Dissolved Solids (TDS)	mg/L	792	743	758	1100	740
Appendix IV Constituents						
Antimony, Sb	ug/L	0.13	0.09	0.08	0.11	0.09
Arsenic, As	ug/L	0.57	0.44	0.41	3.9	0.41
Barium, Ba	ug/L	28.4	22.6	21	45.3	22.2
Beryllium, Be	ug/L	0.01 U	0.02 U	0.006 J	0.206	0.008 J
Cadmium, Cd	ug/L	0.05 U	0.03	0.03	0.11	0.02
Chromium, Cr	ug/L	0.3	0.5	0.6	7.1	0.6
Cobalt, Co	ug/L	0.416	0.112	0.121	5.44	0.139
Fluoride, F	mg/L	0.28	0.27	0.24	0.28	0.28
Lithium, Li	mg/L	0.011	0.009	0.009	0.025	0.013
Lead, Pb	ug/L	0.045	0.073	0.15	6.75	0.163
Mercury, Hg	ug/L	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Molybdenum, Mo	ug/L	87.8	87.6	82.6	38.2	90.3
Radium 226 & 228 (combined)	pCi/L	0.1	1.54 U	0.4485	1.126	0.3095
Selenium, Se	ug/L	0.2	0.1	0.1	1.4	0.2
Thallium, Tl	ug/L	0.031	0.02 J	0.02 J	0.076	0.05 J

Notes:
1. NA = Not analyzed due to insufficent water in monitoring well or the reduced sampling plan

CF-15-09
SUMMARY OF ANALYTICAL RESULTS
Indiana-Kentucky Electric Corporation
Clifty Creek Station
Madison, Indiana

Parameter	Units	Nov-16	Feb-17	Jun-17	Aug-17
Appendix III Constituents					
Boron, B	mg/L	NA	6.78	6.3	6.81
Calcium, Ca	mg/L	NA	179	182	392
Chloride, Cl	mg/L	NA	2.58	4.12	3.77
Fluoride, F	mg/L	NA	0.33	0.27	0.26
pH	s.u.	NA	7.18	7.91	6.99
Sulfate, SO4	mg/L	NA	0.4	305	422
Total Dissolved Solids (TDS)	mg/L	NA	200 J	790	970
Appendix IV Constituents					
Antimony, Sb	ug/L	NA	0.05 J	0.06	0.12
Arsenic, As	ug/L	NA	0.33	0.4	6.17
Barium, Ba	ug/L	NA	13.5	18.7	44.3
Beryllium, Be	ug/L	NA	0.008 J	0.007 J	0.317
Cadmium, Cd	ug/L	NA	0.02 J	0.02 J	0.08
Chromium, Cr	ug/L	NA	0.226	1.21	13.7
Cobalt, Co	ug/L	NA	0.042	0.184	13.7
Fluoride, F	mg/L	NA	0.33	0.27	0.26
Lithium, Li	mg/L	NA	0.017	0.012	0.035
Lead, Pb	ug/L	NA	0.027	0.191	10.2
Mercury, Hg	ug/L	NA	0.005 U	0.005 U	0.005 U
Molybdenum, Mo	ug/L	NA	82.5	73.6	47.1
Radium 226 & 228 (combined)	pCi/L	NA	0.823	0.869	NA
Selenium, Se	ug/L	NA	0.04 J	0.1	2
Thallium, Tl	ug/L	NA	0.01 J	0.01 J	0.085

Notes:
1. NA = Not analyzed due to insufficent water in monitoring well or the reduced sampling plan

West Boiler Slag Pond

WBSP-15-01
SUMMARY OF ANALYTICAL RESULTS
Indiana-Kentucky Electric Corporation
Clifty Creek Station
Madison, Indiana

Parameter	Units	Jan-16	Mar-16	May-16	Jul-16	Aug-16
Appendix III Constituents						
Boron, B	mg/L	0.112	0.094	0.064	0.09	0.134
Calcium, Ca	mg/L	143	150	182	180	160
Chloride, Cl	mg/L	11.5	8.49	8.01	17.9	37.4
Fluoride, F	mg/L	0.25 U	0.22	0.26	0.23	0.25
pH	s.u.	7.47	7.21	6.75	6.67	6.17
Sulfate, SO4	mg/L	97.2	120	123	169	165
Total Dissolved Solids (TDS)	mg/L	546	642	636	750	734
Appendix IV Constituents						
Antimony, Sb	ug/L	0.14	0.07	0.05	0.14	0.1 J
Arsenic, As	ug/L	0.88	0.32	2.9	3.22	0.49
Barium, Ba	ug/L	36.9	18.6	14.7	38.5	25
Beryllium, Be	ug/L	0.052	0.02 U	0.007 J	0.176	0.02 J
Cadmium, Cd	ug/L	0.05 U	0.008 J	0.007 J	0.07	0.05
Chromium, Cr	ug/L	1.5	0.2	0.4	8.4	1.3
Cobalt, Co	ug/L	0.778	0.064	0.022	4.03	0.6
Fluoride, F	mg/L	0.25 U	0.22	0.26	0.23	0.25
Lithium, Li	mg/L	0.007	0.013	0.021	0.029	0.024
Lead, Pb	ug/L	1.14	0.044	0.233	3.74	0.585
Mercury, Hg	ug/L	0.005 U	0.005 U	0.005 U	0.004 J	0.005 U
Molybdenum, Mo	ug/L	2.26	0.88	0.74	1.26	1.18
Radium 226 & 228 (combined)	pCi/L	0.137	0.524 U	3.2607	NA	NA
Selenium, Se	ug/L	0.2	0.1 J	0.1 U	0.5	0.1 J
Thallium, Tl	ug/L	0.025	0.01 J	0.02 J	0.074	0.03 J

Notes:
1. NA = Not analyzed due to insufficent water in monitoring well or the reduced sampling plan

WBSP-15-01
SUMMARY OF ANALYTICAL RESULTS
Indiana-Kentucky Electric Corporation
Clifty Creek Station
Madison, Indiana

Parameter	Units	Nov-16	Feb-17	Jun-17	Aug-17
Appendix III Constituents					
Boron, B	mg/L	NA	0.133	0.108	NA
Calcium, Ca	mg/L	NA	163	154	NA
Chloride, Cl	mg/L	NA	42.5	11.3	NA
Fluoride, F	mg/L	NA	0.27	0.25	NA
pH	s.u.	NA	6.85	6.82	NA
Sulfate, SO4	mg/L	NA	168	133	NA
Total Dissolved Solids (TDS)	mg/L	NA	708	696	NA
Appendix IV Constituents					
Antimony, Sb	ug/L	NA	0.09	0.05 J	NA
Arsenic, As	ug/L	NA	1.08	0.46	NA
Barium, Ba	ug/L	NA	30.4	19.1	NA
Beryllium, Be	ug/L	NA	0.072	0.022	NA
Cadmium, Cd	ug/L	NA	0.04	0.01 J	NA
Chromium, Cr	ug/L	NA	3.43	0.98	NA
Cobalt, Co	ug/L	NA	1.61	0.441	NA
Fluoride, F	mg/L	NA	0.27	0.25	NA
Lithium, Li	mg/L	NA	0.033	0.03	NA
Lead, Pb	ug/L	NA	1.74	0.447	NA
Mercury, Hg	ug/L	NA	0.005 U	1.12	NA
Molybdenum, Mo	ug/L	NA	0.81	0.47	NA
Radium 226 & 228 (combined)	pCi/L	NA	NA	NA	NA
Selenium, Se	ug/L	NA	0.2	0.2	NA
Thallium, Tl	ug/L	NA	0.04 J	0.02 J	NA

Notes:
1. NA = Not analyzed due to insufficent water in monitoring well or the reduced sampling plan

WBSP-15-02
SUMMARY OF ANALYTICAL RESULTS
Indiana-Kentucky Electric Corporation
Clifty Creek Station
Madison, Indiana

Parameter	Units	Jan-16	Mar-16	May-16	Jul-16	Aug-16
Appendix III Constituents						
Boron, B	mg/L	5.02	3.92	3.04	4.39	3.06
Calcium, Ca	mg/L	284	262	246	119	257
Chloride, Cl	mg/L	12.3	12.3	13.1	14.7	12
Fluoride, F	mg/L	0.2	0.31	0.24	0.38	0.32
pH	s.u.	7.51	7.12	7.13	6.99	6.79
Sulfate, SO4	mg/L	634	566	508	584	517
Total Dissolved Solids (TDS)	mg/L	1290	1230	1160	1250	1140
Appendix IV Constituents						
Antimony, Sb	ug/L	0.13	0.36	0.17	0.1	0.13
Arsenic, As	ug/L	0.71	0.6	4.47	3.9	0.47
Barium, Ba	ug/L	33.6	33.7	30.9	91	28.1
Beryllium, Be	ug/L	0.01 U	0.008 J	0.007 J	0.02 U	0.005 J
Cadmium, Cd	ug/L	0.05 U	0.02 J	0.02	0.009 J	0.01 J
Chromium, Cr	ug/L	0.6	0.8	0.3	0.2	0.5
Cobalt, Co	ug/L	0.126	0.175	0.359	0.18	0.141
Fluoride, F	mg/L	0.2	0.31	0.24	0.38	0.32
Lithium, Li	mg/L	0.098	0.102	0.087	0.009	0.088
Lead, Pb	ug/L	0.091	0.181	0.131	0.041	0.122
Mercury, Hg	ug/L	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Molybdenum, Mo	ug/L	5	3.73	2.65	62.4	2.33
Radium 226 & 228 (combined)	pCi/L	0.183	1.61 U	0.2887	1.98	1.48
Selenium, Se	ug/L	0.1	0.2	0.05 J	0.09 J	0.08 J
Thallium, Tl	ug/L	0.02 U	0.02 J	0.02 J	0.089	0.02 J

Notes:
1. NA = Not analyzed due to insufficent water in monitoring well or the reduced sampling plan

WBSP-15-02
SUMMARY OF ANALYTICAL RESULTS
Indiana-Kentucky Electric Corporation
Clifty Creek Station
Madison, Indiana

Parameter	Units	Nov-16	Feb-17	Jun-17	Aug-17
Appendix III Constituents					
Boron, B	mg/L	NA	4.43	3.58	3.72
Calcium, Ca	mg/L	NA	254	249	266
Chloride, Cl	mg/L	NA	13.8	11.4	11.7
Fluoride, F	mg/L	NA	0.34	0.3	0.32
pH	s.u.	NA	6.78	7.07	6.95
Sulfate, SO4	mg/L	NA	558	573	581
Total Dissolved Solids (TDS)	mg/L	NA	1240	1220	1180
Appendix IV Constituents					
Antimony, Sb	ug/L	NA	0.16	0.22	0.27
Arsenic, As	ug/L	NA	0.62	0.97	0.78
Barium, Ba	ug/L	NA	31.5	33	32.6
Beryllium, Be	ug/L	NA	0.01 J	0.03	0.03
Cadmium, Cd	ug/L	NA	0.03	0.06	0.02
Chromium, Cr	ug/L	NA	1.03	2.5	2.14
Cobalt, Co	ug/L	NA	0.476	0.497	0.564
Fluoride, F	mg/L	NA	0.34	0.3	0.32
Lithium, Li	mg/L	NA	0.093	0.091	0.103
Lead, Pb	ug/L	NA	0.441	0.699	0.64
Mercury, Hg	ug/L	NA	0.005 U	1.16	0.005 U
Molybdenum, Mo	ug/L	NA	7.72	3	4.4
Radium 226 & 228 (combined)	pCi/L	NA	0.879	2.235	0.737
Selenium, Se	ug/L	NA	0.1	0.2	0.1
Thallium, Tl	ug/L	NA	0.03 J	0.02 J	0.03 J

Notes:
1. NA = Not analyzed due to insufficent water in monitoring well or the reduced sampling plan

WBSP-15-03
SUMMARY OF ANALYTICAL RESULTS
Indiana-Kentucky Electric Corporation
Clifty Creek Station
Madison, Indiana

Parameter	Units	Jan-16	Mar-16	May-16	Jul-16	Aug-16
Appendix III Constituents						
Boron, B	mg/L	0.147	0.067	0.069	0.115	0.169
Calcium, Ca	mg/L	171	78.9	99	105	134
Chloride, Cl	mg/L	84.3	142	159	69	68.4
Fluoride, F	mg/L	0.23	0.27	0.25	0.27	0.29
pH	s.u.	7.61	7.39	7.19	7.36	7.46
Sulfate, SO4	mg/L	310	62.9	80.4	76.3	125
Total Dissolved Solids (TDS)	mg/L	810	514	580	468	640
Appendix IV Constituents						
Antimony, Sb	ug/L	0.1 U	0.07	0.08	0.09	0.06 J
Arsenic, As	ug/L	0.45	0.17	3.37	0.17	0.15
Barium, Ba	ug/L	15.8	7.6	11.6	12.7	13.2
Beryllium, Be	ug/L	0.027	0.02 U	0.02 U	0.02 U	0.04 U
Cadmium, Cd	ug/L	0.05 U	0.02 U	0.02 U	0.008 J	0.04 U
Chromium, Cr	ug/L	1.9	0.1	0.2	0.1	0.1
Cobalt, Co	ug/L	0.33	0.066	0.021	0.021	0.02 J
Fluoride, F	mg/L	0.23	0.27	0.25	0.27	0.29
Lithium, Li	mg/L	0.033	0.011	0.007	0.006	0.016
Lead, Pb	ug/L	0.385	0.063	0.037	0.047	0.04 J
Mercury, Hg	ug/L	0.005 U	0.005 U	0.005 U	0.2 U	0.005 U
Molybdenum, Mo	ug/L	1.74	3.28	3.2	2.78	3.25
Radium 226 & 228 (combined)	pCi/L	0.124	0.546 U	0.60324	0.401	1.392
Selenium, Se	ug/L	0.3	0.2	0.06 J	0.7	0.2 J
Thallium, Tl	ug/L	0.02 U	0.05 U	0.01 J	0.03 J	0.03 J

WBSP-15-03
SUMMARY OF ANALYTICAL RESULTS
Indiana-Kentucky Electric Corporation
Clifty Creek Station
Madison, Indiana

Parameter	Units	Nov-16	Feb-17	Jun-17	Aug-17
Appendix III Constituents					
Boron, B	mg/L	0.09	0.136	0.112	0.167
Calcium, Ca	mg/L	119	137	68.8	155
Chloride, Cl	mg/L	47.4	92.1	51	55.5
Fluoride, F	mg/L	0.19	0.22	0.22	0.29
pH	s.u.	6.76	6.78	7.38	6.99
Sulfate, SO4	mg/L	109	193	49.6	130
Total Dissolved Solids (TDS)	mg/L	564	664	379	672
Appendix IV Constituents					
Antimony, Sb	ug/L	0.06	0.07	0.11	0.04 J
Arsenic, As	ug/L	0.17	0.32	0.15	0.23
Barium, Ba	ug/L	11.9	12.4	8.85	13.6
Beryllium, Be	ug/L	0.02 U	0.01 J	0.02 U	0.006 J
Cadmium, Cd	ug/L	0.008 J	0.006 J	0.006 J	0.009 J
Chromium, Cr	ug/L	0.108	0.32	0.121	0.187
Cobalt, Co	ug/L	0.019	0.21	0.05	0.08
Fluoride, F	mg/L	0.19	0.22	0.22	0.29
Lithium, Li	mg/L	0.008	0.016	0.008	0.019
Lead, Pb	ug/L	0.007 J	0.233	0.071	0.079
Mercury, Hg	ug/L	0.003 J	0.005 U	1.24	0.005 U
Molybdenum, Mo	ug/L	4.56	2.2	3	1.29
Radium 226 & 228 (combined)	pCi/L	0.891	1.143	0.605	0.47
Selenium, Se	ug/L	1	0.2	0.6	0.09 J
Thallium, Tl	ug/L	0.02 J	0.02 J	0.02 J	0.03 J

WBSP-15-04
SUMMARY OF ANALYTICAL RESULTS
Indiana-Kentucky Electric Corporation
Clifty Creek Station
Madison, Indiana

Parameter	Units	Jan-16	Mar-16	May-16	Jul-16	Aug-16
Appendix III Constituents						
Boron, B	mg/L	4.55	4.11	4.36	3.49	4.24
Calcium, Ca	mg/L	106	94.4	106	287	125
Chloride, Cl	mg/L	70.5	66.2	71.1	13.4	78.2
Fluoride, F	mg/L	0.25 U	0.2 U	0.2	0.33	0.15
pH	s.u.	8.45	8.61	8.82	8.31	7.34
Sulfate, SO4	mg/L	193	196	212	549	237
Total Dissolved Solids (TDS)	mg/L	456	496	520	1180	594
Appendix IV Constituents						
Antimony, Sb	ug/L	0.1 U	0.14	0.31	0.5	0.19
Arsenic, As	ug/L	3.34	3.27	0.15	2.33	3.16
Barium, Ba	ug/L	92.7	91.1	89.1	49.5	92.9
Beryllium, Be	ug/L	0.01 U	0.02 U	0.02 U	0.128	0.02 J
Cadmium, Cd	ug/L	0.05 U	0.02 U	0.02 U	0.07	0.01 J
Chromium, Cr	ug/L	0.3	0.1	0.2	5.7	2.5
Cobalt, Co	ug/L	0.421	0.251	0.172	2.85	0.467
Fluoride, F	mg/L	0.25 U	0.2 U	0.2	0.33	0.15
Lithium, Li	mg/L	0.005	0.022	0.007	0.086	0.013
Lead, Pb	ug/L	0.247	0.075	0.03	3.16	0.373
Mercury, Hg	ug/L	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Molybdenum, Mo	ug/L	52	55.9	63.6	3.1	62.8
Radium 226 & 228 (combined)	pCi/L	0.1142	0.614 U	0.283	3.504	0.90792
Selenium, Se	ug/L	0.1	0.08 J	0.3	0.5	0.1 J
Thallium, Tl	ug/L	0.02 U	0.05 U	0.01 J	0.07	0.07 J

WBSP-15-04
SUMMARY OF ANALYTICAL RESULTS
Indiana-Kentucky Electric Corporation
Clifty Creek Station
Madison, Indiana

Parameter	Units	Nov-16	Feb-17	Jun-17	Aug-17
Appendix III Constituents					
Boron, B	mg/L	4.52	5.11	4.62	4.65
Calcium, Ca	mg/L	110	95.5	95.1	110
Chloride, Cl	mg/L	71.8	67	77.5	83.7
Fluoride, F	mg/L	0.1 J	0.18	0.17	0.17
pH	s.u.	9.07	7.62	7.85	7.92
Sulfate, SO4	mg/L	191	175	187	209
Total Dissolved Solids (TDS)	mg/L	428	500	507	492
Appendix IV Constituents					
Antimony, Sb	ug/L	0.12	0.13	0.11	0.11
Arsenic, As	ug/L	3.74	4.86	4.79	4.55
Barium, Ba	ug/L	79.5	78.3	84.2	88.9
Beryllium, Be	ug/L	0.02 U	0.02 U	0.02 U	0.02 U
Cadmium, Cd	ug/L	0.02 U	0.006 J	0.02 U	0.008 J
Chromium, Cr	ug/L	0.135	0.265	0.114	0.112
Cobalt, Co	ug/L	0.24	0.29	0.251	0.245
Fluoride, F	mg/L	0.1 J	0.18	0.17	0.17
Lithium, Li	mg/L	0.008	0.012	0.011	0.008
Lead, Pb	ug/L	0.041	0.079	0.042	0.049
Mercury, Hg	ug/L	0.004 J	0.005 U	0.894	0.005 U
Molybdenum, Mo	ug/L	66.4	60.1	55.5	64.8
Radium 226 & 228 (combined)	pCi/L	0.461	1.067	0.635	0.698
Selenium, Se	ug/L	0.07 J	0.1	0.09 J	0.08 J
Thallium, Tl	ug/L	0.01 J	0.209	0.01 J	0.02 J

WBSP-15-05
SUMMARY OF ANALYTICAL RESULTS
Indiana-Kentucky Electric Corporation
Clifty Creek Station
Madison, Indiana

Parameter	Units	Jan-16	Mar-16	May-16	Jul-16	Aug-16
Appendix III Constituents						
Boron, B	mg/L	2.58	2.71	2.88	2.96	2.92
Calcium, Ca	mg/L	94.9	101	113	118	117
Chloride, Cl	mg/L	71.7	66.9	67.9	65.7	64.9
Fluoride, F	mg/L	0.26	0.28	0.25	0.19	0.18
pH	s.u.	7.89	8.12	8.36	8.14	7.43
Sulfate, SO4	mg/L	176	190	223	234	231
Total Dissolved Solids (TDS)	mg/L	492	516	502	508	548
Appendix IV Constituents						
Antimony, Sb	ug/L	0.45	0.6	0.09	0.07	0.16
Arsenic, As	ug/L	7.27	6.12	0.61	2.95	3.32
Barium, Ba	ug/L	160	208	171	148	131
Beryllium, Be	ug/L	0.027	0.02 J	0.02 U	0.02 U	0.03 J
Cadmium, Cd	ug/L	0.05 U	0.02	0.02	0.04	0.06
Chromium, Cr	ug/L	0.8	0.4	1.2	0.2	1.1
Cobalt, Co	ug/L	0.98	1.76	1.24	1.16	1.49
Fluoride, F	mg/L	0.26	0.28	0.25	0.19	0.18
Lithium, Li	mg/L	0.005 U	0.005 J	0.0007 J	0.004	0.006
Lead, Pb	ug/L	0.753	0.272	0.052	0.081	0.534
Mercury, Hg	ug/L	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Molybdenum, Mo	ug/L	150	139	118	102	100
Radium 226 & 228 (combined)	pCi/L	0.236	1	0.889	1.96	1.264
Selenium, Se	ug/L	0.1	0.1	0.2	0.05 J	0.2
Thallium, Tl	ug/L	0.022	0.02 J	0.05 U	0.01 J	0.05 J

WBSP-15-05
SUMMARY OF ANALYTICAL RESULTS
Indiana-Kentucky Electric Corporation
Clifty Creek Station
Madison, Indiana

Parameter	Units	Nov-16	Feb-17	Jun-17	Aug-17
Appendix III Constituents					
Boron, B	mg/L	2.99	2.88	2.6	0.107
Calcium, Ca	mg/L	121	104	108	28.9
Chloride, Cl	mg/L	60.8	56.7	61.3	60.3
Fluoride, F	mg/L	0.15	0.16	0.15	0.17
pH	s.u.	8.26	7.57	7.67	6.92
Sulfate, SO4	mg/L	217	209	219	229
Total Dissolved Solids (TDS)	mg/L	490	540	561	498
Appendix IV Constituents					
Antimony, Sb	ug/L	0.11	0.06	0.03 J	0.04 J
Arsenic, As	ug/L	2.49	2.76	3.85	2.65
Barium, Ba	ug/L	131	135	125	111
Beryllium, Be	ug/L	0.005 J	0.005 J	0.01 J	0.02 U
Cadmium, Cd	ug/L	0.04	0.03	0.02 J	0.02
Chromium, Cr	ug/L	0.189	0.26	0.424	0.113
Cobalt, Co	ug/L	1.19	1.26	1.17	1.13
Fluoride, F	mg/L	0.15	0.16	0.15	0.17
Lithium, Li	mg/L	0.001	0.002	0.002	0.001 U
Lead, Pb	ug/L	0.192	0.147	0.142	0.024
Mercury, Hg	ug/L	0.004 J	0.005 U	1.16	0.005 U
Molybdenum, Mo	ug/L	97.5	92.8	78.9	82.4
Radium 226 & 228 (combined)	pCi/L	1.135	0.43	2.179	1.351
Selenium, Se	ug/L	0.04 J	0.05 J	0.05 J	0.1 U
Thallium, Tl	ug/L	0.02 J	0.072	0.05 U	0.01 J

WBSP-15-06
SUMMARY OF ANALYTICAL RESULTS
Indiana-Kentucky Electric Corporation
Clifty Creek Station
Madison, Indiana

Parameter	Units	Jan-16	Mar-16	May-16	Jul-16	Aug-16
Appendix III Constituents						
Boron, B	mg/L	2.74	2.64	2.79	2.91	2.72
Calcium, Ca	mg/L	103	101	113	119	122
Chloride, Cl	mg/L	47.2	49.3	58.3	62.7	64.1
Fluoride, F	mg/L	0.14	0.2 U	0.19	0.15	0.1 J
pH	s.u.	7.82	7.61	8.02	7.9	7.25
Sulfate, SO4	mg/L	196	197	215	220	217
Total Dissolved Solids (TDS)	mg/L	476	506	504	536	540
Appendix IV Constituents						
Antimony, Sb	ug/L	0.25	0.1	0.04 J	0.04 J	0.11
Arsenic, As	ug/L	3.31	3.01	0.27	2.1	2.3
Barium, Ba	ug/L	90.6	76.8	73.7	64.7	63.9
Beryllium, Be	ug/L	0.017	0.02 U	0.02 U	0.02 U	0.02 J
Cadmium, Cd	ug/L	0.05 U	0.06	0.02	0.04	0.07
Chromium, Cr	ug/L	0.7	0.1	0.3	0.2	0.8
Cobalt, Co	ug/L	2.61	3.09	2.51	2.51	2.97
Fluoride, F	mg/L	0.14	0.2 U	0.19	0.15	0.1 J
Lithium, Li	mg/L	0.005 U	0.005	0.001 U	0.002	0.004
Lead, Pb	ug/L	0.456	0.085	0.062	0.109	0.684
Mercury, Hg	ug/L	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Molybdenum, Mo	ug/L	86.6	85.9	83.6	78.9	77.2
Radium 226 & 228 (combined)	pCi/L	0.428 U	0.291 U	0.4065	1.4354	0.30378
Selenium, Se	ug/L	0.1 U	0.03 J	0.08 J	0.1 U	0.2 J
Thallium, Tl	ug/L	0.02 U	0.05 U	0.05 U	0.02 J	0.04 J

WBSP-15-06
SUMMARY OF ANALYTICAL RESULTS
Indiana-Kentucky Electric Corporation
Clifty Creek Station
Madison, Indiana

Parameter	Units	Nov-16	Feb-17	Jun-17	Aug-17
Appendix III Constituents					
Boron, B	mg/L	2.89	0.042	2.72	2.78
Calcium, Ca	mg/L	122	55.4	111	117
Chloride, Cl	mg/L	69.5	70	75.5	75.2
Fluoride, F	mg/L	0.14	0.16	0.15	0.15
pH	s.u.	7.94	7.78	6.95	7.47
Sulfate, SO4	mg/L	214	224	225	232
Total Dissolved Solids (TDS)	mg/L	508	530	589	534
Appendix IV Constituents					
Antimony, Sb	ug/L	0.04 J	0.07	0.06	0.04 J
Arsenic, As	ug/L	2.04	2.27	1.83	1.39
Barium, Ba	ug/L	64.4	63.5	63.6	61.3
Beryllium, Be	ug/L	0.006 J	0.01 J	0.021	0.01 J
Cadmium, Cd	ug/L	0.03	0.05	0.08	0.09
Chromium, Cr	ug/L	0.158	0.631	0.654	0.295
Cobalt, Co	ug/L	2.56	2.56	2.31	2.32
Fluoride, F	mg/L	0.14	0.16	0.15	0.15
Lithium, Li	mg/L	0.002	0.001 U	0.002	0.007
Lead, Pb	ug/L	0.089	0.448	0.575	0.274
Mercury, Hg	ug/L	0.004 J	0.005 U	0.694	0.005 U
Molybdenum, Mo	ug/L	79.2	74.7	71.5	79.8
Radium 226 & 228 (combined)	pCi/L	0.736	1.261	2.801	0.789
Selenium, Se	ug/L	0.04 J	0.06 J	0.1	0.06 J
Thallium, Tl	ug/L	0.07	0.05 J	0.03 J	0.03 J

WBSP-15-07
SUMMARY OF ANALYTICAL RESULTS
Indiana-Kentucky Electric Corporation
Clifty Creek Station
Madison, Indiana

Parameter	Units	Jan-16	Mar-16	May-16	Jul-16	Aug-16
Appendix III Constituents						
Boron, B	mg/L	0.093	0.057	0.031	0.044	0.032
Calcium, Ca	mg/L	137	143	166	178	179
Chloride, Cl	mg/L	16.1	15.8	13.9	12.7	12.7
Fluoride, F	mg/L	0.25 U	0.28	0.31	0.3	0.33
pH	s.u.	7.54	6.93	7.01	7.07	6.62
Sulfate, SO4	mg/L	52.6	39.7	33.4	28.2	25
Total Dissolved Solids (TDS)	mg/L	754	760	750	742	728
Appendix IV Constituents						
Antimony, Sb	ug/L	0.37	0.44	0.14	0.1	0.09
Arsenic, As	ug/L	2.83	8.31	8.46	11.8	18.2
Barium, Ba	ug/L	196	231	225	224	284
Beryllium, Be	ug/L	0.02	0.021	0.028	0.008 J	0.02 J
Cadmium, Cd	ug/L	0.05 U	0.03	0.01 J	0.008 J	0.01 J
Chromium, Cr	ug/L	0.2	0.4	0.5	0.2	0.4
Cobalt, Co	ug/L	2.58	4.03	4.87	4.4	5.92
Fluoride, F	mg/L	0.25 U	0.28	0.31	0.3	0.33
Lithium, Li	mg/L	0.005 U	0.016	0.002	0.003	0.006
Lead, Pb	ug/L	0.233	0.336	0.326	0.092	0.264
Mercury, Hg	ug/L	0.005 U	0.002 J	0.005 U	0.005 U	0.005 U
Molybdenum, Mo	ug/L	10.1	10.5	7.28	6.85	8.88
Radium 226 & 228 (combined)	pCi/L	0.399 U	0.899	1.585	2.178	0.761
Selenium, Se	ug/L	0.3	0.3	0.1	0.1	0.2
Thallium, Tl	ug/L	0.04	0.03 J	0.03 J	0.02 J	0.02 J

WBSP-15-07
SUMMARY OF ANALYTICAL RESULTS
Indiana-Kentucky Electric Corporation
Clifty Creek Station
Madison, Indiana

Parameter	Units	Nov-16	Feb-17	Jun-17	Aug-17
Appendix III Constituents					
Boron, B	mg/L	0.043	0.863	0.061	0.051
Calcium, Ca	mg/L	171	258	179	183
Chloride, Cl	mg/L	12.6	11.6	12.6	12.7
Fluoride, F	mg/L	0.24	0.31	0.28	0.29
pH	s.u.	7.07	7.65	7.7	7.27
Sulfate, SO4	mg/L	14.9	9.8	6.3	4.7
Total Dissolved Solids (TDS)	mg/L	718	748	771	752
Appendix IV Constituents					
Antimony, Sb	ug/L	0.21	0.3	0.1	0.12
Arsenic, As	ug/L	29.4	21.5	35.9	29.9
Barium, Ba	ug/L	375	378	551	561
Beryllium, Be	ug/L	0.008 J	0.021	0.004 J	0.02 J
Cadmium, Cd	ug/L	0.01 J	0.008 J	0.02 U	0.01 J
Chromium, Cr	ug/L	0.238	0.667	0.11	0.446
Cobalt, Co	ug/L	6.86	5.87	5.03	4.78
Fluoride, F	mg/L	0.24	0.31	0.28	0.29
Lithium, Li	mg/L	0.001 J	0.006	0.008	0.007
Lead, Pb	ug/L	0.092	0.34	0.178	0.328
Mercury, Hg	ug/L	0.003 J	0.005 U	1.01	0.005 U
Molybdenum, Mo	ug/L	12	9.48	9.39	10.3
Radium 226 & 228 (combined)	pCi/L	0.901	1.606	15.37	1.66
Selenium, Se	ug/L	0.2	0.2	0.3	0.4
Thallium, Tl	ug/L	0.02 J	0.052	0.02 J	0.057

WBSP-15-08
SUMMARY OF ANALYTICAL RESULTS
Indiana-Kentucky Electric Corporation
Clifty Creek Station
Madison, Indiana

Parameter	Units	Jan-16	Mar-16	May-16	Jul-16	Aug-16
Appendix III Constituents						
Boron, B	mg/L	0.039	0.042	0.021	0.041	0.043
Calcium, Ca	mg/L	88.1	79.6	83.2	87.3	85.6
Chloride, Cl	mg/L	15.4	16.5	16	16.5	16
Fluoride, F	mg/L	0.25 U	0.2 U	0.23	0.18	0.21
pH	s.u.	6.85	6.5	6.83	6.87	6.49
Sulfate, SO4	mg/L	1 U	0.2 J	0.2 J	0.1 U	0.2 U
Total Dissolved Solids (TDS)	mg/L	356	440	364	394	348
Appendix IV Constituents						
Antimony, Sb	ug/L	0.23	0.13	0.09	0.08	0.1 J
Arsenic, As	ug/L	51.3	65.6	69.3	71.9	76.8
Barium, Ba	ug/L	368	395	466	393	386
Beryllium, Be	ug/L	0.064	0.081	0.052	0.098	0.059
Cadmium, Cd	ug/L	0.05 U	0.02	0.02 J	0.04	0.02 J
Chromium, Cr	ug/L	1.4	1.8	1	1.1	1.4
Cobalt, Co	ug/L	4.1	2.7	1.75	2.18	1.83
Fluoride, F	mg/L	0.25 U	0.2 U	0.23	0.18	0.21
Lithium, Li	mg/L	0.005 U	0.002 J	0.001 U	0.001 U	0.003
Lead, Pb	ug/L	1.41	1.47	0.905	2.72	1.13
Mercury, Hg	ug/L	0.005 U	0.002 J	0.005 U	0.003 J	0.005 U
Molybdenum, Mo	ug/L	4.66	2.24	1.44	0.82	1.75
Radium 226 & 228 (combined)	pCi/L	0.246 U	0.821 U	1.212	2.995	0.521
Selenium, Se	ug/L	0.3	0.4	0.3	0.4	0.4
Thallium, Tl	ug/L	0.02 U	0.02 J	0.02 J	0.02 J	0.1 U

WBSP-15-08
SUMMARY OF ANALYTICAL RESULTS
Indiana-Kentucky Electric Corporation
Clifty Creek Station
Madison, Indiana

Parameter	Units	Nov-16	Feb-17	Jun-17	Aug-17
Appendix III Constituents					
Boron, B	mg/L	0.027	0.03	0.083	0.113
Calcium, Ca	mg/L	83.1	79.2	73.9	77
Chloride, Cl	mg/L	15.8	15.3	16	16.3
Fluoride, F	mg/L	0.1 J	0.24	0.22	0.2
pH	s.u.	6.62	6.48	8.03	7.92
Sulfate, SO4	mg/L	0.2 U	0.2 U	0.2 U	0.2 U
Total Dissolved Solids (TDS)	mg/L	324	280	368	340
Appendix IV Constituents					
Antimony, Sb	ug/L	0.14	0.11	0.07	0.07
Arsenic, As	ug/L	72.7	59.7	79.2	75.8
Barium, Ba	ug/L	387	333	383	362
Beryllium, Be	ug/L	0.068	0.068	0.03	0.02 J
Cadmium, Cd	ug/L	0.02 J	0.02	0.008 J	0.02 U
Chromium, Cr	ug/L	1.41	1.39	0.675	0.607
Cobalt, Co	ug/L	1.83	1.95	1.48	1.36
Fluoride, F	mg/L	0.1 J	0.24	0.22	0.2
Lithium, Li	mg/L	0.001 U	0.001 U	0.008	0.006
Lead, Pb	ug/L	1.18	1.24	0.457	0.232
Mercury, Hg	ug/L	0.004 J	0.003 J	1.04	0.005 U
Molybdenum, Mo	ug/L	1.83	1.25	0.94	2.03
Radium 226 & 228 (combined)	pCi/L	1.949	1.044	1.223	0.7782
Selenium, Se	ug/L	0.3	0.3	0.2	0.3
Thallium, Tl	ug/L	0.03 J	0.02 J	0.05 U	0.05 U

WBSP-15-09
SUMMARY OF ANALYTICAL RESULTS
Indiana-Kentucky Electric Corporation
Clifty Creek Station
Madison, Indiana

Parameter	Units	Jan-16	Mar-16	May-16	Jul-16	Aug-16
Appendix III Constituents						
Boron, B	mg/L	0.014	0.048	0.006	0.021	0.023
Calcium, Ca	mg/L	62.2	75	50	47.7	49.9
Chloride, Cl	mg/L	4.94	4.78	3.57	3.26	3.12
Fluoride, F	mg/L	0.33	0.32	0.32	0.38	0.31
pH	s.u.	6.62	6.81	6.78	7.38	6.51
Sulfate, SO4	mg/L	4.5	6.2	3.8	4	3.6
Total Dissolved Solids (TDS)	mg/L	248	244	280	176	230
Appendix IV Constituents						
Antimony, Sb	ug/L	0.41	0.1	0.15	0.09	0.05 J
Arsenic, As	ug/L	7.35	5.88	21.6	26.5	19.1
Barium, Ba	ug/L	157	193	209	222	194
Beryllium, Be	ug/L	0.039	0.009 J	0.022	0.025	0.01 J
Cadmium, Cd	ug/L	0.05 J	0.04	0.01 J	0.05	0.02 J
Chromium, Cr	ug/L	0.4	0.2	0.6	0.8	0.3
Cobalt, Co	ug/L	2.57	6.06	3.79	3.8	3.24
Fluoride, F	mg/L	0.33	0.32	0.32	0.38	0.31
Lithium, Li	mg/L	0.004 J	0.005 U	0.001 U	0.024	0.001 U
Lead, Pb	ug/L	0.291	0.127	0.326	0.522	0.164
Mercury, Hg	ug/L	0.005 U	0.005 U	0.005 U	0.2 U	0.005 U
Molybdenum, Mo	ug/L	2.66	3.39	4.92	6.49	4.89
Radium 226 & 228 (combined)	pCi/L	0.114	0.426 U	0.448	0.663	1.047
Selenium, Se	ug/L	0.1	0.1	0.2	0.1	0.2 J
Thallium, Tl	ug/L	0.01 J	0.03 J	0.02 J	0.05 J	0.1 U

Notes:
1. NA = Not analyzed due to insufficent water in monitoring well or the reduced sampling plan

WBSP-15-09
SUMMARY OF ANALYTICAL RESULTS
Indiana-Kentucky Electric Corporation
Clifty Creek Station
Madison, Indiana

Parameter	Units	Nov-16	Feb-17	Jun-17	Aug-17
Appendix III Constituents					
Boron, B	mg/L	0.031	0.124	0.07	0.048
Calcium, Ca	mg/L	51.1	47.4	44.6	48.6
Chloride, Cl	mg/L	3.2	3.98	2.23	2.52
Fluoride, F	mg/L	0.33	0.25	0.32	0.38
pH	s.u.	6.75	7.05	7.77	7.3
Sulfate, SO4	mg/L	1.8	282	0.2 J	0.5
Total Dissolved Solids (TDS)	mg/L	200	728	223	206
Appendix IV Constituents					
Antimony, Sb	ug/L	0.15	0.04 J	0.04 J	0.05 J
Arsenic, As	ug/L	20.4	25.4	28.1	19.5
Barium, Ba	ug/L	204	189	192	183
Beryllium, Be	ug/L	0.01 J	0.02 J	0.01 J	0.01 J
Cadmium, Cd	ug/L	0.005 J	0.006 J	0.005 J	0.02 J
Chromium, Cr	ug/L	0.358	0.479	0.26	0.4
Cobalt, Co	ug/L	3.25	2	1.58	1.47
Fluoride, F	mg/L	0.33	0.25	0.32	0.38
Lithium, Li	mg/L	0.001 U	0.014	0.004	0.005
Lead, Pb	ug/L	0.179	0.238	0.135	0.21
Mercury, Hg	ug/L	0.004 J	0.005 U	0.668	0.005 U
Molybdenum, Mo	ug/L	12.4	4.66	3.39	5.65
Radium 226 & 228 (combined)	pCi/L	0.4799	NA	1.443	0.708
Selenium, Se	ug/L	0.1	0.06 J	0.1	0.1
Thallium, Tl	ug/L	0.02 J	0.05 U	0.05 U	0.05 U

Notes:
1. NA = Not analyzed due to insufficent water in monitoring well or the reduced sampling plan

WBSP-15-10
SUMMARY OF ANALYTICAL RESULTS
Indiana-Kentucky Electric Corporation
Clifty Creek Station
Madison, Indiana

Parameter	Units	Jan-16	Mar-16	May-16	Jul-16	Aug-16
Appendix III Constituents						
Boron, B	mg/L	0.023	0.058	0.018	0.032	0.08
Calcium, Ca	mg/L	85.3	75.2	91.4	87.8	94.8
Chloride, Cl	mg/L	18.3	19.8	21	21	21.1
Fluoride, F	mg/L	0.2 J	0.25	0.27	0.28	0.23
pH	s.u.	6.73	6.88	6.82	7.4	6.65
Sulfate, SO4	mg/L	61.4	51.5	41	43.1	58.6
Total Dissolved Solids (TDS)	mg/L	350	400	370	376	370
Appendix IV Constituents						
Antimony, Sb	ug/L	0.23	0.17	0.2	0.29	0.16
Arsenic, As	ug/L	1.73	4.27	8.35	5.52	3.66
Barium, Ba	ug/L	196	203	225	198	208
Beryllium, Be	ug/L	0.032	0.041	0.077	0.037	0.02 J
Cadmium, Cd	ug/L	0.06	0.04	0.03	0.03	0.03 J
Chromium, Cr	ug/L	0.3	0.8	1.2	0.9	0.4
Cobalt, Co	ug/L	2.81	2.68	3.18	2.19	2.17
Fluoride, F	mg/L	0.2 J	0.25	0.27	0.28	0.23
Lithium, Li	mg/L	0.003 J	0.005 U	0.001 U	0.004	0.003
Lead, Pb	ug/L	0.342	0.455	1.04	0.622	0.392
Mercury, Hg	ug/L	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Molybdenum, Mo	ug/L	2.51	3.84	3.58	4.52	16.4
Radium 226 & 228 (combined)	pCi/L	0.0206	0.857 U	0.288	1.374	1.274
Selenium, Se	ug/L	0.1	0.1	0.3	0.1	0.1 J
Thallium, Tl	ug/L	0.01 J	0.04 J	0.02 J	0.02 J	0.02 J

WBSP-15-10
SUMMARY OF ANALYTICAL RESULTS
Indiana-Kentucky Electric Corporation
Clifty Creek Station
Madison, Indiana

Parameter	Units	Nov-16	Feb-17	Jun-17	Aug-17
Appendix III Constituents					
Boron, B	mg/L	0.055	0.088	0.111	0.061
Calcium, Ca	mg/L	88.2	75.9	66.1	72.6
Chloride, Cl	mg/L	20.8	20.6	21	21.3
Fluoride, F	mg/L	0.24	0.25	0.25	0.25
pH	s.u.	6.72	7.11	7.49	7.53
Sulfate, SO4	mg/L	45.1	35.3	38.6	37.1
Total Dissolved Solids (TDS)	mg/L	328	314	328	288
Appendix IV Constituents					
Antimony, Sb	ug/L	0.21	0.15	0.15	0.14
Arsenic, As	ug/L	12.5	6.92	10.6	7.27
Barium, Ba	ug/L	273	216	292	236
Beryllium, Be	ug/L	0.306	0.077	0.276	0.071
Cadmium, Cd	ug/L	0.1	0.03	0.11	0.03
Chromium, Cr	ug/L	6.45	1.84	5.63	1.75
Cobalt, Co	ug/L	6.47	2.39	5.67	2.59
Fluoride, F	mg/L	0.24	0.25	0.25	0.25
Lithium, Li	mg/L	0.013	0.016	0.011	0.009
Lead, Pb	ug/L	4.91	0.943	4.56	1.1
Mercury, Hg	ug/L	0.011	0.002 J	1.2	0.005 U
Molybdenum, Mo	ug/L	29.9	3.86	2.7	5.6
Radium 226 & 228 (combined)	pCi/L	1.336	0.6692	0.2395	0.859
Selenium, Se	ug/L	0.9	0.2	1	0.2
Thallium, Tl	ug/L	0.095	0.03 J	0.069	0.03 J