2024 Annual Groundwater Monitoring Report Per EPA CCR Rule (CFR § 257.90-.98)

Asbury Power Plant CCR Impoundment
Jasper County, MO

January 2025

Prepared For:
The Empire District Electric Company
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Midwest Environmental CONSULTANTS

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CERTIFICATE OF COMPLIANCE

Annual Groundwater Monitoring Report for Existing CCR Surface Impoundments
EPA CCR Rule Section 40 CFR 257.90 (e)
Empire District Electric Company – Asbury Power Plant
Asbury, Missouri

The following presents the Annual Groundwater Monitoring Report for the Empire District Electric Company's CCR Impoundment at the Asbury Power Plant. This serves as certification that the facility is in compliance with 40 CFR 257.90 (e) of the EPA CCR Rule.

40 CFR 257.90 (e) states:
(e) Annual groundwater monitoring and corrective action report. For existing CCR landfills and existing CCR surface impoundments, no later than January 31, 2018, and annually thereafter, the owner or operator must prepare an annual groundwater monitoring and corrective action report.

CERTIFICATION 257.90 (e)
The undersigned Professional Engineer (P.E.) is familiar with the requirements of 40 CFR Part 257. The above summarizes the status of the Groundwater Monitoring for the Empire District Electric Company's CCR Impoundment at the Asbury Power Plant. I hereby certify that the facility is in compliance with 40 CFR 257.90 (e) and all information has been placed in the Operating Record. Notification of availability of this document should be provided to the State Director as required in section 257.107(h).

Name: Lindsey R. Henry, PE

Signature:

Date: 1/28/2025

Registration Number: E-21592

State: Missouri

Seal:

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1.0 INTRODUCTION

The EPA Coal Combustion Residual Regulations (40 CFR Part 257) (CCR Rule) require groundwater monitoring of CCR impoundments. This Asbury Power Plant CCR impoundment groundwater monitoring sampling report is in accordance with the EPA CCR Rule.

In accordance with the EPA CCR Rule (§ 257.90-.98) the status of the Groundwater Monitoring was placed on-line October 17, 2017, as required by the EPA CCR rule. Background data of Appendix III and Appendix IV was collected from January 2016 to August 2017. After review of the first semi-annual groundwater sampling event analytical results completed in October 2017, the constituents listed in Appendix IV were eliminated from the overall semi-annual detection monitoring plan in accordance with the EPA CCR Rule.

The Asbury Power Plant was retired on March 1, 2020. Residual fly ash, bottom ash, and other related wastes were placed in the impoundment area until April 1, 2021, as part of the decommissioning activities. On April 1, 2021, a Notification of Intent to Close CCR Surface Impoundment was posted to the facility's website and the State Director (MDNR) was notified. Dewatering of the impoundment was occurring during the first part of 2022. CCR grading, excavation and relocation activities began in June of 2022. Construction Closure of the final cap of the CCR impoundment was completed on January 23, 2023.

On May 13, 14 & 15, 2024, and November 11 & 12, 2024 semi-annual detection monitoring sampling events was conducted per the EPA CCR Rule (§ 257.94). The original nine (9) groundwater-monitoring wells were sampled and analyzed for the EPA Appendix III. In addition, MW-5AR sampling began in May 2023. MW-5AR was installed in April 2023 in response to the Alternative Source Demonstration (ASD) which was completed in April 2021. The ASD was placed in the operating record. The ASD found the statistically significant increase resulted from an error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality instead of a release to groundwater.

The ASD theorized that this SSI was an issue with the location of the well rather than from a release from the facility. This alternative source demonstration confirmed that MW-5A may be impacted by its placement upgradient of a historic dewatering trench and cutoff trench. The ASD proposed a replacement well for MW-5A be installed downgradient of the dewatering trench and cutoff trench system. The new replacement well MW-5AR was installed prior to the May 2023 sampling event and the initial sampling results were compared to the existing MW-5A. Review of initial sampling results indicate that the theory may be correct. Monitoring of both MW-5A and MW-5AR will continue until the eight needed baseline samples are collected for MW-5AR and statistical analysis can begin. Sampling of MW-5A will then cease. Based on the results of the 2024 statistical analysis, the site will continue with detection monitoring for the 2025 sampling events per the EPA CCR Rule (§ 257.94).

The EPA CCR Rule requires the annual groundwater report to be completed by January 31st of the following year. This report serves as the annual groundwater report for the 2024 sampling events that will be completed by January 31, 2025 and posted on-line within 30 days. This report was prepared in general accordance with the EPA CCR Rule for groundwater requirements. These regulations outline groundwater monitoring requirements and data evaluation methods. The Empire District will notify the MDNR "State Director" via e-mail when this document is posted on-line, as required in the CCR rule.

2.0 BACKGROUND DATA

The purpose of the groundwater monitoring plan is to monitor the groundwater quality surrounding the facility and to evaluate potential impacts and/or releases from facility operations. The groundwater monitoring system for the site consists of the following monitoring wells:

- MW-1 Sidegradient (water level only)
- MW-2 Upgradient
- MW-3 Upgradient
- MW-4 Downgradient
- MW-5 Downgradient
- MW-5A Downgradient
- MW-5AR Downgradient (background sampling)
- MW-6 Downgradient
- MW-6A Downgradient
- MW-7 Sidegradient

Background groundwater data was collected from January 2016 to August 2017. After the background data plus the first semi-annual sampling events, a reduced sampling frequency replaced the quarterly events to semi-annual events. This lessened sampling frequency will be completed during the months of April/May/June and October/November/December. Statistical analysis for EPA Appendix III began after the first semi-annual sampling event was collected on October 4, 2017. MW-5AR baseline monitoring started in May 2023 and will be completed semi-annually until eight (8) rounds of background sampling data are obtained.

3.0 MAY 2024 SAMPLING EVENT

On May 13, 14, & 15, 2024, a semi-annual sampling event was conducted per the EPA CCR Rule (§ 257.90-.98). The original nine (9) groundwater-monitoring wells were sampled and analyzed for the EPA Appendix III. In addition, MW-5AR was also sampled for Appendix III and Appendix IV parameters. For quality assurance and quality control measures, a duplicate sample at MW-5 was taken.

Table 1 – Constituents During May 2024 Sampling Event

Constituent	Units	MCL	MW-2 (up)	MW-3 (up)	MW-4 (down)	MW-5 (down)	MW-5A (down)	MW-5AR (down)	MW-6 (down)	MW-6A (down)	MW-7 (side)
Appendix III											
Boron	ug/L	NE	94	62	<60	290	2100	430	380	270	280
Calcium	mg/L	NE	28	100	220	89	430	130	270	180	490
Chloride	mg/L	NE	110	53	19	5.8	170	7.2	32	63	39
Fluoride	mg/L	4.0	0.15	0.14	0.11	0.30	0.21	0.24	0.22	0.16	0.12
pH	SU	NE	5.72	5.77	7.00	7.17	6.78	7.08	6.93	6.51	6.47
Sulfate	mg/L	NE	110	490	560	150	1900	420	1100	950	1800
Total Dissolved Solids	mg/L	NE	410	940	1300	570	3200	960	1900	1700	2800

NE = Not Established

<x = Less than reporting limit (nondetectable)

J = Trace value seen above minimum detection limit but below reporting limit (trace)

The May 2024 sampling results confirmed an interwell prediction exceedance for boron (MW-5A) and total dissolved solids (MW-5A) from the November 2023 sampling event. There are no current primary (health based) MCLs for boron or total dissolved solids. The facility will resample as part of the November 2024 sampling event.

There was one initial interwell prediction limit exceedance for chloride (MW-5A) in the listed monitoring well during November 2023 sampling event. The initial SSI for chloride was not confirmed during the May 2024 sampling event.

The results of the interwell prediction limit statistical analysis of the November 2020, May 2021, November 2021, May 2022, November 2022, May 2023 sampling, November 2023, and May 2024 events indicate a confirmed exceedance for Boron (MW-5A). EPA CCR Rule 40 CFR § 257.94(e)(2) allows an Alternative Source Demonstration (ASD) that the statistically significant increase resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality for a constituent found in a monitoring well. This ASD was completed in April 2021 and placed in the operating record. The ASD found the statistically significant increase resulted from an error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality instead of a release to groundwater.

The ASD theorized that this SSI was an issue with the location of the well rather than from a release from the facility. This alternative source demonstration confirmed that MW-5A may be impacted by its placement upgradient of a historic dewatering trench and cutoff trench. The ASD proposed a replacement well for MW-5A be installed downgradient of the dewatering trench and cutoff trench system. The new replacement well MW-5AR was installed prior to the May 2023 sampling event and the initial sampling results were compared to the existing MW-5A. Review of

initial sampling results indicate that the theory may be correct. Monitoring of both MW-5A and MW-5AR will continue until the eight needed background samples are collected for MW-5AR and statistical analysis can begin. Sampling of MW-5A will then cease.

Based upon these findings the site will not need to move into the assessment monitoring program at this time and will continue with the detection monitoring program per the EPA CCR Rule (§ 257.94) on a semi-annual basis.

4.0 NOVEMBER 2024 SAMPLING EVENT

On November 11 & 12, 2024, a semi-annual detection monitoring sampling event was conducted per the EPA CCR Rule (§ 257.94). The original nine (9) groundwater-monitoring wells were sampled and analyzed for the EPA Appendix III. In addition, MW-5AR was also sampled for Appendix III and Appendix IV parameters. For quality assurance and quality control measures, a duplicate sample at MW-5 was taken.

Table 2 – Constituents During November 2024 Sampling Event

Constituent	Units	MCL	MW-2 (up)	MW-3 (up)	MW-4 (down)	MW-5 (down)	MW-5A (down)	MW-5AR (down)	MW-6 (down)	MW-6A (down)	MW-7 (side)
Appendix III											
Boron	ug/L	NE	93	<100	<100	270	2000	390	350	220	240
Calcium	mg/L	NE	23000	100000	240000	87000	450000	99000	280000	190000	570000
Chloride	mg/L	NE	110	52	16	5.9	180	8.1	45	81	49
Fluoride	mg/L	4.0	0.16	0.13	0.097	0.29	0.22	0.19	0.22	0.15	0.16
pH	SU	NE	5.67	5.80	6.79	7.25	6.71	7.72	7.01	6.16	6.30
Sulfate	mg/L	NE	92	520	500	150	1900	430	1100	1000	1800
Total Dissolved Solids	mg/L	NE	350	890	1300	570	3200	900	1800	1500	2800

NE = Not Established

<x = Less than reporting limit (nondetectable)

J = Trace value seen above minimum detection limit but below reporting limit (trace)

The November 2024 sampling results confirmed an interwell prediction exceedance for boron (MW-5A) and total dissolved solids (MW-5A) from the May 2024 sampling event. There are no current primary (health based) MCLs for boron or total dissolved solids. The facility will resample as part of the November 2024 sampling event.

There were two initial interwell prediction limit exceedance for pH in MW-5 and MW-6. These wells will be resampled in May 2025.

The results of the interwell prediction limit statistical analysis of the November 2020, May 2021, November 2021, May 2022, November 2022, May 2023 sampling, November 2023, May 2024, and November 2024 events indicate a confirmed exceedance for Boron (MW-5A). EPA CCR Rule 40 CFR § 257.94(e)(2) allows an Alternative Source Demonstration (ASD) that the statistically significant increase resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality for a constituent found in a monitoring well. This ASD was completed in April 2021 and placed in the operating record. The ASD found the statistically significant increase resulted from an error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality instead of a release to groundwater.

The ASD theorized that this SSI was an issue with the location of the well rather than from a release from the facility. This alternative source demonstration confirmed that MW-5A may be impacted by its placement upgradient of a historic dewatering trench and cutoff trench. The ASD proposed a replacement well for MW-5A be installed downgradient of the dewatering trench and cutoff trench system. The new replacement well MW-5AR was installed prior to the May 2023 sampling event and the initial sampling results were compared to the existing MW-5A. Review of

initial sampling results indicate that the theory may be correct. Monitoring of both MW-5A and MW-5AR will continue until the eight needed background samples are collected for MW-5AR and statistical analysis can begin. Sampling of MW-5A will then cease.

Based upon these findings the site will not need to move into the assessment monitoring program at this time and will continue with the detection monitoring program per the EPA CCR Rule (§ 257.94) on a semi-annual basis.

5.0 EXCUTIVE SUMMARY

This report is a summary of the 2024 sampling events and the findings of the statistical analysis of the results of the groundwater detection monitoring program at the Asbury Power Plant CCR Impoundment. Specific information about each sampling event can be obtained from the individual reports which are included as appendices and have been placed in the Asbury Operating Record. Statistical analysis will continue utilizing interwell prediction limits per EPA's request. The site continues with the detection monitoring program on a semi-annual basis per the EPA CCR Rule (§ 257.94).

APPENDIX A

May 2024 Sampling Event

Groundwater Monitoring, Sampling & Statistics Per EPA CCR Rule (CFR § 257.90-257.98)

May 2024 Sampling Event

Asbury Power Plant CCR Impoundment
Jasper County, MO

July 2024

Prepared For:
The Empire District Electric Company
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1.0 INTRODUCTION

The EPA Coal Combustion Residual Regulations (40 CFR Part 257) (CCR Rule) require groundwater monitoring of CCR impoundments. This Asbury Power Plant CCR impoundment groundwater monitoring sampling report is in accordance with the EPA CCR Rule. In accordance with the EPA CCR Rule (§ 257.90-.98) the status of the Groundwater Monitoring was placed on-line October 17, 2017, as required by the EPA CCR rule. Empire notified the Missouri Department of Natural Resources (MDNR) "State Director" via e-mail when this document was posted on-line, as required in the CCR rule.

The EPA CCR Rule requires the annual groundwater report to be prepared by January 31st of the following year. The first report was due January 31, 2018. This report was prepared in general accordance with the EPA CCR Rule for groundwater requirements. These regulations outline groundwater monitoring requirements and data evaluation methods. The annual groundwater report for the 2023 sampling events will be posted on-line within 30 days of placement in the operating record and the State Director will be notified.

A Site Characterization Workplan was submitted to the MDNR. On November 2, 2017, the facility received approval from MDNR that the site had been properly characterized and the facility could begin groundwater monitoring (included in **Appendix 1**).

The purpose of the groundwater monitoring system is to monitor the ground water quality surrounding the facility and to evaluate potential impacts and/or releases from facility operations. Eight rounds of background groundwater data were collected from January 2016 to August 2017. After the background data is obtained and after the first semi-annual sampling event, a reduced sampling frequency replaced the quarterly events to semi-annual events. This reduced sampling frequency will generally be completed during the months of May and November. Statistical analysis for EPA Appendix III results began after the first semi-annual sampling event which was collected on October 4, 2017. This analysis was to determine if a statistically significant increase (SSI) has occurred. If an SSI is verified, additional evaluation is required to determine if the SSI was caused by the CCR impoundment.

The Asbury Power Plant was retired on March 1, 2020. Residual fly ash, bottom ash, and other related wastes were placed in the impoundment area until April 1, 2021, as part of the decommissioning activities. On April 1, 2021, a Notification of Intent to Close CCR Surface Impoundment was posted to the facility's website and the State Director (MDNR) was notified. Dewatering of the impoundment was occurring during the first part of 2022. CCR grading, excavation and relocation activities began in June of 2022. Closure of the CCR impoundment was completed on January 23, 2023.

On May 13, 14 and 15, 2024, a semi-annual sampling event was conducted per the EPA CCR Rule (§ 257.90-.98). The original nine (9) groundwater-monitoring wells were sampled and analyzed for the EPA Appendix III. In addition, MW-5AR sampling began in May 2023. MW-5AR was installed in April 2023 in response to the Alternative Source Demonstration (ASD) which was completed in April 2021. The ASD was placed in the operating record. After review of the first semi-annual groundwater sampling event analytical results completed in October 2017, the constituents listed in Appendix IV were eliminated from the overall semi-annual detection monitoring plan in accordance with the EPA CCR Rule. For quality assurance and quality control

measures, a duplicate sample at MW-5 was taken. These samples were preserved and submitted directly to the laboratory.

This report is a summary of the May 2024 sampling event and the findings of the statistical analysis of the results of the groundwater monitoring program at the Asbury Power Plant CCR Impoundment. Specific information about each sampling event can be obtained from the individual report which is part of the Asbury Operating Record.

2.0 SITE LOCATION

The site occupies the north half of Section 17, Township 30 North, and Range 33 West on the Asbury 7.5-Minute Quadrangle Map as seen in **Figure 1**. The site is located approximately 5.5 miles north-northeast of Asbury, Missouri, about 14 miles north-northwest of Joplin, Missouri. A map showing the locations of the monitoring wells is in **Figure 2**.

2.1 History

In March 1996, five (5) groundwater monitoring wells, MW-1 through MW-5, were installed around the perimeter of the Asbury Power Plant CCR impoundment. Monitoring wells MW-1, MW-2 and MW-3 were installed to a total depth of between 27.0 to 28.5 feet below ground surface (bgs). Monitoring wells MW-4 and MW-5 were installed to a total depth of 48 feet bgs. Each of the five monitoring wells was equipped with 10.0-foot well screens. The five wells were then developed, purged, and sampled in 1996.

In 2003, two (2) additional groundwater monitoring wells were installed and identified as MW-6 and MW-7. Both wells had 2-inch diameter PVC well casings installed to an approximate total depth of 44 feet below ground surface. Both wells were installed with an above ground steel protective cover. No other construction details such as well screen lengths were available for these two (2) wells. In December 2015, two (2) additional groundwater monitoring wells were installed and identified as MW-5A and MW-6A.

In April 2023, monitoring well MW-5AR was installed as proposed in the Alternative Source Demonstration completed April 2021. As part of this well installation maintenance of the entire groundwater monitoring well system was also completed. This included the installation of new concrete well pads, protective covers, and protective bollards. The well riser pipe was also modified for well cap installation. New as-built survey data was obtained and will be utilized in this and future reports. MW-5A will not be removed until after the eight (8) background samples have been collected for MW-5AR.

All wells are registered with MDNR – Missouri Geological Survey Program.

The Asbury Power Plant was retired on March 1, 2020, but residual fly ash, bottom ash, and other related wastes were placed in the impoundment area as part of the decommissioning activities. The facility is now known as the Asbury Renewable Operations Center. On April 1, 2021, a Notification of Intent to Close CCR Surface Impoundment was posted to the facility's website and the State Director (MDNR) was notified. Dewatering of the impoundment was occurring during the first part of 2022. CCR grading, excavation and relocation activities began in June of 2022. Closure of the CCR impoundment was completed on January 23, 2023.

2.2 Site Geology

Drilling and subsurface investigation activities at the Site and as part of the MDNR approved CCR landfill Detailed Site Investigation (DSI) for the adjacent landfill area identified three (3) primary geologic units at the Site. These geologic units include the surficial soil layer, Warner Sandstone (uppermost aquifer), and Riverton Shale (confining unit). The information presented herein includes the primary elements of a site characterization work plan consistent with the MDNR guidance.

Surficial Soil. Soils at the site consist of a surficial unit of cohesive soils (e.g., CL, SC, ML, and CH) underlain by Pennsylvanian-age bedrock. Soil thickness at the Site ranges from approximately 15-25 feet.

Warner Sandstone. The Warner Sandstone (Sandstone) is the uppermost bedrock unit in the south portion of the Site. In the north area of the Site, the Sandstone is overlain by the Riverton Shale (Shale). Based on the DSI information, the Sandstone and Shale can occur as alternating layers. The Sandstone and Shale are gradational in places and transition from shaley sandstone to sandy shale. According to the MDNR publication on the Pennsylvanian Subsystem in Missouri, the Warner Sandstone formation is described as follows: "Generally, the lower part is interbedded, very fine-grained sandstone and claystone. The upper part is largely medium bedded to massive channel fill sandstone. In places, the Warner consists primarily of shale and claystone, with only minor amounts of sandstone" and "ranges in thickness from 0 to 15m (49.2 ft.)."

The Sandstone is more than 25-30 feet thick in places and is generally medium hard and thin to medium bedded with occasional shale partings. The degree of induration of the Sandstone varies and generally increases with depth. Slug tests performed at selected DSI piezometers screened in the Sandstone exhibited hydraulic conductivities ranging from approximately 1.3x10-4 cm/sec to 5.9x10-6 cm/sec. The slug test results are consistent with values for sandstone and shaley sandstone. The groundwater gradient is towards the east and Blackberry Creek.

Riverton Shale. Layers of the Riverton Shale (Shale) exhibited thicknesses ranging from approximately one foot to more than 10 feet. The Shale is generally dark gray to light gray. The Shale is mainly thin bedded with hardness ranging from soft to hard. Six packer tests were performed during the DSI to assess the hydraulic conductivity of the Shale. The packer test results ranged from approximately $3.2x10^{-6}$ cm/sec to $4.9x10^{-8}$ cm/sec. The packer test data indicates that the Shale is an effective confining unit.

According to the MDNR publication on the Pennsylvanian Subsystem in Missouri, the Riverton Shale formation is described as "dark gray to black, fine-grained, relatively brittle shale and contains as many as three coal beds, each of which is underlain by underclay" and "varies in thickness from a featheredge to more than 90 feet".

Unnamed Coal. The Shale includes coal seams in places that range in thickness from a few inches to approximately 1.5 feet. The coal is generally black to dark gray.

2.3 Groundwater Monitoring Network Design

The groundwater monitoring system for the CCR impoundment consists of nine (9) groundwater monitoring wells plus the recently installed MW-5AR. Two (2) wells are considered upgradient. Two (2) wells are considered sidegradient; one well is only monitored for groundwater elevation. The remaining five (5) wells are considered downgradient along with the recently installed MW-5AR.

The groundwater monitoring wells (MWs) at the Asbury Power Plant is equipped with individual dedicated poly tubing to be connected to a peristaltic pump/controller at the surface. Low-flow, micro-purge and sampling techniques and technology are utilized to collect groundwater samples from the subject wells. The groundwater sampling procedures are discussed in further detail below.

2.4 Groundwater Monitoring Network

The locations of the monitoring wells are shown in **Figure 2**. The groundwater monitoring system for the site consists of the following monitoring wells:

- MW-1 Sidegradient (water level only)
- MW-2 Upgradient
- MW-3 Upgradient
- MW-4 Downgradient
- MW-5 Downgradient
- MW-5A Downgradient
- MW-5AR Downgradient (background sampling)
- MW-6 Downgradient
- MW-6A Downgradient
- MW-7 Sidegradient

2.5 Seasonal Variation

Historical groundwater elevation data has been limited. However, adequate lengths of well screen have been utilized during the construction of the wells to accommodate typical seasonal groundwater elevation variations seen in southwest Missouri.

2.6 Groundwater Flow Direction

Historically, the seasonally high potentiometric surface indicated the groundwater flow direction to the east. **Figure 3** is a potentiometric map for this sampling event.

Originally MW-7 was thought to be a downgradient well but review of the potentiometric mapping from the eight background sampling events revealed that the well is a sidegradient well. Therefore, the designation for MW-7 has been changed from a downgradient to a sidegradient well for compliance monitoring.

3.0 BACKGROUND GROUNDWATER DATA

In accordance with EPA CCR Rule § 257.94(b), the site initiated the detection monitoring program in January 2016 to include obtaining a minimum of eight (8) independent samples for each background and downgradient well. The eight (8) independent groundwater samples were obtained and analyzed as required by the CCR Rule per the groundwater monitoring plan. Background groundwater data was collected from January 2016 to August 2017.

Groundwater Monitoring Reports were completed for each sampling event and have been placed in the Operating Record. A listing of each background groundwater monitoring event is below:

- January 2016
- March 2016
- May 2016
- August 2016
- October 2016
- March 2017
- June 2017
- August 2017

Initial background monitoring was required at all monitoring wells. The sampling frequency was quarterly or more frequently for the first two (2) years. After the background data plus the first semi-annual sampling events, a reduced lower sampling frequency replaced the quarterly events to semi-annual events. This lessened sampling frequency will be completed during the months of April/May/June and October/November/December. MW-5AR background monitoring started in May 2023 and will be completed semi-annually until eight (8) rounds of background sampling data are obtained.

The initial two (2) years of background and the first semi-annual detection monitoring included parameters listed in Appendix III and Appendix IV of the EPA CCR Rule. The constituents listed in Appendix IV were eliminated from the overall semi-annual detection monitoring plan after review of the first semi-annual groundwater sampling event analytical results in January 2018, according to the EPA CCR Rule.

4.0 GROUNDWATER SAMPLING EVENT

On May 13, 14 and 15, 2024, nine (9) groundwater monitoring wells were sampled by Midwest Environmental Consultants (MEC) for the EPA CCR Rule Appendix III parameters. In addition, MW-5AR was also sampled for Appendix III and Appendix IV parameters. For quality assurance and quality control measures, a duplicate sample was taken at MW-5. The sampling protocol and methodology was to be conducted in accordance with the facility's Sampling and Analysis Plan. **Table 1** provides a list of the analytical methods employed by the subcontracted laboratory.

Table 1 – Analytical Methods	
Method	**Description**
9056A	Anions, Ion Chromatography
6020A	Metals (ICP/MS)
SM 2540C	Solids, Total Dissolved (TDS)
Field Sampling	Field Sampling

Appendix 2 includes Monitoring Well Field Inspection sheets and field notes. The physical integrity of the wells was good. During sample collection each of the wells was monitored for pump discharge and formation recharge. Initially, a static water level for each well was recorded (**Table 2**). To ensure sufficient recharge while sampling, static water levels were collected during pumping. Prior to sample collection, field parameters for each well were measured with a flow-through meter. When the field parameters stabilized, samples for analytical testing were collected and placed on ice for hand delivery to the laboratory. At the conclusion of sample collection from each well, a final static water level measurement was obtained. The samples were collected in the appropriately pre-preserved sample containers and placed on ice for delivery.

Table 2 - Groundwater Sampling Field Parameters Summary During May 2024 Sampling Event				
WELL ID	**STATIC WATER LEVEL (ft-BTOC)**		**PURGE RATE (mL/min)**	**STABILIZED pH**
	Initial	**Final**		
MW-1*	6.54	6.54	NA	NA
MW-2	3.41	7.07	200	5.72
MW-3	0.5	0.6	200	5.77
MW-4	7.57	13.59	200	7.00
MW-5	1.74	11.97	200	7.17
MW-5A	9.16	18.59	200	6.78
MW-5AR	2.88	12.23	200	7.08
MW-6	8.67	19.22	200	6.93
MW-6A	7.69	17.94	200	6.51
MW-7	3.26	2.55	200	6.47

* Water Level Only NA – Not Applicable

Appendix 3 includes the analytical results for the sampling event. Included with this analytical report are sample information; chain of custody; wet chemistry data; and volatile data.

5.0 DATA VALIDATION PROCEDURES FOR GROUNDWATER MONITORING DATA

Midwest Environmental Consultants receives Data Packages from the analytical laboratory (Eurofins). The internal quality control/quality assurance case narratives and reported data are then reviewed. Generally, the data validation procedures established by the U.S. Environmental Protection Agency *Contract Laboratory Program Functional Guidelines for Organic Data Review* and *Functional Guidelines for Inorganic Data Review* is followed. These guidelines are used to assign data qualifiers to the data. A formal data validation report for the site is not prepared; however, any significant issues are noted in the groundwater monitoring report.

MEC evaluates the data set for precision, accuracy, representativeness, comparability, and completeness (PARCC).

5.1 Precision

Laboratory Precision. Laboratory quality control procedures to measure precision consist of laboratory control sample (LCS) analysis and analysis of matrix spike/matrix spike duplicates (MS/MSD). These analyses are used to define analytical variability.

Field Precision. Analyses of duplicate samples are used to define the total variability (replicability) of the sampling/analytical system. Field replicates are collected at a rate of one per sampling event.

5.2 Accuracy

Accuracy is determined by calculating the percent recoveries for analyses of surrogate compounds, LCSs, continuing calibration check standards, and matrix spike samples. Acceptable percent recoveries are established for SW-846 and EPA methods. Field and laboratory blank analysis are also used to address measurement bias.

Field Blanks. Field blanks consisted of a trip blank and a field blank. One trip blank per cooler accompanies samples for volatile organic analyses.

Laboratory Blanks. Method blanks, artificial, matrix-less samples, are analyzed to monitor the laboratory analysis system for interferences and contamination from glassware, reagents, etc. Method blanks are taken through the entire sample preparation process. They are included with each batch of extractions or digestion prepared, or with each 20 samples, whichever is more frequent.

5.3 Representativeness

Representativeness expresses the degree to which sample data accurately and precisely reflects site condition. Representativeness of the data is determined by comparing actual sampling procedures to those delineated in the field sampling plan, comparing results from field replicate samples, and reviewing the results of field blanks. Field notes are reviewed as part of our data validation process.

5.4 Comparability

Comparability expresses the confidence with which one data set can be compared to another data set measuring the same property. Comparability is ensured by using established and approved sample collection techniques and analytical methods, consistent basis of analysis, consistent reporting units, and analyzing standard reference materials.

5.5 Completeness

Completeness is a measure of the amount of valid data obtained from a measurement system compared to the amount expected under controlled laboratory conditions. Completeness is defined as the valid data percentage of the total tests requested. Valid data are defined as those where the sample arrived at the laboratory intact, properly preserved, in sufficient quantity to perform the requested analyses, and accompanied by a completed chain-of-custody form. Furthermore, the sample must have been analyzed within the specified holding time and in such a manner that analytical QC acceptance criteria were met.

6.0 GROUNDWATER ANALYSIS

Groundwater samples were submitted to Eurofins Environmental Testing for analysis.

6.1 Sampling Results

The constituents with results above the laboratory reporting limits are included in **Table 3**. This table also includes the recently installed MW-5AR. The Eurofins laboratory analytical results are included in **Appendix 3**.

Table 3 – Constituents During May 2024 Sampling Event

Constituent	Units	MCL	MW-2 (up)	MW-3 (up)	MW-4 (down)	MW-5 (down)	MW-5A (down)	MW-5AR (down)	MW-6 (down)	MW-6A (down)	MW-7 (side)
Appendix III											
Boron	ug/L	NE	94	62	<60	290	2100	430	380	270	280
Calcium	mg/L	NE	28	100	220	89	430	130	270	180	490
Chloride	mg/L	NE	110	53	19	5.8	170	7.2	32	63	39
Fluoride	mg/L	4.0	0.15	0.14	0.11	0.30	0.21	0.24	0.22	0.16	0.12
pH	SU	NE	5.72	5.77	7.00	7.17	6.78	7.08	6.93	6.51	6.47
Sulfate	mg/L	NE	110	490	560	150	1900	420	1100	950	1800
Total Dissolved Solids	mg/L	NE	410	940	1300	570	3200	960	1900	1700	2800

NE = Not Established

<x = Less than reporting limit (nondetectable)

J = Trace value seen above minimum detection limit but below reporting limit (trace)

No constituents were detected above the Federal Safe Drinking Water maximum contaminant level (MCL) during the sampling event.

6.2 Statistical Analysis Approach

Prediction interval analyses compare one or more observations to a limit set by background data. Interwell analyses compare observations from background wells, which include upgradient and sidegradient wells per EPA Unified Guidance definitions, and their relation to the observations for the downgradient wells. Due to varying geology in the state of Missouri, intrawell analyses had initially been deemed a more appropriate statistical method.

On January 21, 2020 MDNR forwarded an email from the USEPA that requested the site change the statistical evaluation methodology to interwell prediction limits. This correspondence is located in **Appendix 1.** The EPA review of the groundwater reports is summarized in **Table 4**.

Table 4 – EPA Review of Groundwater Reports	
Facility	Asbury Power Plant
Location	Asbury, MO
Owner	Empire District Electric Company
Units	Upper Pond-unlined, South Pond-unlined, Lower Pond-unlined
Geology	Surficial unit of clay, clayey sand, and silt approximately 15 to 25 feet thick underlain by Warner Sandstone approximately 25-30 feet thick in the southern portion of the site and the Riverton Shale in the northern area of the site
Problematic Use of Intra Well Comparisons	Analytical results indicate consistent differences in contaminant concentrations between upgradient and downgradient wells. Consequently, interwell comparisons are feasible and would be preferable in the absence of compelling reasons to use intra well analysis
Problematic Alternate Source Determination	
Conclusions	While there are no boring logs in the documents to confirm that the wells are screened in the same geologic unit, consistency in the field parameters and the description of the geology suggest that the wells are screened in the sandstone. The analytical results indicate consistent differences in contaminant concentrations between upgradient and downgradient wells, consequently, interwell comparisons are feasible and would be preferable in the absence of compelling reasons to use intra wells analyses

6.3 Statistical Analysis Results

Statistical analysis was completed by Jett Environmental Consultant. The results are included in **Appendix 4.**

Inorganics – Times Series & Trend Testing

Time Series graphs were generated for each of the inorganic constituents. The time series graphs are included in **Appendix 4 Attachment 1**.

The inorganic constituents with results above the laboratory reporting limits were analyzed with Sanitas™ to determine if statistically significant increasing or decreasing trends exist utilizing the Sen's Slope / Mann-Kendall trend test. Trends were based on a 98% confidence level (two tailed). The following constituents exhibited statistically significant increasing trends: boron (MW-5A), calcium (MW-5A, MW-6A), chloride (MW-5, MW-5A, MW-6), fluoride (MW-7), sulfate (MW-5A, MW-6A), and total dissolved solids (MW-5A, MW-6A). Of the increasing trends, only one instance was for an upgradient well (fluoride at MW-7); however, fluoride was reported as non-detect over the last eight rounds of background sampling. All other constituents were either not trending or had a statistically significant decreasing trend. The trending data have only been reviewed at this time. No trending data was removed before performing the inter-well prediction interval analysis. The trend testing results are included in **Appendix 4 Attachment 2**.

Inorganics – Inter-Well Prediction Limits
Statistical Analysis was performed on the inorganic constituents and metals. Prediction interval analyses compare one or more observations to a limit set by background data. Background data consists of semi-annual groundwater tests from the upgradient wells (MW-2, MW-3, and MW-7) between January 2016 and May 2023 (20 events). Interwell analyses compare observations from upgradient background wells and their relation to the observations for the downgradient wells. Intra-well analyses compare background observations to current observations of the same well.

Sanitas™ was used to perform the statistical analyses. For most constituents, non-parametric inter-well prediction intervals were performed due to non-detectable levels in more than 50 percent of the background samples or if data were not normally distributed. The Sanitas™ inter-well prediction limit outputs are included in **Appendix 4 Attachment 3**.

Table 5 lists the parameters that exhibited a statistically significant increase (SSI) during the May 2024 sampling event, the associated monitoring wells, inter-well prediction limit, and the measured concentration. Also included on the table is a comparison to any established USEPA National Primary Drinking Water Standard – Maximum Contaminant Level (MCL).

Table 5
SSI Observed During May 2024 Sampling Event

Constituent (units)	Well	Initial vs. Confirmed	Statistical Limit	Result	MCL
Boron (mg/L)	MW-5A	Confirmed	0.9	2.1	NE
Total Dissolved Solids (mg/L)	MW-5A	Confirmed	3100	3200	NE

NE = Not Established.

MCL = USEPA National Primary Drinking Water Standard - Maximum Contaminant Level

Statistical Power Curves
A statistical power curve graph has been prepared to allow comparisons between the current monitoring program and USEPA-recommended standards. Under the USEPA's *Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance* (March 2009), inter-well prediction limits are constructed to have a site-wide false positive rate (SWFPR) of 10% annually, or 5% per event for a semi-annually sampled facility. **Appendix 4 Attachment 4** presents the power curves for the facility's monitoring program.

Results Summary
Boron (MW-5A) and total dissolved solids (MW-5A) exhibited confirmed SSIs during the May 2024 event.

No result exhibited an initial SSI during the May 2024 event.

Of the SSIs, none have an established MCL. During the November 2023 sampling event, an initial SSI was detected for chloride (MW-5A), which was not confirmed as an SSI during the May 2024 sampling event.

6.4 Results Interpretation

The May 2024 sampling results confirmed an interwell prediction exceedance for boron (MW-5A) and total dissolved solids (MW-5A) from the November 2023 sampling event. There are no current primary (health based) MCLs for boron or total dissolved solids. The facility will resample as part of the November 2024 sampling event.

There was one initial interwell prediction limit exceedance for chloride (MW-5A) in the listed monitoring well during November 2023 sampling event. The initial SSI for chloride was not confirmed during the May 2024 sampling event.

The results of the interwell prediction limit statistical analysis of the November 2020, May 2021, November 2021, May 2022, November 2022, May 2023 sampling, November 2023, and May 2024 events indicate a confirmed exceedance for Boron (MW-5A). EPA CCR Rule 40 CFR § 257.94(e)(2) allows an Alternative Source Demonstration (ASD) that the statistically significant increase resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality for a constituent found in a monitoring well. This ASD was completed in April 2021 and placed in the operating record. The ASD found the statistically significant increase resulted from an error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality instead of a release to groundwater.

The ASD theorized that this SSI was an issue with the location of the well rather than from a release from the facility. This alternative source demonstration confirmed that MW-5A may be impacted by its placement upgradient of a historic dewatering trench and cutoff trench. The ASD proposed a replacement well for MW-5A be installed downgradient of the dewatering trench and cutoff trench system. The new replacement well MW-5AR was installed prior to the May 2023 sampling event and the initial sampling results were compared to the existing MW-5A. Review of initial sampling results indicate that the theory may be correct. Monitoring of both MW-5A and MW-5AR will continue until the eight needed background samples are collected for MW-5AR and statistical analysis can begin. Sampling of MW-5A will then cease.

Based upon these findings the site will not need to move into the assessment monitoring program at this time and will continue with the detection monitoring program per the EPA CCR Rule (§ 257.94) on a semi-annual basis.

6.5 Proposed Actions

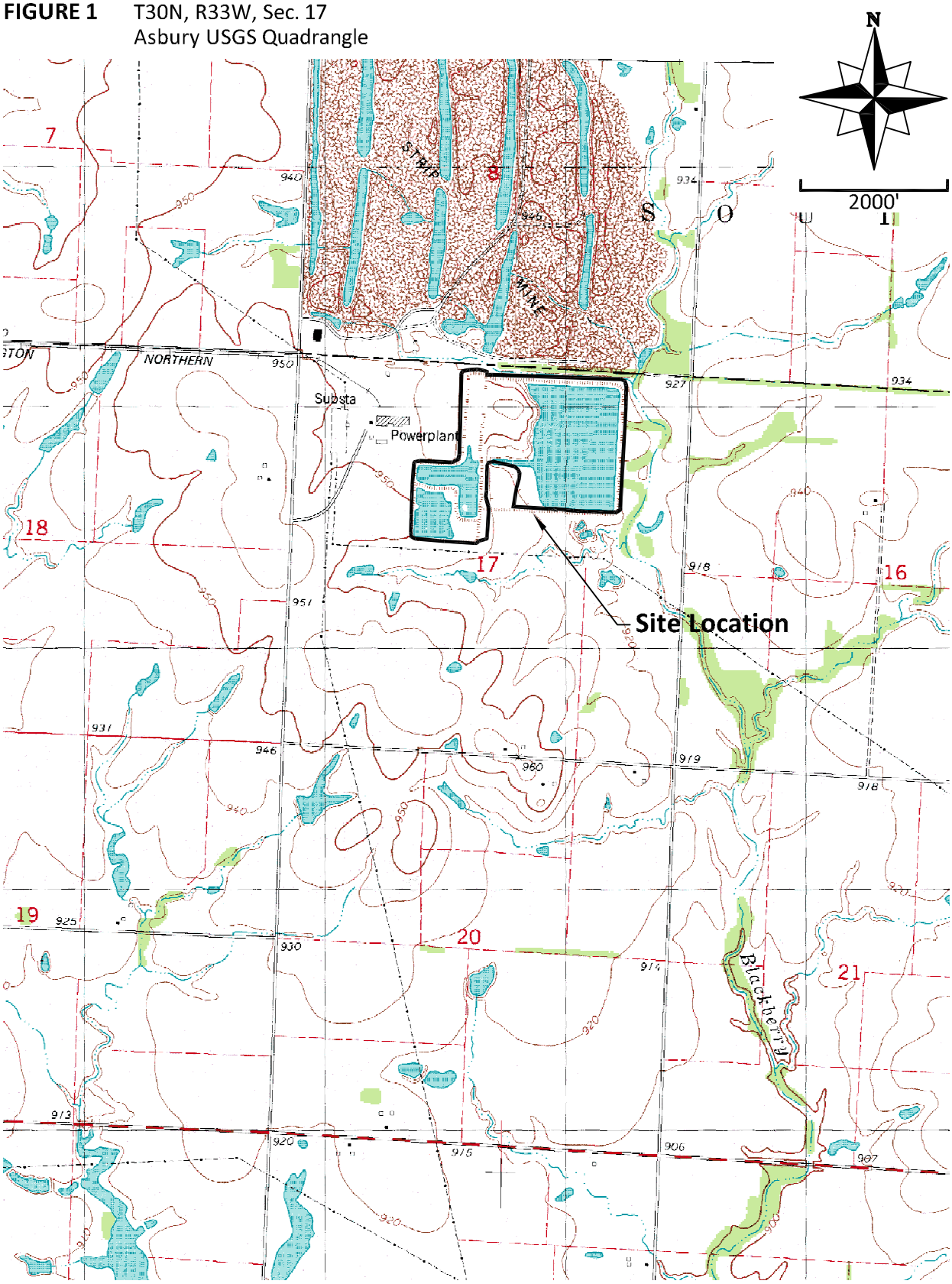
Groundwater sampling and statistical analysis will continue to be completed with interwell prediction limits per EPA's request. The results of the May 2024 sampling event confirmed the exceedance for Boron (MW-5A) and Total Dissolved Solids (MW-5A). Monitoring well MW-5AR was installed in response to the ASD. Monitoring of both MW-5A and MW-5AR will continue until the eight needed background samples are collected for MW-5AR and statistical analysis can begin. Sampling of MW-5A will then cease.

Based upon these findings the site does not need to move into the assessment monitoring program at this time and will continue with the detection monitoring program per the EPA CCR Rule (§ 257.94) on a semi-annual basis.

FIGURES

Asbury Generating Station CCR Impoundment
Groundwater Sampling Event - May 2024
Site Location Map

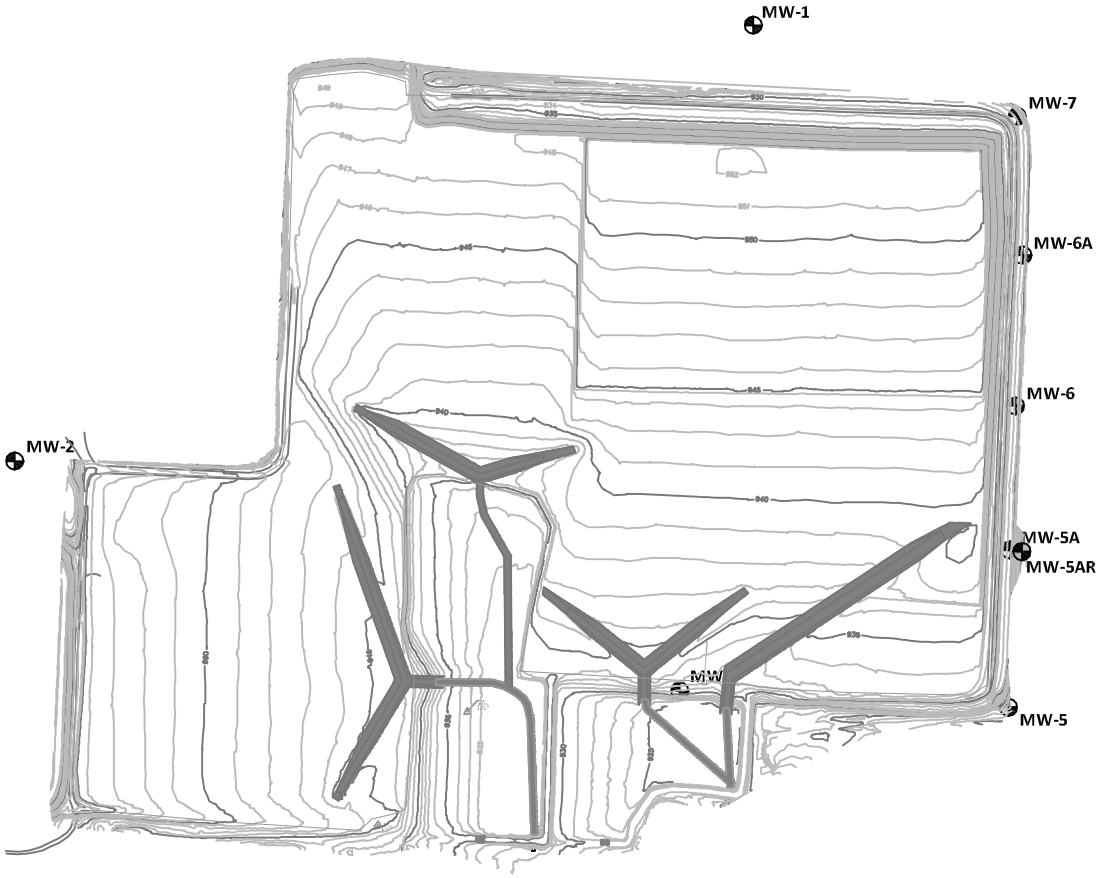
FIGURE 1 T30N, R33W, Sec. 17
Asbury USGS Quadrangle



July 2024

Asbury Generating Station CCR Impoundment
Groundwater Sampling Event - May 2024
Groundwater Monitoring System

FIGURE 2



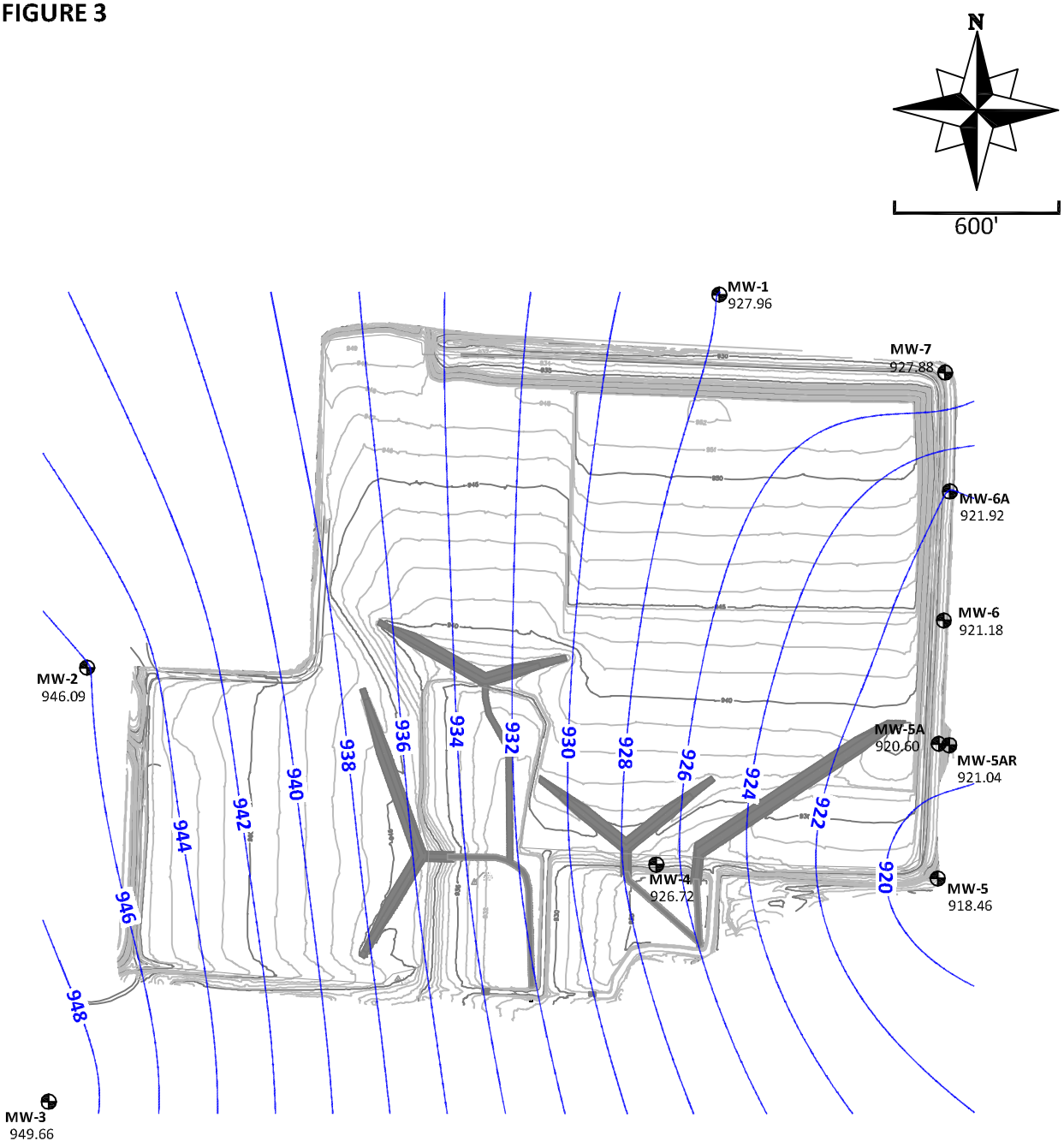
Well ID	Northing	Easting
MW-1	435789.71	2765168.83
MW-2	434428.56	2762861.43
MW-3	432844.71	2762721.27
MW-4	433709.70	2764938.79
MW-5	433659.19	2765966.39
MW-5A	434150.39	2765969.77
MW-5AR	434145.71	2766008.17
MW-6	434600.94	2765988.47
MW-6A	435071.72	2766010.58
MW-7	435505.31	2765993.01

Legend

Monitoring Well

Asbury Generating Station CCR Impoundment
Groundwater Sampling Event - May 2024
Groundwater Piezometric Surface Map

FIGURE 3



Well ID	Northing	Easting	Top Of Casing	Static Water Level (BTOC)	Static Water Level
MW-1	435789.71	2765168.83	934.50	6.54	927.96
MW-2	434428.56	2762861.43	949.50	3.41	946.09
MW-3	432844.71	2762721.27	950.16	0.50	949.66
MW-4	433709.70	2764938.76	934.29	7.57	926.72
MW-5	433659.19	2765966.39	920.20	1.74	918.46
MW-5A	434150.39	2765969.77	929.76	9.16	920.60
MW-5AR	434145.71	2766008.17	923.92	2.88	921.04
MW-6	434600.94	2765988.47	929.85	8.67	921.18
MW-6A	435071.72	2766010.58	929.61	7.69	921.92
MW-7	435505.31	2765993.01	931.14	3.26	927.88

Legend

⊕ Monitoring Well

APPENDIX 1

EPA/MDNR Correspondence

Missouri Department of NATURAL RESOURCES
dnr.mo.gov
Eric R. Greitens, Governor
Carol S. Comer, Director

NOV 02 2017

Mr. Kavan Stull, Senior Environmental Coordinator
Empire District
602 South Joplin Avenue
Joplin, MO 64802

RE: Site Characterization Workplan

Dear Mr. Stull:

The Missouri Department of Natural Resources has reviewed the document "Site Characterization Workplan" dated May 16, 2017. The site has undergone extensive characterization regarding construction of a coal combustion residual (CCR) landfill near the CCR impoundments. The department's Water Protection Program has determined, through consulting with the Missouri Geological Survey, this characterization is sufficient and may be used in whole to complete the required monitoring of the sub-surface conditions at the site. Additional submittal of site characterization is not necessary, as the previous submittal meets the requirement for special condition 19(b) of the Missouri State Operating Permit MO-0095362. The facility may proceed with the next step laid out in the permit; special condition 19(c). Enclosed is the Missouri Geological Survey concurrence.

If you were adversely affected by this decision, you may be entitled to an appeal before the Administrative Hearing Commission (AHC) pursuant to 10 CSR 20 1.020 and Section 621.250, RSMo. To appeal, you must file a petition with the AHC within 30 days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed; if it is sent by any method other than registered mail or certified mail, it will be deemed filed on the date it is received by the AHC. Contact information for the AHC is by mail at Administrative Hearing Commission, United States Post Office Building, Third Floor, 131 West High Street, P.O. Box 1557, Jefferson City, MO 65102, by phone at 573-751-2422, by fax at 573-751-5018, and by website at www.oa.mo.gov/ahc.

If you have any questions, please do not hesitate to contact Ms. Pam Hackler by mail at Department of Natural Resources, Water Protection Program, P.O. Box 176, Jefferson City, MO 65102-0176, by phone at 573-526-3386; or by email at pam.hackler@dnr.mo.gov. Thank you.

Sincerely,

WATER PROTECTION PROGRAM

Michael J. Abbott, Chief
Operating Permits Section

MJA/php

Enclosure

c: Mr. Randall Willoughby, Southwest Regional Office

Missouri Department of NATURAL RESOURCES
dnr.mo.gov
Eric R. Greitens, Governor
Carol S. Comer, Director

MEMORANDUM

SWR18011
Jasper County

DATE: October 18, 2017

TO: Pam Hackler- WPP- Industrial Wastewater Unit

FROM: Fletcher N. Bone, Geologist, Environmental Geology Section, Geological Survey Program, MGS

Fletcher N. Bone

STATE OF MISSOURI
REGISTERED GEOLOGIST
2014000148
October 18, 2017

SUBJECT: Site characterization for existing CCR impoundments
Asbury Power Plant Site Characterization Work Plan- CCR
37 21 22.66 Latitude, -94 35 4.79 Longitude,
Jasper County, Missouri

The Missouri Geological Survey (MGS) has reviewed the documents titled, 'NPDES Permit MO-0095362 Asbury Power Plant, Jasper County, Missouri, Site Characterization Work Plan', prepared by Empire District Electric Company, dated September 8, 2017 and 'Site Characterization Work Plan, Coal Combustion Residuals Impoundments, Empire Electric Facility - Permit MO-0095362, Jasper County, Missouri, Geotechnology Project No. J021738.03', prepared by Geotechnology Inc., dated May 16, 2017. The MGS offers the following comment.

General Comment:

The MGS agrees that the existing Coal Combustion Residuals (CCR) impoundments (site 1) do not need further site characterization, at this time. The site characterization performed, as described in the Detailed Site Investigation Report (DSI), dated January 21, 2015, at the proposed CCR impoundment (site 2) that is approximately 1,000 feet south of the existing CCR impoundments (site 1), coupled with the geologic and hydrologic data provided that pertains to the existing CCR impoundments (site 1) (1996 to present data), provides adequate characterization of the geology and hydrology of the site 1. The geologic and hydrologic settings of both sites are similar, with geologic boring logs and potentiometric data of both sites being compared. The hydraulic conductivity testing conducted at the proposed CCR site (site 2) has demonstrated that there is a low potential for groundwater contamination for this area.

If you are in need of further assistance from our office or have questions regarding this evaluation please feel free to contact me at (573) 368-2161.

Drew Landoll

From: Snellen, Greg <greg.snellen@dnr.mo.gov>
Sent: Tuesday, January 21, 2020 3:34 PM
To: Drew Landoll
Cc: aston.robert@epa.gov; Nagel, Chris; Snellen, Greg
Subject: RE: EPA Request for Information regarding CCR Units

Good afternoon Drew,

The Environmental Protection Agency (EPA) has been working to verify data on facility specific CCR websites required by 40 CFR 257 at the national level. EPA headquarters provided a list of inquiries to the EPA regions and requested they work with the states to answer their questions. States were given a choice as to the amount of involvement they could have with the information gathering. Missouri elected to take the lead on contacting the facilities in the state, providing the information requested by the EPA and relaying the answers back.

For your company, the EPA has questions about facilities and units which may be seeking an extension under the alternate closure provisions in 2020 and what type of extension may be requested.

They provided the following list of units:

Region	State	Part A Extension	Plant Name	Unit Name	Unit Type	Op Status	Unit Class	NOI Type	NOI Date	Alterr NOI
7	MO		Asbury	Lower Pond	Surface Impoundment	Active	Existing			
7	MO		Asbury	Upper Pond	Surface Impoundment	Active	Existing			
7	MO		Asbury	South Pond	Surface Impoundment	Active	Existing			

EPA has requested a response on extensions by February 14, 2020.

Additionally, the EPA has the following question related to groundwater monitoring:

Facility	Location	Owner	Units	Geology	Problematic Use of Intra Well Comparisons	Problematic Alternate Source Determinations	Conclusions
Asbury Power Plant	Asbury MO	Empire District Electric Company	Upper Pond-unlined South Pond-unlined Lower Pond-unlined	Surficial unit of clay, clayey sand, and silt approximately 15 to 25 feet thick underlain by Warner Sandstone approximately 25-30 feet thick in the southern portion of the site and the Riverton Shale in the northern area of the site	Analytical results indicate consistent differences in contaminant concentrations between upgradient and downgradient wells. Consequently, inter well comparisons are feasible and would be preferable in the absence of compelling reasons to use intra well analysis		While there are no boring logs in the documents to confirm that the wells are screened in the same geologic unit, consistency in the field parameters and the description of the geology suggest that the wells are screened in the sandstone. The analytical results indicate consistent differences in contaminant concentrations

Facility	Location	Owner	Units	Geology	Problematic Use of Intra Well Comparisons	Problematic Alternate Source Determinations	Conclusions
							between upgradient and downgradient wells, consequently, interwell comparisons are feasible and would be preferable in the absence of compelling reasons to use intra wells analyses

At this time, there is not a deadline for this request.

Please let the Department know if you have any questions. You can also direct inquires to Bob Aston with EPA Region 7 who is copied on this email.

Thank you

Greg Snellen
Environmental Supervisor
Waste Management Program
573-526-8779

We'd like your feedback on the service you received from the Missouri Department of Natural Resources. Please consider taking a few minutes to complete the department's Customer Satisfaction Survey at https://www.surveymonkey.com/r/MoDNRsurvey. Thank you.

From: Aston, Robert
Sent: Friday, January 10, 2020 7:48 AM
To: Nagel, Chris <Christopher.Nagel@dnr.mo.gov>; Snellen, Greg <greg.snellen@dnr.mo.gov>
Cc: Martin, Mike <Martin.Mike@epa.gov>; Kloeckner, Jane <Kloeckner.Jane@epa.gov>; Catlin, Kelley <Catlin.Kelley@epa.gov>; Werner, Leslye <Werner.Leslye@epa.gov>; Hayworth, Brad <Hayworth.Brad@epa.gov>
Subject: CCR workload

Chris and Greg,

As a follow-up to our call on Wednesday

On Monday December 2, 2019 EPA published in the Federal Register a proposed rule for the Disposal of Coal Combustion Residuals From Electric Utilities: A Holistic Approach to Closure Part A: Deadline To Initiate Closure. The major elements of this proposed rule include:

- Definition of Lined Unit (removing a clay-lined unit from the definition),
- New initiation of Closure and Cease Receipt of Waste Deadline of August 31, 2020,
- New Alternate Closure Provisions for surface impoundment: Extensions to the initiation of closure

Nationally, EPA is gathering data to determine the number of facilities and units which may be seeking an extension under the alternate closure provisions in 2020 and is tasking the regions to work with our state partners and the facilities to determine the number of such facilities and units and what type of extension may be requested. Region 7 is seeking the state's assistance in gathering this information.

To be eligible for an extension the surface impoundment needs to be:

- An existing surface impoundment (eligible inactive surface impoundments should already be closing)
- An unlined or "clay-lined" surface impoundment
- Passed all location restrictions or only failed the uppermost aquifer restriction
  - Those that failed multiple location restrictions or did not post should have ceased receipt of waste in April 2019

This proposed rule offers facilities three options with regards to an extension

1.) Three month self-implementing extension (§ 257.103(e)(1)). Under this provision the surface impoundment must cease receipt of waste no later than November 30, 2020, and the facility must document certain conditions and certify "that the CCR and/or non-CCR waste streams must continue to be managed in that CCR surface impoundment to allow the facility to complete the measures necessary to provide alternative disposal capacity, either on-site or off-site of the facility" on its publicly available website no later than August 31, 2020.

2.) Site specific alternative to initiation of closure deadline due to lack of disposal capacity (§ 257.103(f)(1)). This provision allows facilities to submit demonstrations to EPA for approval for a specific amount of time to be able to continue to use their surface impoundment while developing alternate capacity for the CCR and non-CCR waste streams. This extension allows the facility to continue to use a unit (surface impoundment) for a maximum of 5 years, until October 15, 2023. Under this extension, facilities are required to submit their demonstrations to EPA no later than June 30, 2020.

3.) Site specific alternative to initiation of closure deadline due to Permanent Cessation of Coal Fired Boiler(s) by a Date Certain (§ 257.103(f)(2)): If a facility is ceasing generation of coal fired boiler(s) by a date certain, then the facility must complete closure by October 17, 2023 for surface impoundments less than 40 acres and by October 17, 2028 for surface impoundments larger than 40 acres. The facility is required to submit a demonstration to EPA for approval to continue to use their CCR surface impoundments. Under this extension, demonstrations are required to be submitted to EPA for approval no later than May 15, 2020.

As you can see above, the deadlines for requesting extensions are approaching quickly and will become effective when the proposed rule is final. EPA is requesting assistance from the regions, states, and facilities to estimate the number and types of extensions facility owners/operators may be requesting. EPA headquarters has developed a list (attached) of facilities which may be eligible for extensions by EPA Region and State. This list was developed by examining information included on individual facility web sites which are required as part of the CCR regulations. The list of potential sites in Missouri has been attached (attached Excel file) to this email. EPA headquarters has requested that individual regions reach out to their state counterparts to identify facility contacts and reach out to those contacts to determine which facilities and units may be requesting an extension and which type of extension may be requested. EPA headquarters has requested that this information be collected by February 14, 2020.

As part of the effort to determine what type of an extension a facility may need, EPA would also like the state's assistance in obtaining input regarding an estimate of the length of the extension that may be requested by the facility owners/operators. As part of the discussions, we need an estimate regarding the length of the extension. For example, EPA needs to estimate the following:

- Facilities that will not need an extension
- Facilities that will only need till November 2020 (short term extension)
- Longer than November – need about 6 months more
- Longer than November – need about 1 year
- Longer than November – need longer than 18 months

EPA is collecting this data in order to estimate the potential workload which could be associated with reviewing the above mentioned extension requests.

In addition, EPA headquarters routinely reviews the information posted on individual facility web sites. As part of that review EPA headquarters has identified sites in each region where specific facility information which is required to be posted is either missing, incomplete or technical questions exist. As part of this review EPA has developed two lists. See attached. One list deals with compliance issues related to documents which are, or in some cases are not, posted on the specific facility websites. The second list deals with groundwater questions related to Alternate Source Demonstrations and Intrawell analyses. With regards to the list dealing with compliance issues related to documents, EPA headquarters has requested that the regions work with their state counterparts to identify the appropriate facility contact. The plan is that EPA Headquarters would take the lead in coordination with the regions and states to contact the facilities to discuss and remedy the identified issues. With regards to the second list dealing with Alternate Source Demonstrations, EPA headquarters has requested that the regions work with their state counterparts to identify the appropriate facility contacts. The regions and or the states would then take the lead to address any identified issues. No specific timeframe has been established to address the questions related to either of the above lists. Region 7 anticipates working closely with the state in addressing these issues.

It should be noted that EPA headquarters routinely reviews CCR facility websites and could identify additional questions. If that should occur Region 7 would again reach out to the states.

At your convenience I would like to follow-up with you on the above issues sometime next week to discuss Missouri's perspective and any comments you may have. If you have any questions please do not hesitate to call or email me.

Thanks

Bob Aston
USEPA Region 7
(913)551-7392

APPENDIX 2

Monitoring Well Field Inspection Sheets and Field Notes

2024

~~2023~~ Field Sampling Log

Facility: Asbury CCR (Permit #) Monitoring Well ID: MW- 2

Sample [X] Blind Duplicate [ ] Field Blank [ ].

Purge Information:

Method of Well Purge: **Peristaltic Pump with 3/8 - inch Diameter Tubing**

Actual Purge Volume Removed: mL post pump calibration.

Date / Time Initiated: 5 14 -24 @ Date / Time Completed: 5 – 14 -24

Well Purged To Dryness?: Y / (N) Gas Detected? Y / (N)

Purge Data:

Time	Purge Rate (mL/min)	Cumulative Volume (mL)	Temp. (°C)	pH (SU)	Specific Conductivity (mS/cm)	Dissolved Oxygen (mg/L)	ORP (MV)	Turbidity ( )	Other (Color, Clarity, Odor)
8:37	200		15.1	5.73	0.799	0.93	132.7	1.40	clear
:39	↓		15.4	5.72	0.799	0.47	141.9	1.45	↓
:41			15.4	5.72	0.800	0.30	144.8	1.85	
:43	↓		15.2	5.72	0.799	0.20	146.0	2.35	

Time sampled 8:45

Weather Conditions Cloudy, 60°F

Water Level Start 3.41'

Water Level Finish 7.07'

Name (MEC Field Sampler): Ryan Ortbals and Rick Elgin

Sampler Signature

Field Inspection	Good	Fair	Poor
Access	(G)	F	P
Pad Condition	(G)	F	P
Casing Condition	(G)	F	P
Locking Cap & Lock	(G)	F	P
Riser Condition	(G)	F	P

Field Inspection	Yes	No	N/A
Well ID Visible	(Y)	N	N/A
Standing Water	(Y)	N	N/A
Clear of Weeds	(Y)	N	N/A
Measuring Point	(Y)	N	N/A
Split sample with MDNR	Y	(N)	N/A
Maintenance Performed	Y	(N)	N/A
Decontamination Normal	(Y)	N	N/A
Equipment Calibration Normal	(Y)	N	N/A
Redevelopment Needed	Y	(N)	N/A
Any deviations from SAP	Y	(N)	N/A
Sediment Thickness Checked	Y	(N)	N/A

Historical Data: Average of sampling events. Note: MW-5-AR first sampled May 2023

Constituent	Units	MW- 1	MW-2	MW-3	MW-4	MW-5	MW-5A	MW-5-AR
pH	S.U.	NO TEST	5.83	5.08	6.30	6.83	6.82	
Specific Conductance	umhos/cm	GW	0.786	1.132	2.083	0.841	1.769	
Total Well Depth	ft	Level						
Average GW Depth	ft	Only	1.24	0.4	5.39	1.32	6.92	
Average GW Drop	ft							
2 System Volumes (Min Purged Amount)	mL	DON'T SAMPLE	800	800	800	800	800	

2024

~~2023~~ Field Sampling Log

Facility: Asbury CCR (Permit #) Monitoring Well ID: MW- 3

Sample [X] Blind Duplicate [ ] Field Blank [ ]

Purge Information:

Method of Well Purge: **Peristaltic Pump with 3/8 - inch Diameter Tubing**

Actual Purge Volume Removed: mL post pump calibration.

Date / Time Initiated: 5 – 14 -24 @ Date / Time Completed: 5 – 14 -24

Well Purged To Dryness?: Y / N Gas Detected? Y / N

Purge Data:

Time	Purge Rate (mL/min)	Cumulative Volume (ml)	Temp. (°C)	pH (SU)	Specific Conductivity (mS/cm)	Dissolved Oxygen (mg/L)	ORP (MV)	Turbidity ( )	Other (Color, Clarity, Odor)
2:09	200		16.3	5.77	1.456	1.61	41.5	118.6	Light cloudy
0:11	↓		16.7	5.77	1.451	0.67	36.3	208.64	
:13			16.3	5.77	1.449	0.44	36.0	366.87	
:15			16.1	5.77	1.448	0.33	34.9	98.80	↓

Time sampled 2:15

Weather Conditions Partly Cloudy, 70°F

Water Level Start 0.51'

Water Level Finish 0.61'

Name (MEC Field Sampler): Ryan Ortbals and Rick Elgin

Sampler Signature

Field Inspection	Good	Fair	Poor
Access	G	F	P
Pad Condition	G	F	P
Casing Condition	G	F	P
Locking Cap & Lock	G	F	P
Riser Condition	G	F	P

Field Inspection	Yes	No	N/A
Well ID Visible	Y	N	N/A
Standing Water	N	N	N/A
Clear of Weeds	Y	N	N/A
Measuring Point	Y	N	N/A
Split sample with MDNR	Y	N	N/A
Maintenance Performed	Y	N	N/A
Decontamination Normal	Y	N	N/A
Equipment Calibration Normal	Y	N	N/A
Redevelopment Needed	Y	N	N/A
Any deviations from SAP	Y	N	N/A
Sediment Thickness Checked	Y	N	N/A

Historical Data: Average of sampling events

Constituent	Units	MW- 6	MW- 6A	MW-7					
pH	S.U.	6.72	6.87	6.12					
Specific Conductance	umhos/cm	1.900	1.601	2.699					
Total Well Depth	ft								
Average GW Depth	ft	7.86	7.28	3.04					
Average GW Drop	ft								
2 System Volumes (Min Purged Amount)	mL	800	800	800					

2024

~~2023~~ Field Sampling Log

Facility: Asbury CCR (Permit #)

Monitoring Well ID: MW- 4

Sample [X] Blind Duplicate [ ] Field Blank [ ].

Purge Information:

Method of Well Purge: **Peristaltic Pump with 3/8 - inch Diameter Tubing**

Actual Purge Volume Removed: mL post pump calibration.

Date / Time Initiated: 5 14 -24 @

Date / Time Completed: 5 – 14 -24

Well Purged To Dryness?: Y / (N)

Gas Detected? Y / (N)

Purge Data:

Time	Purge Rate (mL/min)	Cumulative Volume (mL)	Temp. (°C)	pH (SU)	Specific Conductivity (mS/cm)	Dissolved Oxygen (mg/L)	ORP (MV)	Turbidity ( )	Other (Color, Clarity, Odor)
9:16	200		15.9	7.00	1.958	4.73	101.6	9.27	
:18	↓		15.9	7.00	1.961	4.52	99.7	8.36	
:20			16.0	7.00	1.961	4.41	95.6	8.39	
:22	↓		15.9	7.00	1.962	4.34	93.0	7.80	

Time sampled 9:25

Weather Conditions Cloudy, 80°F

Water Level Start 7.57'

Water Level Finish 13.59'

Name (MEC Field Sampler): Ryan Ortbals and Rick Elgin

Sampler Signature

Field Inspection	Good	Fair	Poor
Access	G	F	(P)
Pad Condition	(G)	F	P
Casing Condition	(G)	F	P
Locking Cap & Lock	(G)	F	P
Riser Condition	(G)	F	P

Field Inspection	Yes	No	N/A
Well ID Visible	(Y)	N	N/A
Standing Water	Y	(N)	N/A
Clear of Weeds	Y	(N)	N/A
Measuring Point	(Y)	N	N/A
Split sample with MDNR	Y	(N)	N/A
Maintenance Performed	Y	(N)	N/A
Decontamination Normal	(Y)	N	N/A
Equipment Calibration Normal	(Y)	N	N/A
Redevelopment Needed	Y	(N)	N/A
Any deviations from SAP	Y	(N)	N/A
Sediment Thickness Checked	Y	(N)	N/A

Historical Data: Average of sampling events. Note: MW-5-AR first sampled May 2023

Constituent	Units	MW- 1	MW-2	MW-3	MW-4	MW-5	MW-5A	MW-5-AR
pH	S.U.	NO TEST	5.83	5.08	6.30	6.83	6.82	
Specific Conductance	umhos/cm	GW	0.786	1.132	2.083	0.841	1.769	
Total Well Depth	ft	Level						
Average GW Depth	ft	Only	1.24	0.4	5.39	1.32	6.92	
Average GW Drop	ft							
2 System Volumes (Min Purged Amount)	mL	DON'T SAMPLE	800	800	800	800	800	

2024

~~2023~~ Field Sampling Log

Facility: Asbury CCR (Permit #) Monitoring Well ID: MW- 5

Sample [X] Blind Duplicate [X] Field Blank [ ].

Purge Information:

Method of Well Purge: **Peristaltic Pump with 3/8 - inch Diameter Tubing**

Actual Purge Volume Removed: mL post pump calibration.

Date / Time Initiated: 5 14 -24 @ Date / Time Completed: 5 – 14 -24

Well Purged To Dryness?: Y / N Gas Detected? Y / N

Purge Data:

Time	Purge Rate (mL/min)	Cumulative Volume (mL)	Temp. (°C)	pH (SU)	Specific Conductivity (mS/cm)	Dissolved Oxygen (mg/L)	ORP (MV)	Turbidity ( )	Other (Color, Clarity, Odor)
9:57	200		16.0	7.20	1.062	1.23	87.9	7.29	clear
:59	↓		15.7	7.19	1.060	0.70	85.5	5.44	↓
10:01			16.4	7.18	1.052	0.43	80.0	7.37	
:03			16.0	7.17	1.060	0.32	75.6	9.51	

Time sampled 10:05 / 10:15 Duplicate

Weather Conditions Cloudy, 65°F

Water Level Start 10.74'

Water Level Finish 11.97'

Name (MEC Field Sampler): Ryan Ortbals and Rick Elgin

Sampler Signature

Field Inspection	Good	Fair	Poor
Access	G	F	P
Pad Condition	G	F	P
Casing Condition	G	F	P
Locking Cap & Lock	G	F	P
Riser Condition	G	F	P

Field Inspection	Yes	No	N/A
Well ID Visible	Y	N	N/A
Standing Water	Y	N	N/A
Clear of Weeds	Y	N	N/A
Measuring Point	Y	N	N/A
Split sample with MDNR	Y	N	N/A
Maintenance Performed	Y	N	N/A
Decontamination Normal	Y	N	N/A
Equipment Calibration Normal	Y	N	N/A
Redevelopment Needed	Y	N	N/A
Any deviations from SAP	Y	N	N/A
Sediment Thickness Checked	Y	N	N/A

Historical Data: Average of sampling events. Note: MW-5-AR first sampled May 2023

Constituent	Units	MW- 1	MW-2	MW-3	MW-4	MW-5	MW-5A	MW-5-AR
pH	S.U.	NO TEST	5.83	5.08	6.30	6.83	6.82	
Specific Conductance	umhos/cm	GW	0.786	1.132	2.083	0.841	1.769	
Total Well Depth	ft	Level						
Average GW Depth	ft	Only	1.24	0.4	5.39	1.32	6.92	
Average GW Drop	ft							
2 System Volumes (Min Purged Amount)	mL	DON'T SAMPLE	800	800	800	800	800	

2024

~~2023~~ Field Sampling Log

Facility: Asbury CCR (Permit #)

Monitoring Well ID: MW- 5A

Sample [X] Blind Duplicate [ ] Field Blank [ ].

Purge Information:

Method of Well Purge: **Peristaltic Pump with 3/8 - inch Diameter Tubing**

Actual Purge Volume Removed: mL post pump calibration.

Date / Time Initiated: 5 14 -24 @

Date / Time Completed: 5 – -24

Well Purged To Dryness?: Y / (N)

Gas Detected? Y / (N)

Purge Data:

Time	Purge Rate (mL/min)	Cumulative Volume (mL)	Temp. (°C)	pH (SU)	Specific Conductivity (mS/cm)	Dissolved Oxygen (mg/L)	ORP (MV)	Turbidity ( )	Other (Color, Clarity, Odor)
10:55	200		16.2	6.78	4.629	1.70	84.2	16.91	Clear
:57	↓		16.1	6.77	4.637	0.96	84.9	8.63	↓
:59			16.1	6.77	4.633	0.45	83.0	11.18	
11:01			16.1	6.78	4.635	0.30	80.2	12.06	

Time sampled 11:05

Weather Conditions Cloudy, 65°F

Water Level Start 9.16'

Water Level Finish 14.59'

Name (MEC Field Sampler): Ryan Ortbals and Rick Elgin

Sampler Signature

Field Inspection	Good	Fair	Poor
Access	G	(F)	P
Pad Condition	(G)	F	P
Casing Condition	(G)	F	P
Locking Cap & Lock	(G)	F	P
Riser Condition	(G)	F	P

Field Inspection	Yes	No	N/A
Well ID Visible	(Y)	N	N/A
Standing Water	(N)	N	N/A
Clear of Weeds	Y	(N)	N/A
Measuring Point	(Y)	N	N/A
Split sample with MDNR	Y	(N)	N/A
Maintenance Performed	Y	(N)	N/A
Decontamination Normal	(Y)	N	N/A
Equipment Calibration Normal	(Y)	N	N/A
Redevelopment Needed	Y	(N)	N/A
Any deviations from SAP	Y	(N)	N/A
Sediment Thickness Checked	Y	(N)	N/A

Historical Data: Average of sampling events. Note: MW-5-AR first sampled May 2023

Constituent	Units	MW- 1	MW-2	MW-3	MW-4	MW-5	MW-5A	MW-5-AR
pH	S.U.	NO TEST	5.83	5.08	6.30	6.83	6.82	
Specific Conductance	umhos/cm	GW	0.786	1.132	2.083	0.841	1.769	
Total Well Depth	ft	Level						
Average GW Depth	ft	Only	1.24	0.4	5.39	1.32	6.92	
Average GW Drop	ft							
2 System Volumes (Min Purged Amount)	mL	DON'T SAMPLE	800	800	800	800	800	

2024

~~2023~~ Field Sampling Log

Facility: Asbury CCR (Permit #) Monitoring Well ID: MW- 5AR

Sample [X] Blind Duplicate [ ] Field Blank [ ].

Purge Information:

Method of Well Purge: **Peristaltic Pump with 3/8 - inch Diameter Tubing**

Actual Purge Volume Removed: mL post pump calibration.

Date / Time Initiated: 5 14 -24 @ Date / Time Completed: 5 – 14 -24

Well Purged To Dryness?: Y / (N) Gas Detected? Y / (N)

Purge Data:

Time	Purge Rate (mL/min)	Cumulative Volume (mL)	Temp. (°C)	pH (SU)	Specific Conductivity (mS/cm)	Dissolved Oxygen (mg/L)	ORP (MV)	Turbidity ( )	Other (Color, Clarity, Odor)
11:27	200		16.6	7.08	1.575	2.04	126.2	29.18	
:29	↓		16.4	7.07	1.551	1.11	130.3	34.97	
:31			16.5	7.08	1.547	0.77	123.1	43.37	
:33			16.6	7.08	1.550	0.60	117.4	83.03	

Time sampled 11:35

Weather Conditions Cloudy, 65°F

Water Level Start 2.88'

Water Level Finish 12.23'

Name (MEC Field Sampler): Ryan Ortbals and Rick Elgin

Sampler Signature Ryan

Field Inspection	Good	Fair	Poor
Access	G	(F)	P
Pad Condition	(G)	F	P
Casing Condition	(G)	F	P
Locking Cap & Lock	(G)	F	P
Riser Condition	(G)	F	P

Field Inspection	Yes	No	N/A
Well ID Visible	(Y)	N	N/A
Standing Water	(Y)	N	N/A
Clear of Weeds	Y	(N)	N/A
Measuring Point	(Y)	N	N/A
Split sample with MDNR	Y	(N)	N/A
Maintenance Performed	Y	(N)	N/A
Decontamination Normal	(Y)	N	N/A
Equipment Calibration Normal	(Y)	N	N/A
Redevelopment Needed	Y	(N)	N/A
Any deviations from SAP	Y	(N)	N/A
Sediment Thickness Checked	Y	(N)	N/A

Historical Data: Average of sampling events. Note: MW-5-AR first sampled May 2023

Constituent	Units	MW- 1	MW-2	MW-3	MW-4	MW-5	MW-5A	MW-5-AR
pH	S.U.	NO TEST	5.83	5.08	6.30	6.83	6.82	
Specific Conductance	umhos/cm	GW	0.786	1.132	2.083	0.841	1.769	
Total Well Depth	ft	Level						
Average GW Depth	ft	Only	1.24	0.4	5.39	1.32	6.92	
Average GW Drop	ft							
2 System Volumes (Min Purged Amount)	mL	DON'T SAMPLE	800	800	800	800	800	

2024

~~2023~~ Field Sampling Log

Facility: Asbury CCR (Permit #)

Monitoring Well ID: MW- ~~5~~ 6

Sample [X] Blind Duplicate [ ] Field Blank [X]

Purge Information:

Method of Well Purge: **Peristaltic Pump with 3/8 - inch Diameter Tubing**

Actual Purge Volume Removed: mL post pump calibration.

Date / Time Initiated: 5 14 -24 @

Date / Time Completed: 5 – 14 -24

Well Purged To Dryness?: Y / N

Gas Detected? Y / N

Purge Data:

Time	Purge Rate (mL/min)	Cumulative Volume (mL)	Temp. (°C)	pH (SU)	Specific Conductivity (mS/cm)	Dissolved Oxygen (mg/L)	ORP (MV)	Turbidity ( )	Other (Color, Clarity, Odor)
12:10	200		16.2	6.92	2.706	1.62	106.1	26.15	Clear
:12	↓		15.8	6.92	2.700	1.01	102.4	52.44	↓
:14			15.8	6.93	2.698	0.55	96.7	87.73	
:16	✓		15.8	6.93	2.695	0.36	91.6	114.46	

Time sampled 12:20 / 12:30 Field Blank

Weather Conditions Cloudy, 65°F

Water Level Start 8.67'

Water Level Finish 19.22'

Name (MEC Field Sampler): Ryan Ortbals and Rick Elgin

Sampler Signature

Field Inspection	Good	Fair	Poor
Access	G	F	P
Pad Condition	G	F	P
Casing Condition	G	F	P
Locking Cap & Lock	G	F	P
Riser Condition	G	F	P

Field Inspection	Yes	No	N/A
Well ID Visible	Y	N	N/A
Standing Water	Y	N	N/A
Clear of Weeds	Y	N	N/A
Measuring Point	Y	N	N/A
Split sample with MDNR	Y	N	N/A
Maintenance Performed	Y	N	N/A
Decontamination Normal	Y	N	N/A
Equipment Calibration Normal	Y	N	N/A
Redevelopment Needed	Y	N	N/A
Any deviations from SAP	Y	N	N/A
Sediment Thickness Checked	Y	N	N/A

Historical Data: Average of sampling events. Note: MW-5-AR first sampled May 2023

Constituent	Units	MW- 1	MW-2	MW-3	MW-4	MW-5	MW-5A	MW-5-AR
pH	S.U.	NO TEST	5.83	5.08	6.30	6.83	6.82	
Specific Conductance	umhos/cm	GW	0.786	1.132	2.083	0.841	1.769	
Total Well Depth	ft	Level						
Average GW Depth	ft	Only	1.24	0.4	5.39	1.32	6.92	
Average GW Drop	ft							
2 System Volumes (Min Purged Amount)	mL	DON'T SAMPLE	800	800	800	800	800	

2024

~~2023~~ Field Sampling Log

Facility: Asbury CCR (Permit #) Monitoring Well ID: MW- 6A

Sample [X] Blind Duplicate [ ] Field Blank [ ].

Purge Information:

Method of Well Purge: **Peristaltic Pump with 3/8 - inch Diameter Tubing**

Actual Purge Volume Removed: mL post pump calibration.

Date / Time Initiated: 5 – 14 -24 @ Date / Time Completed: 5 – 14 -24

Well Purged To Dryness?: Y / N Gas Detected? Y / N

Purge Data:

Time	Purge Rate (mL/min)	Cumulative Volume (ml)	Temp. (°C)	pH (SU)	Specific Conductivity (mS/cm)	Dissolved Oxygen (mg/L)	ORP (MV)	Turbidity ( )	Other (Color, Clarity, Odor)
12:46	200		16.1	6.49	2.354	3.53	137.8	40.00	Clear
0 :48	↓		15.9	6.49	2.349	3.24	140.1	34.36	↓
:50			15.7	6.50	2.348	3.21	139.9	28.06	
:52	↓		15.5	6.51	2.346	3.17	138.4	29.57	↓

Time sampled 12:55

Weather Conditions Cloudy, 65°F

Water Level Start 7.69'

Water Level Finish 17.94'

Name (MEC Field Sampler): Ryan Ortbals and Rick Elgin

Sampler Signature

Field Inspection	Good	Fair	Poor
Access	G	F	P
Pad Condition	G	F	P
Casing Condition	G	F	P
Locking Cap & Lock	G	F	P
Riser Condition	G	F	P

Field Inspection	Yes	No	N/A
Well ID Visible	Y	N	N/A
Standing Water	Y	N	N/A
Clear of Weeds	Y	N	N/A
Measuring Point	Y	N	N/A
Split sample with MDNR	Y	N	N/A
Maintenance Performed	Y	N	N/A
Decontamination Normal	Y	N	N/A
Equipment Calibration Normal	Y	N	N/A
Redevelopment Needed	Y	N	N/A
Any deviations from SAP	Y	N	N/A
Sediment Thickness Checked	Y	N	N/A

Historical Data: Average of sampling events

Constituent	Units	MW- 6	MW- 6A	MW-7					
pH	S.U.	6.72	6.87	6.12					
Specific Conductance	umhos/cm	1.900	1.601	2.699					
Total Well Depth	ft								
Average GW Depth	ft	7.86	7.28	3.04					
Average GW Drop	ft								
2 System Volumes (Min Purged Amount)	mL	800	800	800					

2024

2023 Field Sampling Log

Facility: Asbury CCR (Permit #) Monitoring Well ID: MW-7

Sample [X] Blind Duplicate [ ] Field Blank [ ].

Purge Information:

Method of Well Purge: **Peristaltic Pump with 3/8 - inch Diameter Tubing**

Actual Purge Volume Removed: mL post pump calibration.

Date / Time Initiated: 5 – 14 -24 @ Date / Time Completed: 5 – 14 -24

Well Purged To Dryness?: Y / N Gas Detected? Y / N

Purge Data:

Time	Purge Rate (mL/min)	Cumulative Volume (ml)	Temp. (°C)	pH (SU)	Specific Conductivity (mS/cm)	Dissolved Oxygen (mg/L)	ORP (MV)	Turbidity ( )	Other (Color, Clarity, Odor)
1:27	200		16.4	6.47	3.424	4.62	129.4	6.23	clear
0:29			16.0	6.47	3.425	4.29	127.2	7.22	
:31			15.9	6.47	3.419	4.10	123.2	7.02	
:33			19.9	6.47	3.417	4.05	121.0	6.53	

Time sampled 1:35

Weather Conditions Cloudy, 65°F

Water Level Start 3.96'

Water Level Finish 3.95

Name (MEC Field Sampler): Ryan Ortbals and Rick Elgin

Sampler Signature

Field Inspection	Good	Fair	Poor
Access	G	F	P
Pad Condition	G	F	P
Casing Condition	G	F	P
Locking Cap & Lock	G	F	P
Riser Condition	G	F	P

Field Inspection	Yes	No	N/A
Well ID Visible	Y	N	N/A
Standing Water	Y	N	N/A
Clear of Weeds	Y	N	N/A
Measuring Point	Y	N	N/A
Split sample with MDNR	Y	N	N/A
Maintenance Performed	Y	N	N/A
Decontamination Normal	Y	N	N/A
Equipment Calibration Normal	Y	N	N/A
Redevelopment Needed	Y	N	N/A
Any deviations from SAP	Y	N	N/A
Sediment Thickness Checked	Y	N	N/A

Historical Data: Average of sampling events

Constituent	Units	MW- 6	MW- 6A	MW-7					
pH	S.U.	6.72	6.87	6.12					
Specific Conductance	umhos/cm	1.900	1.601	2.699					
Total Well Depth	ft								
Average GW Depth	ft	7.86	7.28	3.04					
Average GW Drop	ft								
2 System Volumes (Min Purged Amount)	mL	800	800	800					

APPENDIX 3

Analytical Results

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Mr. Rick Elgin
Midwest Environmental Consultants
2009 East McCarty Street
Suite 2
Jefferson City, Missouri 65101

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JOB DESCRIPTION

Asbury Pond CCR

JOB NUMBER

180-174054-2

Eurofins Pittsburgh
301 Alpha Drive
RIDC Park
Pittsburgh PA 15238

See page two for job notes and contact information.

Job Notes

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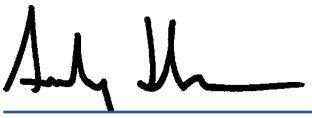
PA Lab ID: 02-00416

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Pittsburgh Project Manager.

Authorization



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Authorized for release by
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Job ID: 180-174054-2 — Eurofins Pittsburgh

Job Narrative
180-174054-2

Receipt
The samples were received on 5/15/2024 9:35 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 5 coolers at receipt time were 1.5º C, 1.6º C, 2.0º C, 4.3º C and 5.5º C.

GC Semi VOA
Method 9056A: The following samples were diluted due to the nature of the sample matrix: MW-2 (180-174054-1), MW-3 (180-174054-2), MW-4 (180-174054-3), MW-5 (180-174054-4), MW-5A (180-174054-5), MW-5AR (180-174054-6), MW-6 (180-174054-7), MW-6A (180-174054-8), (180-174054-K-1 MS), (180-174054-K-1 MSD). MW-7 (180-174054-9), (180-174063-D-7), (180-174063-D-7 MS) and (180-174063-D-7 MSD). Elevated reporting limits (RLs) are provided.

Method 9056A: The following samples reported chloride and fluoride above the reporting limit (RL). These samples were re-analyzed and the results were confirmed. FIELD BLANK (180-174054-11)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

RAD
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Metals
Method 6020B: The following samples were diluted to bring the concentration of target analytes within the calibration range: MW-5A (180-174054-5) and MW-6A (180-174054-8). Elevated reporting limits (RLs) are provided.

Method 6020B: The following sample was analyzed at a dilution to bring the concentration of boron to within the instrument's linear range: MW-5A (180-174054-5). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Field Service / Mobile Lab
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Definitions/Glossary

Client: Midwest Environmental Consultants
Project/Site: Asbury Pond CCR

Job ID: 180-174054-2

Qualifiers

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Rad

Qualifier	Qualifier Description
U	Result is less than the sample detection limit.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Accreditation/Certification Summary

Client: Midwest Environmental Consultants
Job ID: 180-174054-2
Project/Site: Asbury Pond CCR

Laboratory: Eurofins Pittsburgh

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arkansas DEQ	State	19-033-0	06-27-24
California	State	2891	04-30-24 *
Connecticut	State	PH-0688	09-30-24
Florida	NELAP	E871008	06-30-24
Georgia	State	PA 02-00416	04-30-25
Illinois	NELAP	004375	07-31-25
Kansas	NELAP	E-10350	01-31-25
Kentucky (UST)	State	162013	04-30-23 *
Kentucky (WW)	State	KY98043	12-31-24
Louisiana	NELAP	04041	06-30-22 *
Louisiana (All)	NELAP	04041	06-30-24
Maine	State	PA00164	03-06-26
Minnesota	NELAP	042-999-482	12-31-24
New Hampshire	NELAP	2030	04-04-24 *
New Jersey	NELAP	PA005	06-30-24
New York	NELAP	11182	04-01-25
North Carolina (WW/SW)	State	434	12-31-24
North Dakota	State	R-227	04-30-24 *
Oregon	NELAP	PA-2151	02-06-25
Pennsylvania	NELAP	02-00416	04-30-25
Rhode Island	State	LAO00362	01-01-25
South Carolina	State	89014	04-30-25
Texas	NELAP	T104704528	03-31-25
US Fish & Wildlife	US Federal Programs	058448	03-31-24 *
USDA	US Federal Programs	P330-16-00211	04-11-26
Utah	NELAP	PA001462019-8	05-31-24
Virginia	NELAP	10043	07-14-24
West Virginia DEP	State	142	01-31-25
Wisconsin	State	998027800	08-31-24

Laboratory: Eurofins St. Louis

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-001	05-06-25
ANAB	Dept. of Defense ELAP	L2305	04-06-25
ANAB	Dept. of Energy	L2305.01	04-08-25
ANAB	ISO/IEC 17025	L2305	04-06-25
Arizona	State	AZ0813	12-08-24
California	Los Angeles County Sanitation Districts	10259	06-30-22 *
California	State	2886	06-30-24
Connecticut	State	PH-0241	03-31-25
Florida	NELAP	E87689	06-30-24
HI - RadChem Recognition	State	n/a	06-30-24
Illinois	NELAP	200023	11-30-24
Iowa	State	373	12-01-24
Kansas	NELAP	E-10236	10-31-24
Kentucky (DW)	State	KY90125	12-31-24
Kentucky (WW)	State	KY90125 (Permit KY0004049)	12-31-24

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Accreditation/Certification Summary

Client: Midwest Environmental Consultants
Job ID: 180-174054-2
Project/Site: Asbury Pond CCR

Laboratory: Eurofins St. Louis (Continued)

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Louisiana	NELAP	04080	06-30-22 *
Louisiana (All)	NELAP	04080	06-30-24
Louisiana (DW)	State	LA011	12-31-24
Maryland	State	310	09-30-24
Massachusetts	State	M-MO054	06-30-24
MI - RadChem Recognition	State	9005	06-30-24
Missouri	State	780	06-30-25
Nevada	State	MO00054	07-31-24
New Jersey	NELAP	MO002	06-30-24
New Mexico	State	MO00054	06-30-24
New York	NELAP	11616	03-31-25
North Carolina (DW)	State	29700	07-31-24
North Dakota	State	R-207	06-30-24
Oklahoma	NELAP	9997	08-31-24
Oregon	NELAP	4157	09-01-24
Pennsylvania	NELAP	68-00540	02-28-25
South Carolina	State	85002001	06-30-24
Texas	NELAP	T104704193	07-31-24
US Fish & Wildlife	US Federal Programs	058448	07-31-24
USDA	US Federal Programs	P330-17-00028	05-18-26
Utah	NELAP	MO00054	07-31-24
Virginia	NELAP	460230	06-14-25
Washington	State	C592	08-30-24
West Virginia DEP	State	381	10-31-24

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Sample Summary

Client: Midwest Environmental Consultants
Project/Site: Asbury Pond CCR

Job ID: 180-174054-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
180-174054-1	MW-2	Water	05/14/24 08:45	05/15/24 09:35
180-174054-2	MW-3	Water	05/14/24 02:15	05/15/24 09:35
180-174054-3	MW-4	Water	05/14/24 09:25	05/15/24 09:35
180-174054-4	MW-5	Water	05/14/24 10:05	05/15/24 09:35
180-174054-5	MW-5A	Water	05/14/24 11:05	05/15/24 09:35
180-174054-6	MW-5AR	Water	05/14/24 11:35	05/15/24 09:35
180-174054-7	MW-6	Water	05/14/24 12:20	05/15/24 09:35
180-174054-8	MW-6A	Water	05/14/24 12:55	05/15/24 09:35
180-174054-9	MW-7	Water	05/14/24 01:35	05/15/24 09:35
180-174054-10	DUPLICATE (AT MW-5)	Water	05/14/24 10:15	05/15/24 09:35
180-174054-11	FIELD BLANK	Water	05/14/24 12:30	05/15/24 09:35

Method Summary

Client: Midwest Environmental Consultants
Job ID: 180-174054-2
Project/Site: Asbury Pond CCR

Method	Method Description	Protocol	Laboratory
EPA 9056A	Anions, Ion Chromatography	SW846	EET PIT
EPA 6020B	Metals (ICP/MS)	SW846	EET PIT
EPA 7470A	Mercury (CVAA)	SW846	EET PIT
SM 2540C	Solids, Total Dissolved (TDS)	SM	EET PIT
9315	Radium-226 (GFPC)	SW846	EET SL
9320	Radium-228 (GFPC)	SW846	EET SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	EET SL
Field Sampling	Field Sampling	EPA	EET PIT
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	EET PIT
7470A	Preparation, Mercury	SW846	EET PIT
PrecSep_0	Preparation, Precipitate Separation	None	EET SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	EET SL

Protocol References:

EPA = US Environmental Protection Agency
None = None
SM = "Standard Methods For The Examination Of Water And Wastewater"
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.
TAL-STL = TestAmerica Laboratories, St. Louis, Facility Standard Operating Procedure.

Laboratory References:

EET PIT = Eurofins Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058
EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Client Sample Results

Client: Midwest Environmental Consultants
Job ID: 180-174054-2
Project/Site: Asbury Pond CCR

Client Sample ID: MW-2
Lab Sample ID: 180-174054-1

Date Collected: 05/14/24 08:45
Matrix: Water

Date Received: 05/15/24 09:35

Method: SW846 EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	110		1.0	0.71	mg/L			05/19/24 13:43	1
Fluoride	0.15		0.10	0.026	mg/L			05/19/24 13:43	1
Sulfate	110		1.0	0.76	mg/L			05/19/24 13:43	1

Method: SW846 EPA 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	94		80	60	ug/L		05/17/24 07:45	05/21/24 14:21	1
Calcium	28000		500	130	ug/L		05/17/24 07:45	05/21/24 14:21	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	410		10	10	mg/L			05/17/24 18:22	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	NONE	Unit	D	Prepared	Analyzed	Dil Fac
pH	5.72				SU			05/14/24 09:45	1

Client Sample Results

Client: Midwest Environmental Consultants
Job ID: 180-174054-2
Project/Site: Asbury Pond CCR

Client Sample ID: MW-3
Lab Sample ID: 180-174054-2
Date Collected: 05/14/24 02:15
Matrix: Water
Date Received: 05/15/24 09:35

Method: SW846 EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	53		1.0	0.71	mg/L			05/19/24 14:42	1
Fluoride	0.14		0.10	0.026	mg/L			05/19/24 14:42	1
Sulfate	490		5.0	3.8	mg/L			05/19/24 14:57	5

Method: SW846 EPA 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	62	J	80	60	ug/L		05/17/24 07:45	05/21/24 14:30	1
Calcium	100000		500	130	ug/L		05/17/24 07:45	05/21/24 14:30	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	940		10	10	mg/L			05/17/24 18:22	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	NONE	Unit	D	Prepared	Analyzed	Dil Fac
pH	5.77				SU			05/14/24 03:15	1

Client Sample Results

Client: Midwest Environmental Consultants
Job ID: 180-174054-2
Project/Site: Asbury Pond CCR

Client Sample ID: MW-4
Lab Sample ID: 180-174054-3

Date Collected: 05/14/24 09:25
Matrix: Water
Date Received: 05/15/24 09:35

Method: SW846 EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	19		1.0	0.71	mg/L			05/19/24 15:12	1
Fluoride	0.11		0.10	0.026	mg/L			05/19/24 15:12	1
Sulfate	560		10	7.6	mg/L			05/19/24 15:27	10

Method: SW846 EPA 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		80	60	ug/L		05/17/24 07:45	05/21/24 14:33	1
Calcium	220000		500	130	ug/L		05/17/24 07:45	05/21/24 14:33	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	1300		10	10	mg/L			05/17/24 18:22	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	NONE	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.00				SU			05/14/24 10:25	1

Client: Midwest Environmental Consultants
Job ID: 180-174054-2
Project/Site: Asbury Pond CCR

Client Sample ID: MW-5
Date Collected: 05/14/24 10:05
Date Received: 05/15/24 09:35

Lab Sample ID: 180-174054-4
Matrix: Water

Method: SW846 EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	5.8		1.0	0.71	mg/L			05/19/24 16:11	1
Fluoride	0.30		0.10	0.026	mg/L			05/19/24 16:11	1
Sulfate	150		1.0	0.76	mg/L			05/19/24 16:11	1

Method: SW846 EPA 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	290		80	60	ug/L		05/17/24 07:45	05/21/24 14:35	1
Calcium	89000		500	130	ug/L		05/17/24 07:45	05/21/24 14:35	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	570		10	10	mg/L			05/17/24 18:38	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	NONE	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.17				SU			05/14/24 11:05	1

Client Sample Results

Client: Midwest Environmental Consultants
Project/Site: Asbury Pond CCR

Job ID: 180-174054-2

Client Sample ID: MW-5A

Date Collected: 05/14/24 11:05
Date Received: 05/15/24 09:35

Lab Sample ID: 180-174054-5

Matrix: Water

Method: SW846 EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	170		2.0	1.4	mg/L			05/19/24 16:41	2
Fluoride	0.21		0.20	0.052	mg/L			05/19/24 16:41	2
Sulfate	1900		20	15	mg/L			05/19/24 16:56	20

Method: SW846 EPA 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	2100		400	300	ug/L		05/17/24 07:45	05/22/24 16:55	5
Calcium	430000		500	130	ug/L		05/17/24 07:45	05/21/24 14:38	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	3200		40	40	mg/L			05/17/24 18:38	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	NONE	Unit	D	Prepared	Analyzed	Dil Fac
pH	6.78				SU			05/14/24 12:05	1

Client Sample ID: MW-5AR

Date Collected: 05/14/24 11:35
Date Received: 05/15/24 09:35

Lab Sample ID: 180-174054-6

Matrix: Water

Method: SW846 EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**7.2**		1.0	0.71	mg/L			05/19/24 17:10	1
Fluoride	**0.24**		0.10	0.026	mg/L			05/19/24 17:10	1
Sulfate	**420**		5.0	3.8	mg/L			05/19/24 17:25	5

Method: SW846 EPA 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		2.0	0.97	ug/L		05/17/24 07:45	05/21/24 14:41	1
Arsenic	**0.62**	**J**	1.0	0.56	ug/L		05/17/24 07:45	05/21/24 14:41	1
Barium	**16**		10	3.1	ug/L		05/17/24 07:45	05/21/24 14:41	1
Beryllium	ND		0.0010	0.00027	mg/L		05/17/24 07:45	05/21/24 14:41	1
Boron	**430**		80	60	ug/L		05/17/24 07:45	05/21/24 14:41	1
Cadmium	ND		1.0	0.22	ug/L		05/17/24 07:45	05/21/24 14:41	1
Calcium	**130**		0.50	0.13	mg/L		05/17/24 07:45	05/21/24 14:41	1
Chromium	ND		2.0	1.5	ug/L		05/17/24 07:45	05/21/24 14:41	1
Cobalt	ND		0.50	0.26	ug/L		05/17/24 07:45	05/21/24 14:41	1
Lead	ND		1.0	0.38	ug/L		05/17/24 07:45	05/21/24 14:41	1
Lithium	**130**		5.0	1.3	ug/L		05/17/24 07:45	05/21/24 14:41	1
Molybdenum	ND		5.0	0.61	ug/L		05/17/24 07:45	05/21/24 14:41	1
Selenium	ND		5.0	1.5	ug/L		05/17/24 07:45	05/21/24 14:41	1
Thallium	ND		1.0	0.47	ug/L		05/17/24 07:45	05/21/24 14:41	1

Method: SW846 EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00013	mg/L		05/18/24 10:45	05/20/24 12:55	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**960**		10	10	mg/L			05/17/24 18:38	1

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.718**		0.268	0.275	1.00	0.279	pCi/L	05/20/24 08:17	06/12/24 23:50	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*97.8*		*30 - 110*	*05/20/24 08:17*	*06/12/24 23:50*	*1*

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	**1.38**		0.440	0.458	1.00	0.488	pCi/L	05/20/24 08:22	06/12/24 12:36	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*97.8*		*30 - 110*	*05/20/24 08:22*	*06/12/24 12:36*	*1*
Y Carrier	*83.7*		*30 - 110*	*05/20/24 08:22*	*06/12/24 12:36*	*1*

Client Sample Results

Client: Midwest Environmental Consultants
Project/Site: Asbury Pond CCR

Job ID: 180-174054-2

Client Sample ID: MW-5AR

Date Collected: 05/14/24 11:35
Date Received: 05/15/24 09:35

Lab Sample ID: 180-174054-6

Matrix: Water

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	2.10		0.515	0.534	5.00	0.488	pCi/L		06/17/24 15:12	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	NONE	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.08				SU			05/14/24 12:35	1

Client: Midwest Environmental Consultants
Job ID: 180-174054-2
Project/Site: Asbury Pond CCR

Client Sample ID: MW-6
Date Collected: 05/14/24 12:20
Date Received: 05/15/24 09:35

Lab Sample ID: 180-174054-7
Matrix: Water

Method: SW846 EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	32		1.0	0.71	mg/L			05/19/24 17:40	1
Fluoride	0.22		0.10	0.026	mg/L			05/19/24 17:40	1
Sulfate	1100		10	7.6	mg/L			05/19/24 17:55	10

Method: SW846 EPA 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	380		80	60	ug/L		05/17/24 07:45	05/21/24 14:49	1
Calcium	270000		500	130	ug/L		05/17/24 07:45	05/21/24 14:49	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	1900		10	10	mg/L			05/17/24 18:38	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	NONE	Unit	D	Prepared	Analyzed	Dil Fac
pH	6.93				SU			05/14/24 13:20	1

Client Sample Results

Client: Midwest Environmental Consultants
Project/Site: Asbury Pond CCR

Job ID: 180-174054-2

Client Sample ID: MW-6A

Date Collected: 05/14/24 12:55
Date Received: 05/15/24 09:35

Lab Sample ID: 180-174054-8

Matrix: Water

Method: SW846 EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	63		1.0	0.71	mg/L			05/19/24 18:10	1
Fluoride	0.16		0.10	0.026	mg/L			05/19/24 18:10	1
Sulfate	950		10	7.6	mg/L			05/19/24 18:24	10

Method: SW846 EPA 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	270		80	60	ug/L		05/17/24 07:45	05/21/24 14:52	1
Calcium	180000		500	130	ug/L		05/17/24 07:45	05/21/24 14:52	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	1700		10	10	mg/L			05/17/24 18:38	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	NONE	Unit	D	Prepared	Analyzed	Dil Fac
pH	6.51				SU			05/14/24 13:55	1

Client Sample Results

Client: Midwest Environmental Consultants
Project/Site: Asbury Pond CCR

Job ID: 180-174054-2

Client Sample ID: MW-7

Date Collected: 05/14/24 01:35
Date Received: 05/15/24 09:35

Lab Sample ID: 180-174054-9

Matrix: Water

Method: SW846 EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	39		1.0	0.71	mg/L			05/20/24 17:15	1
Fluoride	0.12		0.10	0.026	mg/L			05/20/24 17:15	1
Sulfate	1800		10	7.6	mg/L			05/20/24 17:30	10

Method: SW846 EPA 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	280		80	60	ug/L		05/17/24 07:45	05/21/24 14:55	1
Calcium	490000		500	130	ug/L		05/17/24 07:45	05/21/24 14:55	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	2800		20	20	mg/L			05/17/24 18:38	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	NONE	Unit	D	Prepared	Analyzed	Dil Fac
pH	6.47				SU			05/14/24 02:35	1

Client: Midwest Environmental Consultants
Job ID: 180-174054-2
Project/Site: Asbury Pond CCR

Client Sample ID: DUPLICATE (AT MW-5)
Lab Sample ID: 180-174054-10

Date Collected: 05/14/24 10:15
Matrix: Water
Date Received: 05/15/24 09:35

Method: SW846 EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	5.8		1.0	0.71	mg/L			05/20/24 15:46	1
Fluoride	0.29		0.10	0.026	mg/L			05/20/24 15:46	1
Sulfate	150		1.0	0.76	mg/L			05/20/24 15:46	1

Method: SW846 EPA 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	300		80	60	ug/L		05/17/24 07:45	05/21/24 14:58	1
Calcium	91000		500	130	ug/L		05/17/24 07:45	05/21/24 14:58	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	580		10	10	mg/L			05/17/24 18:38	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	NONE	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.17				SU			05/14/24 11:15	1

Client: Midwest Environmental Consultants
Job ID: 180-174054-2
Project/Site: Asbury Pond CCR

Client Sample ID: FIELD BLANK
Lab Sample ID: 180-174054-11
Date Collected: 05/14/24 12:30
Matrix: Water
Date Received: 05/15/24 09:35

Method: SW846 EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**23**		1.0	0.71	mg/L			05/20/24 18:44	1
Fluoride	**0.73**		0.10	0.026	mg/L			05/20/24 18:44	1
Sulfate	ND		1.0	0.76	mg/L			05/20/24 18:44	1

Method: SW846 EPA 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		80	60	ug/L		05/17/24 07:45	05/21/24 15:00	1
Calcium	**22000**		500	130	ug/L		05/17/24 07:45	05/21/24 15:00	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**270**		10	10	mg/L			05/17/24 18:38	1

Eurofins Pittsburgh
301 Alpha Drive RIDC Park
Pittsburgh, PA 15238
Phone (412) 963-7058 Phone (412) 963-2468

Chain of Custody Record

eurofins Environment Testing

Client Information	Sampler: Ryan Ortbals and Rick Elgin	Lab PM: Johnson, Andy	Carrier Tracking No(s):	COC No: 180-91658-16873 1
Client Contact: Ryan Ortbals	Phone: 573-636-9454	E-Mail: Andy.Johnson@et.eurofinsus com	State of Origin: Missouri	Page: Page 1 of 2
Company: Midwest Environmental Consultants	PWSID:	Analysis Requested		Job #: 4676.04 (MEC)
Address: 2009 East McCarty Street Suite 2	Due Date Requested:			Preservation Codes: A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
City: Jefferson City	TAT Requested (days): Standard			
State, Zip: MO, 65101	Compliance Project: Δ Yes Δ No			Other:
Phone: 573-636-9454(Tel)	PO #: Purchase Order not required			
Email: rortbals@mecpc com	WO #:			
Project Name: Asbury Pond - CCR	Project #: 18023389			
Site	SSOW#:			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9056A_ORGFM_28D - (MOD)Chloride, Fluoride & Sulfate	6020B (Boron/Calcium)	2540C_Calcd - (MOD) TDS	Total Number of containers	Special Instructions/Note:	
			Preservation Code:								Field pH	Spec Cond
MW-2	5- 14 -24	8:45	GRAB	Water			X	X	X		5.72	0.299
MW-3	5- 14 -24	2:15	GRAB	Water			X	X	X		5.77	0.448
MW-4	5- 14 -24	9:25	GRAB	Water			X	X	X		7.00	1.962
MW-5	5- 14 -24	10:05	GRAB	Water			X	X	X		7.17	1.060
MW-5A	5- 14 -24	11:05	GRAB	Water			X	X	X		6.78	4.635
MW-5AR	5- 14 -24	11:35	GRAB	Water			X	X	X		7.08	1.550

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by	Date/Time	Company	Received by	Date/Time	Company
1	Ryan Ortbals	5-14-24 / 4:00	MEC	FedEX	5-14-24 / 4:00	FedEX
2		Date/Time:	Company	Received by	Date/Time	Company
					05/15/24 0935	EDH NE
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks

Ver: 01/16/2019

180-174054-02 Chain of Custody

Eurofins Pittsburgh
301 Alpha Drive RIDC Park
Pittsburgh, PA 15238
Phone (412) 963-7058 Phone (412) 963-2468

Chain of Custody Record

eurofins Environment Testing

Client Information	Sampler: Ryan Ortbals and Rick Elgin	Lab PM: Johnson, Andy	Carrier Tracking No(s):	COC No: 180-91658-16873.1
Client Contact: Ryan Ortbals	Phone: 573-636-9454	E-Mail: Andy.Johnson@et.eurofinsus.com	State of Origin: Missouri	Page: Page 2 of 2
Company: Midwest Environmental Consultants	PWSID:	Analysis Requested		Job #: 4676.04 (MEC)
Address: 2009 East McCarty Street Suite 2	Due Date Requested:			Preservation Codes: A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify), Other:
City: Jefferson City	TAT Requested (days): Standard			
State, Zip: MO, 65101	Compliance Project: Δ Yes Δ No			
Phone: 573-636-9454(Tel)	PO #: Purchase Order not required			
Email: rortbals@mecpc.com	WO #: 4			
Project Name: Asbury Pond - CCR	Project #: 18023389			
Site:	SSOW#:			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9056A_ORGFM_28D - (MOD) Chloride, Fluoride & Sulfate	6020B (Boron/Calcium)	2540C_Calcd - (MOD) TDS										Total Number of containers	Special Instructions/Note:
			Preservation Code:								S									Field pH / Spec Cond
MW-6	5-14-24	12:20	GRAB	Water			X	X	X											6.93 / 2.695
MW-6A	5-14-24	12:55	GRAB	Water			X	X	X											6.51 / 2.346
MW-7	5-14-24	1:35	GRAB	Water			X	X	X											6.47 / 3.417
Duplicate (at MW-5)	5-14-24	10:15	GRAB	Water			X	X	X											7.17 / 1.060
Field Blank	5-14-24	12:30	NA	Water			X	X	X											NA / NA

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested I, II, III, IV, Other (specify)

Special Instructions/QC Requirements

Empty Kit Relinquished by:	Date:	Time	Method of Shipment:

	Relinquished by	Date/Time	Company	Received by	Date/Time	Company
1	Ryan Ortbals	5-14-24 / 4:00	MEC	FedEX	5-14-24 / 4:00	FedEX
2		Date/Time:	Company	Received by:	Date/Time: 05/15/24 0935	Company: EHNE
3		Date/Time:	Company	Received by:	Date/Time	Company

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks

Ver: 01/16/2019

6/18/2024

180-174054 Waybill

ORIGIN ID:GTYA (717) 64?-6245
RICK ELGIN (ASBURY POND MINUSMW-5AR
MIDWEST ENVIRONMENTAL CONSULTANTS
2009 EAST MCCARTY STREET
SUITE 2
JEFFERSON CITY, MO 65101
UNITED STATES US

SHIP DATE: 07MAY24
ACTWGT: 44.00 LB MAN
CAD: 0129689/CAFE3511

TO **SAMPLE RECEIVING**
EUROFINS ENVIRONMENT TESTING NE
301 ALPHA DRIVE
RIDC PARK
PITTSBURGH PA 152382907
(412) 963-7058 REF:
INV:
PO: DEPT:

RMA:

Uncorrected temp 4.4 °C
Thermometer ID 23
CF -1.0 Initials BC
PT-WI-SR-001 effective 11/8/18

FedEx Express E
J211020121101uv
570C3/C137/6F4D

FedEx
TRK# 0221 **6772 2904 7434**
WED - 15 MAY 10:30A
PRIORITY OVERNIGHT
XS AGCA
15238
PA-US PIT

583J4/C458/9AE3

A 10:30 7434 05.15
98

ORIGIN ID:GTYA (717) 641-6245
RICK ELGIN (ASBURY POND MINUSMW-5AR
MIDWEST ENVIRONMENTAL CONSULTANTS
2009 EAST MCCARTY STREET
SUITE 2
JEFFERSON CITY, MO 65101
UNITED STATES US

SHIP DATE: 07MAY24
ACTWGT: 44.00 LB MAN
CAD: 0129689/CAFE3511

TO **SAMPLE RECEIVING**
EUROFINS ENVIRONMENT TEST
301 ALPHA DRIVE
RIDC PARK
PITTSBURGH PA 152382907
(412) 963 – 7058 REF:
INV:
PO: DEPT:

T 198
FZ 197
1 10:30
A
7412 05.15

RMA:

Uncorrected temp 6.6 °C
Thermometer ID 23
CF -1.0 Initials BC
PT-WI-SR-001 effective 11/8/18

FedEx Express
E
J211020121101uv

FedEx
TRK# 0221 **6772 2904 7412**

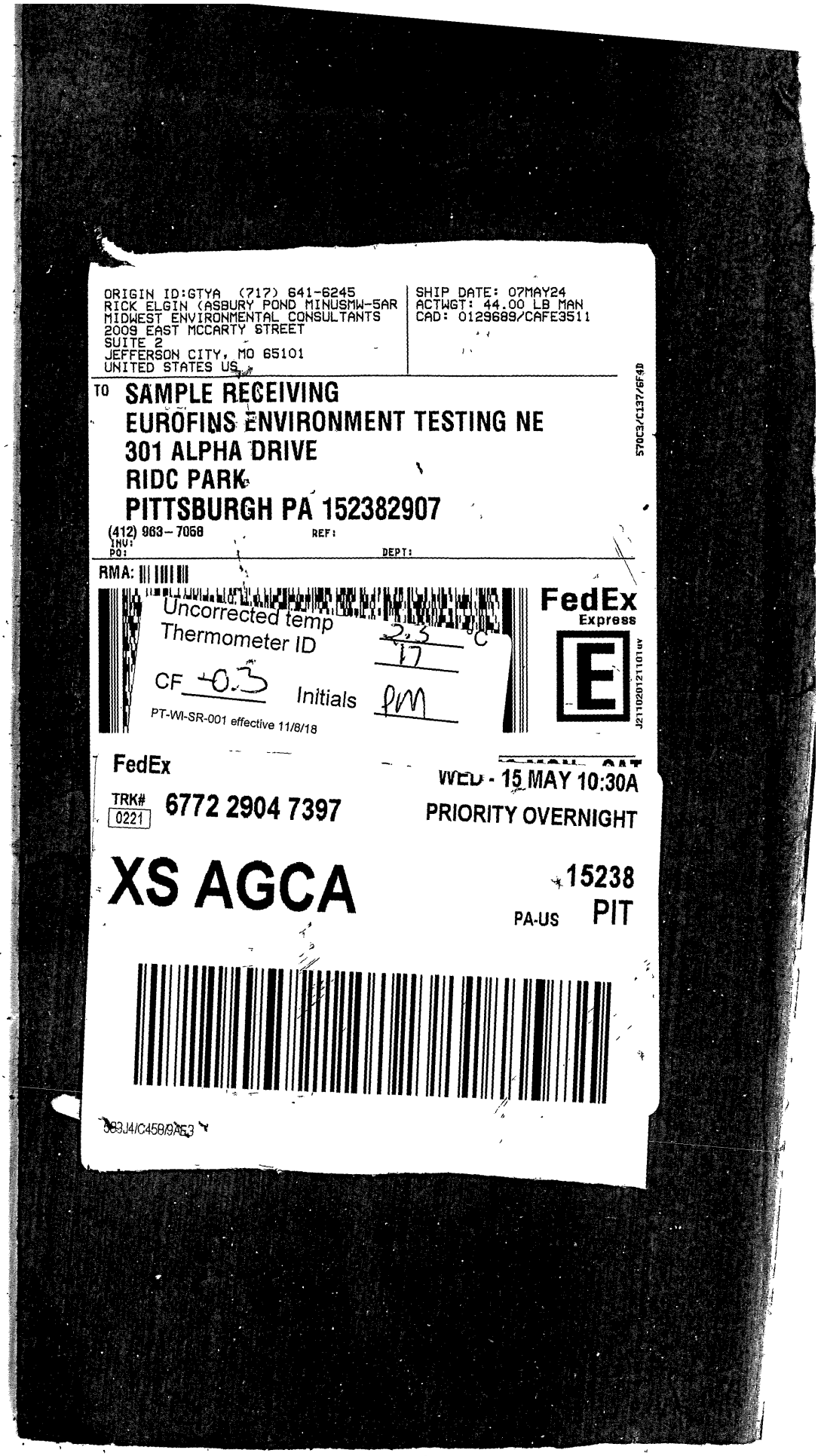
WED - 15 MAY 10:30A
PRIORITY OVERNIGHT

XS AGCA

15238
PA-US PIT

583J4/C459/9AE3

6/18/2024



ORIGIN ID:GTYA (717) 641-6245
RICK ELGIN (ASBURY POND MINUSMW-SAR
MIDWEST ENVIRONMENTAL CONSULTANTS
2009 EAST MCCARTY STREET
SUITE 2
JEFFERSON CITY, MO 65101
UNITED STATES US

SHIP DATE: 07MAY24
ACTWGT: 44.00 LB MAN
CAD: 0129689/CAFE3511

570C3/C137/6F4B

TO SAMPLE RECEIVING
EUROFINS ENVIRONMENT TESTING NE
301 ALPHA DRIVE
RIDC PARK
PITTSBURGH PA 152382907

(412) 963-7058 REF:
INV:
PO: DEPT:

RMA:

Uncorrected temp 23.3 C
Thermometer ID 17
CF +0.3 Initials PM
PT-WI-SR-001 effective 11/8/18

FedEx Express

J211020121101uv

FedEx

TRK# 0221 6772 2904 7397

WED - 15 MAY 10:30A
PRIORITY OVERNIGHT

XS AGCA

15238
PA-US PIT

983J4/C458/9A53

1 2 3 4 5 6 7 8 9 10 11 12 13

Part # 159469-494 MTW EXP 01/25

RT 198 1 10:30 A
FZ 197
7401
05:15

ORIGIN ID:GTYA (717) 641-6245
RICK ELGIN (ASBURY POND MINUSMW-5AR
MIDWEST ENVIRONMENTAL CONSULTANTS
2009 EAST MCCARTY STREET
SUITE 2
JEFFERSON CITY, MO 65101
UNITED STATES US

SHIP DATE: 07MAY24
ACTWGT: 44.00 LB MAN
CAD: 0129689/CAFE3511

TO SAMPLE RECEIVING
EUROFINS ENVIRONMENT TESTING NE
301 ALPHA DRIVE
RIDC PARK
PITTSBURGH PA 152382907
(412) 963-7058 REF:
INV:
PO: DEPT:

RMA:

Uncorrected temp 19 °C
Thermometer ID 17
CF -0.3 Initials PM
PT-WI-SR-001 effective 11/8/18

FedEx Express

FedEx
TRK# 0221 6772 2904 7401
WED - 15 MAY 10:30A
PRIORITY OVERNIGHT

XS AGCA
15238
PA-US PIT

583J4/C459/9AE3

180-174054 Waybill

Eurofins Pittsburgh
301 Alpha Drive RIDC Park
Pittsburgh, PA 15238
Phone: 412-963-7058 Fax: 412-963-2468

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Johnson, Andy	Carrier Tracking No(s):	COC No: 180-514836.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Andy.Johnson@et.eurofinsus.com	State of Origin: Missouri	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note):		Job #: 180-174054-2
Address: 13715 Rider Trail North,	Due Date Requested: 6/17/2024	**Analysis Requested**		Preservation Codes: -
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Asbury Pond CCR	Project #: 18023389			Other:
Site:	SSOW#:			

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9315_Ra226/PrecSep_21 Standard Target List	9320_Ra228/PrecSep_0 Standard Target List	Ra226Ra228_GFPC	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
MW-5AR (180-174054-6)	5/14/24	11:35 Central		Water			X	X	X	4	Historical Review required; Run once, upload twice

Note: Since laboratory accreditations are subject to change, Eurofins Pittsburgh places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Pittsburgh laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Pittsburgh attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Pittsburgh.

Possible Hazard Identification Unconfirmed	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ Return To Client ☐ Disposal By Lab ☐ Archive For ____ Months
Deliverable Requested: I, II, III, IV, Other (specify) — Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:		Method of Shipment:	
Relinquished by: [signature]	Date/Time: 5-16-24 1700	Company: EPi/KWE	Received by: Sierra Worthington	Date/Time: MAY 17 2024 0850	Company: ETASL
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:	Company:
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:	Company:
Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:		

Ver: 06/08/2021

Eurofins Pittsburgh
301 Alpha Drive RIDC Park
Pittsburgh, PA 15238
Phone: 412-963-7058 Fax: 412-963-2468

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Johnson, Andy	Carrier Tracking No(s):	COC No: 180-514836.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Andy.Johnson@et.eurofinsus.com	State of Origin: Missouri	Page: Page 1 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note):		Job #: 180-174054-1
Address: 13715 Rider Trail North, ,	Due Date Requested: 6/17/2024			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Asbury Pond NPDES	Project #: 18023389			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
-

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9315_Ra226/PrecSep_21 Standard Target List	9320_Ra228/PrecSep_0 Standard Target List	Ra226Ra228_GFPC	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
MW-2 (180-174054-1)	5/14/24	08:45 Central		Water			X	X	X	4	Historical Review required; Run once, upload twice
MW-3 (180-174054-2)	5/14/24	02:15 Central		Water			X	X	X	4	Historical Review required; Run once, upload twice
MW-4 (180-174054-3)	5/14/24	09:25 Central		Water			X	X	X	4	Historical Review required; Run once, upload twice
MW-5 (180-174054-4)	5/14/24	10:05 Central		Water			X	X	X	4	Historical Review required; Run once, upload twice
MW-5A (180-174054-5)	5/14/24	11:05 Central		Water			X	X	X	4	Historical Review required; Run once, upload twice
MW-5AR (180-174054-6)	5/14/24	11:35 Central		Water			X	X	X	4	Historical Review required; Run once, upload twice
MW-6 (180-174054-7)	5/14/24	12:20 Central		Water			X	X	X	4	Historical Review required; Run once, upload twice
MW-6A (180-174054-8)	5/14/24	12:55 Central		Water			X	X	X	4	Historical Review required; Run once, upload twice
MW-7 (180-174054-9)	5/14/24	01:35 Central		Water			X	X	X	4	Historical Review required; Run once, upload twice

Note: Since laboratory accreditations are subject to change, Eurofins Pittsburgh places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Pittsburgh laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Pittsburgh attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Pittsburgh.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	[signature]	5-16-24 1700	FEDEX	Sierra Worthington	MAY 17 2024 0850	ENTRS
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

6/18/2024

Eurofins Pittsburgh
301 Alpha Drive RIDC Park
Pittsburgh, PA 15238
Phone: 412-963-7058 Fax: 412-963-2468

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Johnson, Andy	Carrier Tracking No(s):	COC No: 180-514836.2
Client Contact: Shipping/Receiving	Phone:	E-Mail: Andy.Johnson@et.eurofinsus.com	State of Origin: Missouri	Page: Page 2 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note):		Job #: 180-174054-1
Address: 13715 Rider Trail North, ,	Due Date Requested: 6/17/2024	Analysis Requested		Preservation Codes: -
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Asbury Pond NPDES	Project #: 18023389			Other:
Site:	SSOW#:			

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9315_Ra226/PrecSep_21 Standard Target List	9320_Ra228/PrecSep_0 Standard Target List	Ra226Ra228_GFPC	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
DUPLICATE (AT MW-5) (180-174054-10)	5/14/24	10:15 Central		Water			X	X	X	4	Historical Review required; Run once, upload twice
FIELD BLANK (180-174054-11)	5/14/24	12:30 Central		Water			X	X	X	4	Historical Review required; Run once, upload twice

Note: Since laboratory accreditations are subject to change, Eurofins Pittsburgh places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Pittsburgh laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Pittsburgh attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Pittsburgh.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time: 5-16-24 1700	Company: ET.PIT	Received by: Sierra Worthington	Date/Time: MAY 17 2024 0850	Company: ETPIT
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks

Ver: 06/08/2021

6/18/2024

Login Sample Receipt Checklist

Client: Midwest Environmental Consultants

Job Number: 180-174054-2

Login Number: 174054
List Number: 1
Creator: Abernathy, Eric L

List Source: Eurofins Pittsburgh

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Midwest Environmental Consultants

Job Number: 180-174054-2

Login Number: 174054
List Number: 2
Creator: Worthington, Sierra M

List Source: Eurofins St. Louis
List Creation: 05/17/24 02:07 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	N/A	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

APPENDIX 4

Statistical Analysis

JETT ENVIRONMENTAL CONSULTING

July 9, 2024 ***Submitted via Email***

Mr. Lindsey R. Henry, PE
Midwest Environmental Consultants
2009 E. McCarty St., Suite 2
Jefferson City, MO 65101

Re: Groundwater Statistical Analysis Results
Asbury Power Plant – Coal Combustion Residuals (CCR) Impoundment
United States Environmental Protection Agency Program

Dear Mr. Henry:

Jett Environmental Consulting is providing the results of the groundwater statistical analysis for the May 2024 event at the Asbury Power Plant – CCR Impoundment.

If you have any questions or comments, please contact me at steve.jett@jettenviro.com or 314-496-4654.

Sincerely,

Steve Jett, P.G.
Owner

Travis Doll
Senior Geologist

Attachments: *Table 1 – SSIs Observed During May 2024 Sampling Event*
1 - Time Series Graphs – Inorganics
2 - Trend Testing – Inorganics
3 - Inter-Well Prediction Limits
4 - Statistical Power Curves

Inorganics – Times Series & Trend Testing

Time Series graphs were generated for each of the inorganic constituents. The time series graphs are included in **Attachment 1**.

The inorganic constituents with results above the laboratory reporting limits were analyzed with Sanitas™ to determine if statistically significant increasing or decreasing trends exist utilizing the Sen's Slope / Mann-Kendall trend test. Trends were based on a 98% confidence level (two tailed). The following constituents exhibited statistically significant increasing trends: boron (MW-5A), calcium (MW-5A, MW-6A), chloride (MW-5, MW-5A, MW-6), fluoride (MW-7), sulfate (MW-5A, MW-6A), and total dissolved solids (MW-5A, MW-6A). Of the increasing trends, only one instance was for an upgradient well (fluoride at MW-7); however, fluoride was reported as non-detect over the last eight rounds of background sampling. All other constituents were either not trending or had a statistically significant decreasing trend. The trending data have only been reviewed at this time. No trending data was removed before performing the inter-well prediction interval analysis. The trend testing results are included in **Attachment 2**.

Inorganics – Inter-Well Prediction Limits

Statistical Analysis was performed on the inorganic constituents and metals. Prediction interval analyses compare one or more observations to a limit set by background data. Background data consists of semi-annual groundwater tests from the upgradient wells (MW-2, MW-3, and MW-7) between January 2016 and May 2023 (20 events). Inter-well analyses compare observations from upgradient background wells and their relation to the observations for the downgradient wells. Intra-well analyses compare background observations to current observations of the same well.

Sanitas™ was used to perform the statistical analyses. For most constituents, non-parametric inter-well prediction intervals were performed due to non-detectable levels in more than 50 percent of the background samples or if data were not normally distributed. The Sanitas™ inter-well prediction limit outputs are included in **Attachment 3**.

Table 1 lists the parameters that exhibited a statistically significant increase (SSI) during the May 2024 sampling event, the associated monitoring wells, inter-well prediction limit, and the measured concentration. Also included on the table is a comparison to any established USEPA National Primary Drinking Water Standard - Maximum Contaminant Level (MCL).

Statistical Power Curves

A statistical power curve graph has been prepared to allow comparisons between the current monitoring program and USEPA-recommended standards. Under the USEPA's *Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance* (March 2009), inter-well prediction limits are constructed to have a site-wide false positive rate (SWFPR) of 10% annually, or 5% per event for a semi-annually sampled facility. **Attachment 4** presents the power curves for the facility's monitoring program.

Results Summary

Boron (MW-5A) and total dissolved solids (MW-5A) exhibited confirmed SSIs during the May 2024 event.

No result exhibited an initial SSI during the May 2024 event.

Of the SSIs, none have an established MCL. During the November 2023 sampling event, an initial SSI was detected for chloride (MW-5A), which was not confirmed as an SSI during the May 2024 sampling event.

Table 1
SSI Observed During May 2024 Sampling Event

Constituent (units)	Well	Initial vs. Confirmed	Statistical Limit	Result	MCL
Boron (mg/L)	MW-5A	Confirmed	0.9	2.1	NE
Total Dissolved Solids (mg/L)	MW-5A	Confirmed	3100	3200	NE

NE = Not Established.

MCL = USEPA National Primary Drinking Water Standard - Maximum Contaminant Level

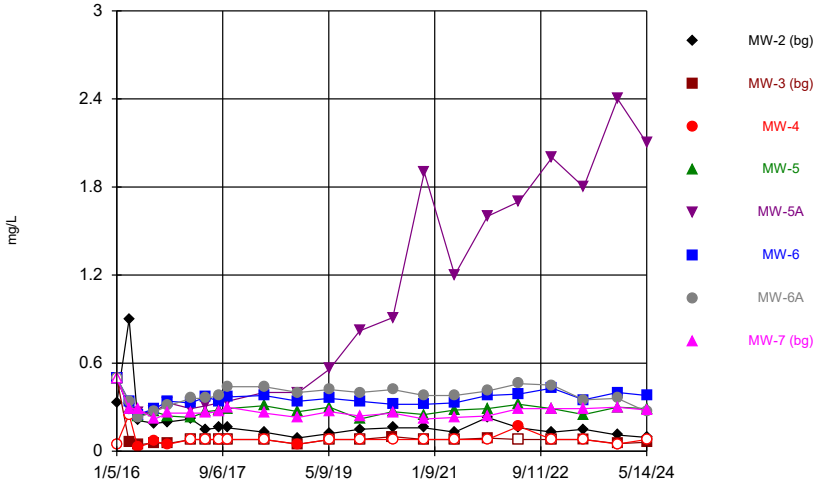
ATTACHMENTS

ATTACHMENT 1

TIME SERIES GRAPHS
INORGANICS

Sanitas™ v.10.0.19 Software licensed to Jett Environmental Consulting. UG
Hollow symbols indicate censored values.

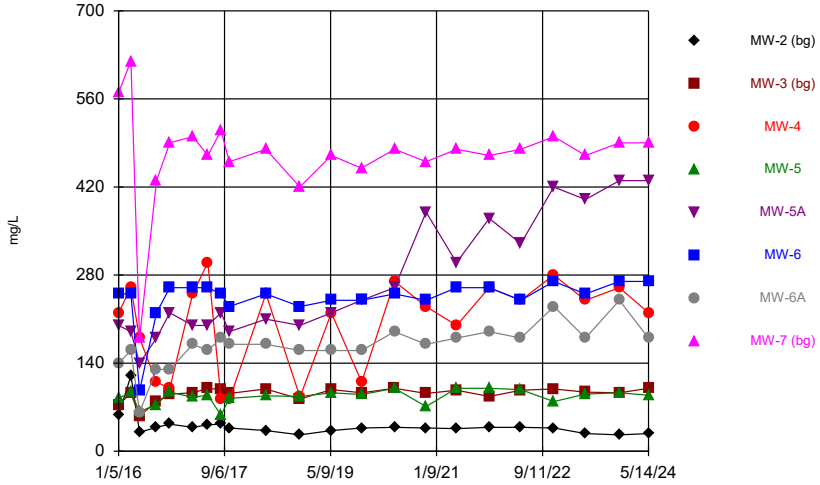
Boron



Time Series Analysis Run 7/3/2024 8:43 AM
Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

Sanitas™ v.10.0.19 Software licensed to Jett Environmental Consulting. UG

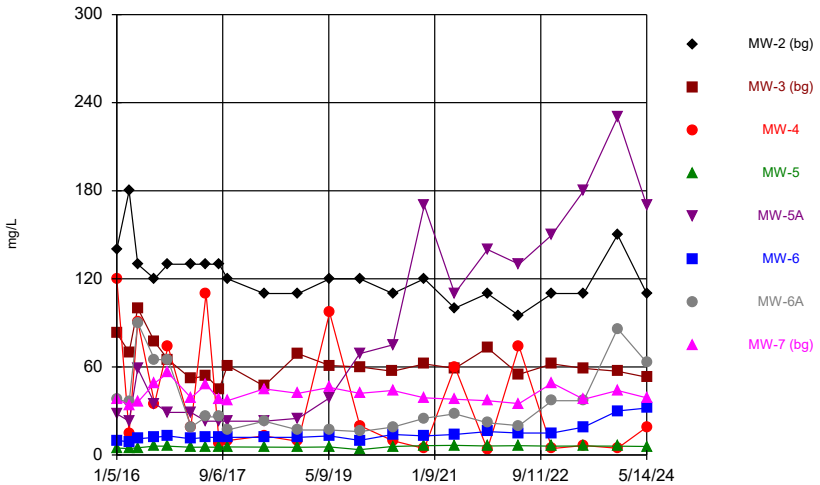
Calcium



Time Series Analysis Run 7/3/2024 8:43 AM
Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

Sanitas™ v.10.0.19 Software licensed to Jett Environmental Consulting. UG

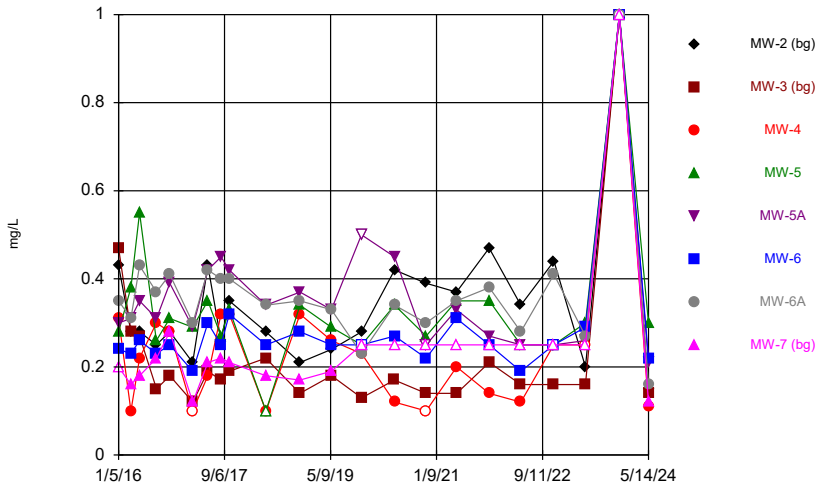
Chloride



Time Series Analysis Run 7/3/2024 8:43 AM
Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

Sanitas™ v.10.0.19 Software licensed to Jett Environmental Consulting. UG
Hollow symbols indicate censored values.

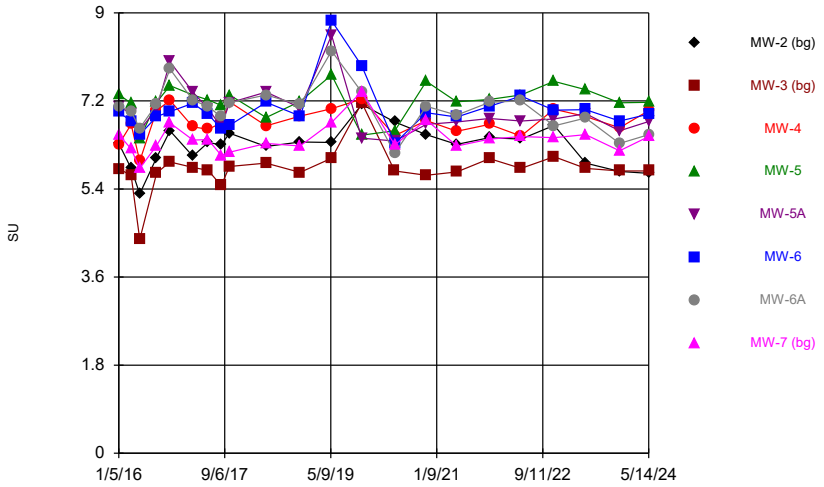
Fluoride



Time Series Analysis Run 7/3/2024 8:43 AM
Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

Sanitas™ v.10.0.19 Software licensed to Jett Environmental Consulting. UG

pH



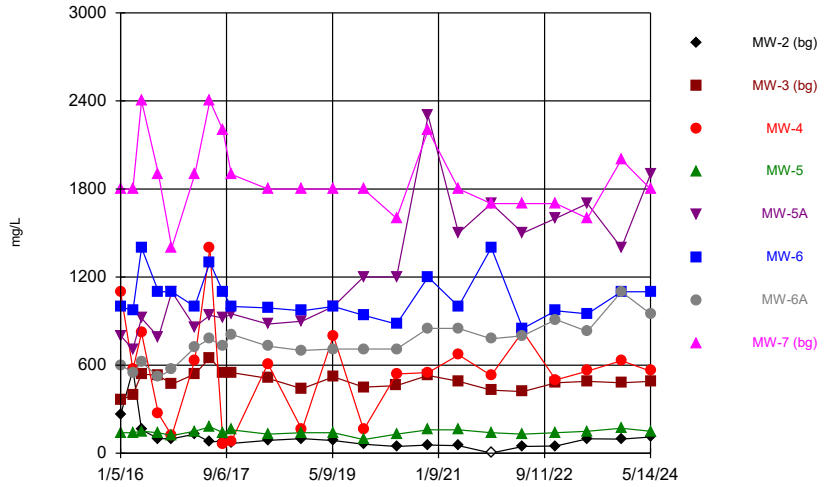
Time Series Analysis Run 7/3/2024 8:43 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

Sanitas™ v.10.0.19 Software licensed to Jett Environmental Consulting. UG

Hollow symbols indicate censored values.

Sulfate

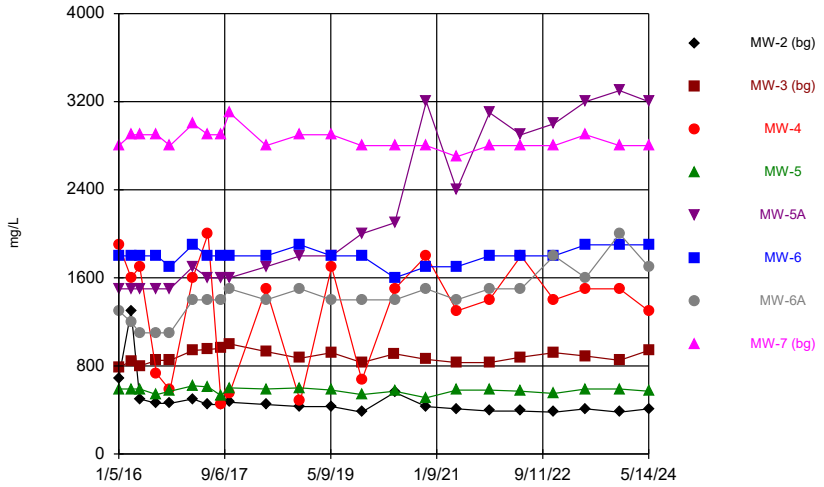


Time Series Analysis Run 7/3/2024 8:43 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

Sanitas™ v.10.0.19 Software licensed to Jett Environmental Consulting. UG

Total Dissolved Solids



Time Series Analysis Run 7/3/2024 8:43 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

ATTACHMENT 2

TREND TESTING
INORGANICS

Trend Test

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant Printed 7/3/2024, 8:47 AM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
Boron (mg/L)	**MW-2 (bg)**	**-0.01157**	**-74**	**-73**	**Yes**	**20**	**0**	**n/a**	**n/a**	**0.02**	**NP**
Boron (mg/L)	MW-3 (bg)	1.4e-10	44	73	No	20	60	n/a	n/a	0.02	NP
Boron (mg/L)	MW-4	0	52	73	No	20	75	n/a	n/a	0.02	NP
Boron (mg/L)	MW-5	0	13	73	No	20	5	n/a	n/a	0.02	NP
Boron (mg/L)	**MW-5A**	**0.2069**	**149**	**73**	**Yes**	**20**	**5**	**n/a**	**n/a**	**0.02**	**NP**
Boron (mg/L)	MW-6	0.004198	36	73	No	20	5	n/a	n/a	0.02	NP
Boron (mg/L)	MW-6A	0.014	59	73	No	20	5	n/a	n/a	0.02	NP
Boron (mg/L)	MW-7 (bg)	0	-22	-73	No	20	5	n/a	n/a	0.02	NP
Calcium (mg/L)	MW-2 (bg)	-1.025	-60	-73	No	20	0	n/a	n/a	0.02	NP
Calcium (mg/L)	MW-3 (bg)	1.323	60	73	No	20	0	n/a	n/a	0.02	NP
Calcium (mg/L)	MW-4	5.128	33	73	No	20	0	n/a	n/a	0.02	NP
Calcium (mg/L)	MW-5	1.7	51	73	No	20	0	n/a	n/a	0.02	NP
Calcium (mg/L)	**MW-5A**	**29.17**	**136**	**73**	**Yes**	**20**	**0**	**n/a**	**n/a**	**0.02**	**NP**
Calcium (mg/L)	MW-6	0	30	73	No	20	0	n/a	n/a	0.02	NP
Calcium (mg/L)	**MW-6A**	**7.097**	**108**	**73**	**Yes**	**20**	**0**	**n/a**	**n/a**	**0.02**	**NP**
Calcium (mg/L)	MW-7 (bg)	0	-12	-73	No	20	0	n/a	n/a	0.02	NP
Chloride (mg/L)	**MW-2 (bg)**	**-4.251**	**-121**	**-73**	**Yes**	**20**	**0**	**n/a**	**n/a**	**0.02**	**NP**
Chloride (mg/L)	MW-3 (bg)	-1.609	-43	-73	No	20	0	n/a	n/a	0.02	NP
Chloride (mg/L)	**MW-4**	**-3.614**	**-74**	**-73**	**Yes**	**20**	**0**	**n/a**	**n/a**	**0.02**	**NP**
Chloride (mg/L)	**MW-5**	**0.1787**	**93**	**73**	**Yes**	**20**	**0**	**n/a**	**n/a**	**0.02**	**NP**
Chloride (mg/L)	**MW-5A**	**17.84**	**105**	**73**	**Yes**	**20**	**0**	**n/a**	**n/a**	**0.02**	**NP**
Chloride (mg/L)	**MW-6**	**0.7246**	**126**	**73**	**Yes**	**20**	**0**	**n/a**	**n/a**	**0.02**	**NP**
Chloride (mg/L)	MW-6A	-1.923	-41	-73	No	20	0	n/a	n/a	0.02	NP
Chloride (mg/L)	MW-7 (bg)	-0.08072	-10	-73	No	20	0	n/a	n/a	0.02	NP
Fluoride (mg/L)	MW-2 (bg)	0.008487	22	73	No	20	0	n/a	n/a	0.02	NP
Fluoride (mg/L)	MW-3 (bg)	-0.006744	-61	-73	No	20	0	n/a	n/a	0.02	NP
Fluoride (mg/L)	MW-4	-0.006169	-21	-73	No	20	20	n/a	n/a	0.02	NP
Fluoride (mg/L)	MW-5	-0.004548	-27	-73	No	20	5	n/a	n/a	0.02	NP
Fluoride (mg/L)	MW-5A	-0.007672	-37	-73	No	20	15	n/a	n/a	0.02	NP
Fluoride (mg/L)	MW-6	0.0007283	23	73	No	20	10	n/a	n/a	0.02	NP
Fluoride (mg/L)	MW-6A	-0.009747	-49	-73	No	20	0	n/a	n/a	0.02	NP
Fluoride (mg/L)	**MW-7 (bg)**	**0.008083**	**77**	**73**	**Yes**	**20**	**45**	**n/a**	**n/a**	**0.02**	**NP**
pH (SU)	MW-2 (bg)	0.05735	59	73	No	20	0	n/a	n/a	0.02	NP
pH (SU)	MW-3 (bg)	0.02709	52	73	No	20	0	n/a	n/a	0.02	NP
pH (SU)	MW-4	0.0217	19	73	No	20	0	n/a	n/a	0.02	NP
pH (SU)	MW-5	0.02125	34	73	No	20	0	n/a	n/a	0.02	NP
pH (SU)	MW-5A	-0.03798	-29	-73	No	20	0	n/a	n/a	0.02	NP
pH (SU)	MW-6	0.03219	46	73	No	20	0	n/a	n/a	0.02	NP
pH (SU)	MW-6A	-0.008695	-9	-73	No	20	0	n/a	n/a	0.02	NP
pH (SU)	MW-7 (bg)	0.03464	52	73	No	20	0	n/a	n/a	0.02	NP
Sulfate (mg/L)	**MW-2 (bg)**	**-16.16**	**-122**	**-73**	**Yes**	**20**	**5**	**n/a**	**n/a**	**0.02**	**NP**
Sulfate (mg/L)	MW-3 (bg)	-6.48	-24	-73	No	20	0	n/a	n/a	0.02	NP
Sulfate (mg/L)	MW-4	-6.658	-7	-73	No	20	0	n/a	n/a	0.02	NP
Sulfate (mg/L)	MW-5	0	-3	-73	No	20	0	n/a	n/a	0.02	NP
Sulfate (mg/L)	**MW-5A**	**127.3**	**132**	**73**	**Yes**	**20**	**0**	**n/a**	**n/a**	**0.02**	**NP**
Sulfate (mg/L)	MW-6	-18.61	-57	-73	No	20	0	n/a	n/a	0.02	NP
Sulfate (mg/L)	**MW-6A**	**34.49**	**108**	**73**	**Yes**	**20**	**0**	**n/a**	**n/a**	**0.02**	**NP**
Sulfate (mg/L)	MW-7 (bg)	-33.2	-70	-73	No	20	0	n/a	n/a	0.02	NP
Total Dissolved Solids (mg/L)	**MW-2 (bg)**	**-16.07**	**-127**	**-73**	**Yes**	**20**	**0**	**n/a**	**n/a**	**0.02**	**NP**
Total Dissolved Solids (mg/L)	MW-3 (bg)	5.317	19	73	No	20	0	n/a	n/a	0.02	NP

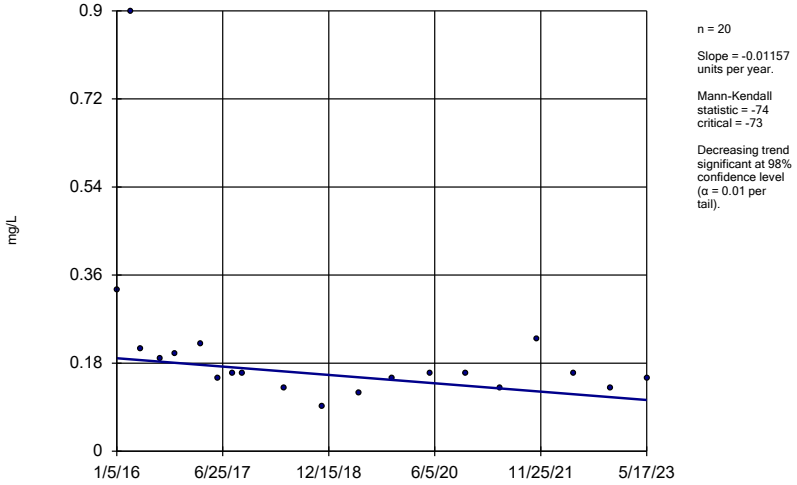
Trend Test

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant Printed 7/3/2024, 8:47 AM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
Total Dissolved Solids (mg/L)	MW-4	-6.971	-7	-73	No	20	0	n/a	n/a	0.02	NP
Total Dissolved Solids (mg/L)	MW-5	-3.205	-42	-73	No	20	0	n/a	n/a	0.02	NP
Total Dissolved Solids (mg/L)	**MW-5A**	**195.1**	**156**	**73**	**Yes**	**20**	**0**	**n/a**	**n/a**	**0.02**	**NP**
Total Dissolved Solids (mg/L)	MW-6	0	-4	-73	No	20	0	n/a	n/a	0.02	NP
Total Dissolved Solids (mg/L)	**MW-6A**	**50.05**	**113**	**73**	**Yes**	**20**	**0**	**n/a**	**n/a**	**0.02**	**NP**
Total Dissolved Solids (mg/L)	MW-7 (bg)	0	-48	-73	No	20	0	n/a	n/a	0.02	NP

Boron

MW-2 (bg)



n = 20

Slope = -0.01157 units per year.

Mann-Kendall statistic = -74
critical = -73

Decreasing trend significant at 98% confidence level (α = 0.01 per tail).

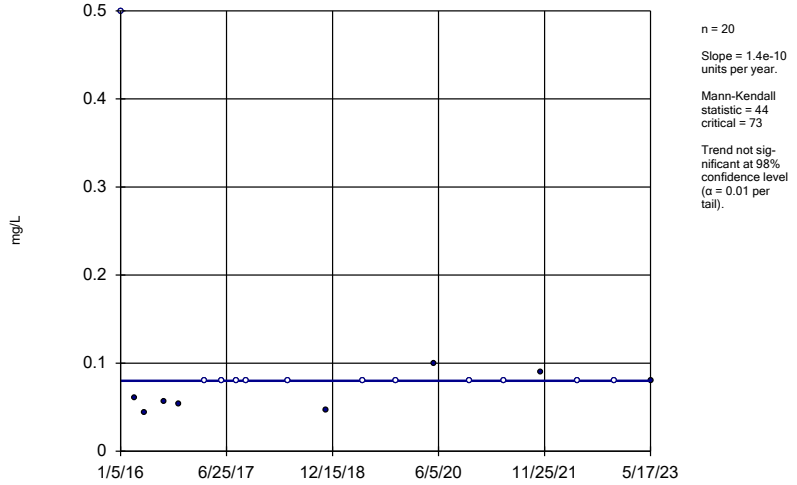
Sen's Slope Estimator Analysis Run 7/3/2024 8:45 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

Hollow symbols indicate censored values.

Boron

MW-3 (bg)



n = 20

Slope = 1.4e-10 units per year.

Mann-Kendall statistic = 44
critical = 73

Trend not significant at 98% confidence level (α = 0.01 per tail).

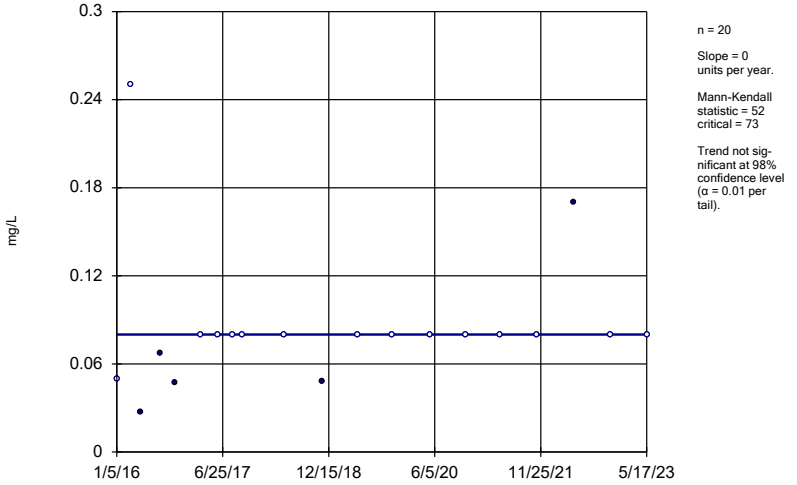
Sen's Slope Estimator Analysis Run 7/3/2024 8:45 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

Hollow symbols indicate censored values.

Boron

MW-4



n = 20

Slope = 0 units per year.

Mann-Kendall statistic = 52
critical = 73

Trend not significant at 98% confidence level (α = 0.01 per tail).

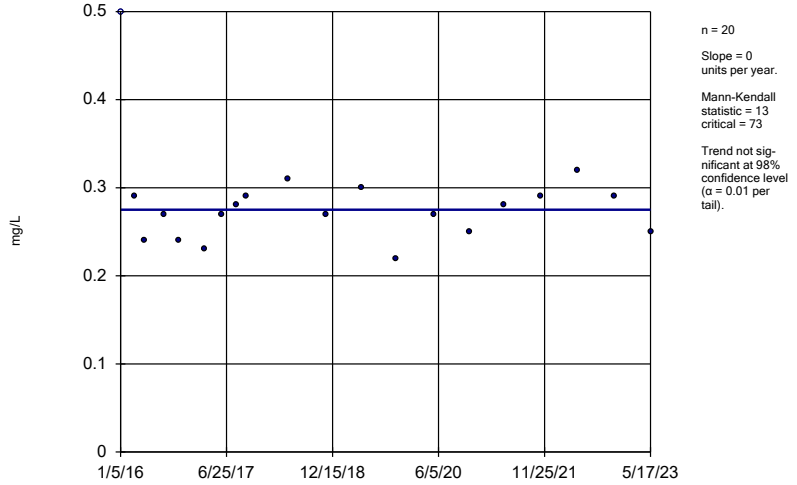
Sen's Slope Estimator Analysis Run 7/3/2024 8:45 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

Hollow symbols indicate censored values.

Boron

MW-5



n = 20

Slope = 0 units per year.

Mann-Kendall statistic = 13
critical = 73

Trend not significant at 98% confidence level (α = 0.01 per tail).

Sen's Slope Estimator Analysis Run 7/3/2024 8:45 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

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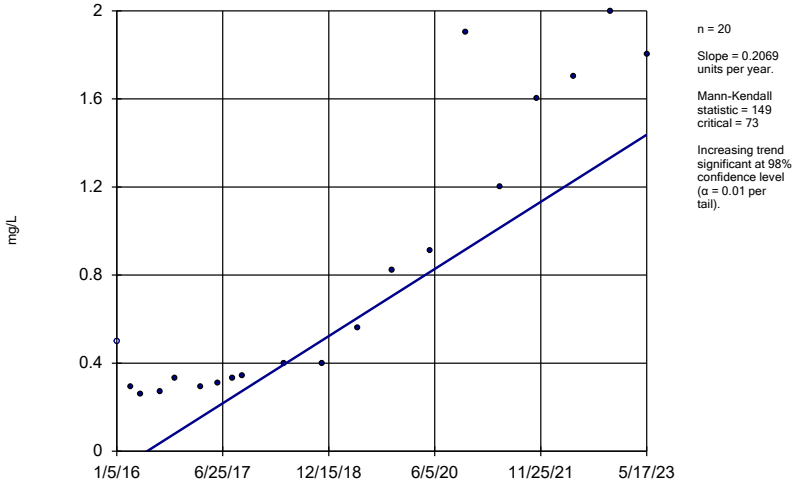
Hollow symbols indicate censored values.

Boron

MW-5A



n = 20

Slope = 0.2069 units per year.

Mann-Kendall statistic = 149
critical = 73

Increasing trend significant at 98% confidence level (α = 0.01 per tail).

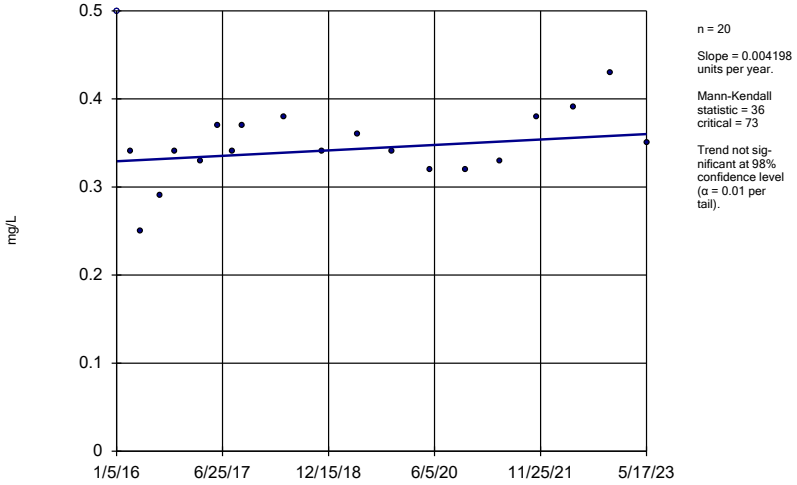
Sen's Slope Estimator Analysis Run 7/3/2024 8:45 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

Sanitas™ v.10.0.19 Software licensed to Jett Environmental Consulting. UG
Hollow symbols indicate censored values.

Boron

MW-6



n = 20

Slope = 0.004198 units per year.

Mann-Kendall statistic = 36
critical = 73

Trend not significant at 98% confidence level (α = 0.01 per tail).

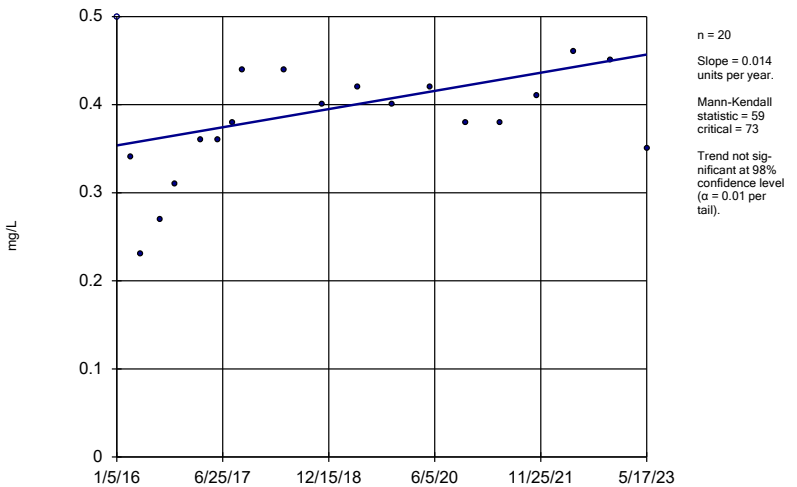
Sen's Slope Estimator Analysis Run 7/3/2024 8:45 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

Sanitas™ v.10.0.19 Software licensed to Jett Environmental Consulting. UG
Hollow symbols indicate censored values.

Boron

MW-6A



n = 20

Slope = 0.014 units per year.

Mann-Kendall statistic = 59
critical = 73

Trend not significant at 98% confidence level (α = 0.01 per tail).

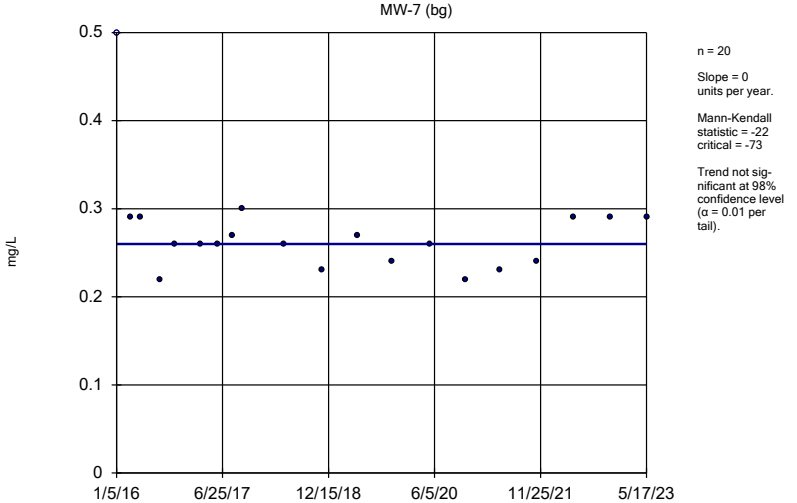
Sen's Slope Estimator Analysis Run 7/3/2024 8:45 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

Sanitas™ v.10.0.19 Software licensed to Jett Environmental Consulting. UG
Hollow symbols indicate censored values.

Boron

MW-7 (bg)



n = 20

Slope = 0 units per year.

Mann-Kendall statistic = -22
critical = -73

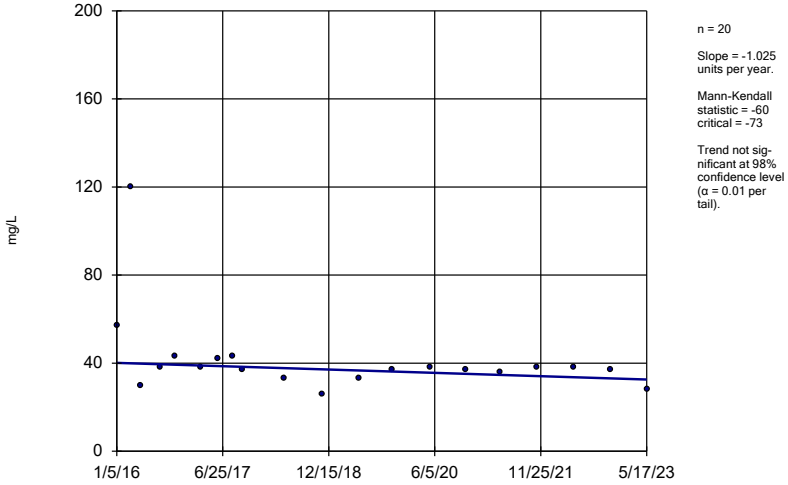
Trend not significant at 98% confidence level (α = 0.01 per tail).

Sen's Slope Estimator Analysis Run 7/3/2024 8:45 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

Calcium

MW-2 (bg)



n = 20

Slope = -1.025 units per year.

Mann-Kendall statistic = -60 critical = -73

Trend not significant at 98% confidence level (α = 0.01 per tail).

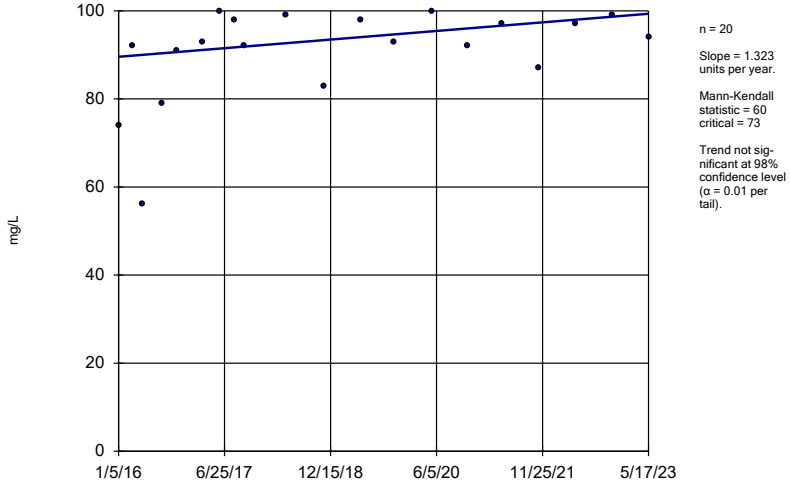
Sen's Slope Estimator Analysis Run 7/3/2024 8:45 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

Sanitas™ v.10.0.19 Software licensed to Jett Environmental Consulting. UG

Calcium

MW-3 (bg)



n = 20

Slope = 1.323 units per year.

Mann-Kendall statistic = 60 critical = 73

Trend not significant at 98% confidence level (α = 0.01 per tail).

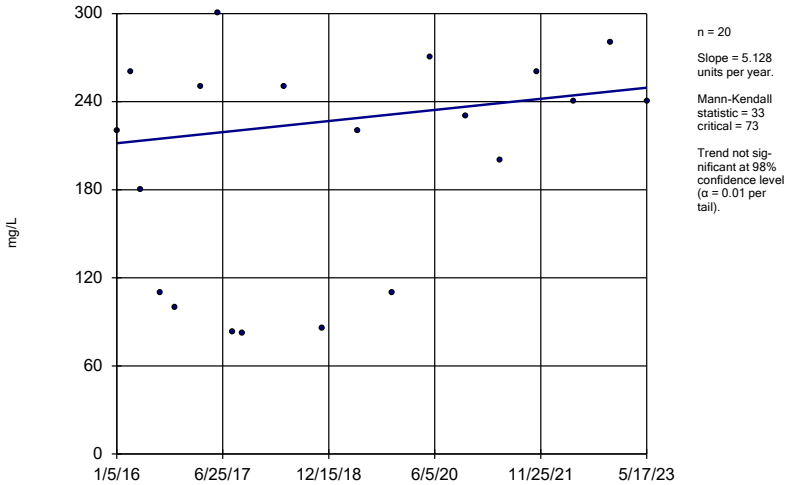
Sen's Slope Estimator Analysis Run 7/3/2024 8:45 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

Sanitas™ v.10.0.19 Software licensed to Jett Environmental Consulting. UG

Calcium

MW-4



n = 20

Slope = 5.128 units per year.

Mann-Kendall statistic = 33 critical = 73

Trend not significant at 98% confidence level (α = 0.01 per tail).

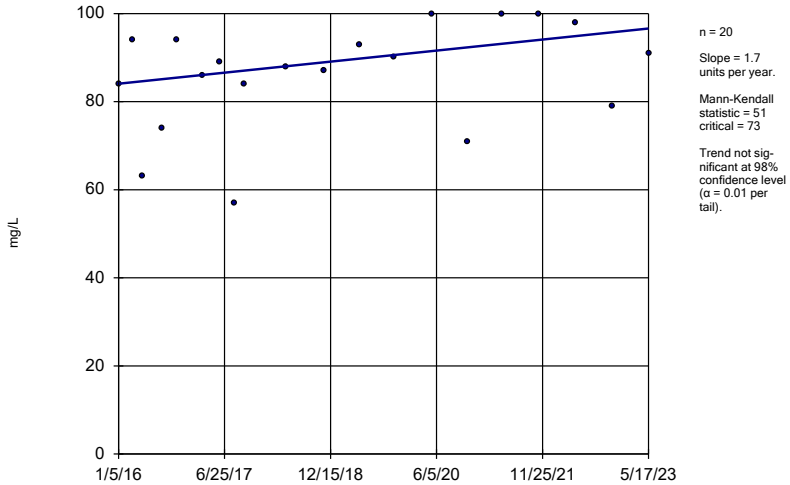
Sen's Slope Estimator Analysis Run 7/3/2024 8:45 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

Sanitas™ v.10.0.19 Software licensed to Jett Environmental Consulting. UG

Calcium

MW-5



n = 20

Slope = 1.7 units per year.

Mann-Kendall statistic = 51 critical = 73

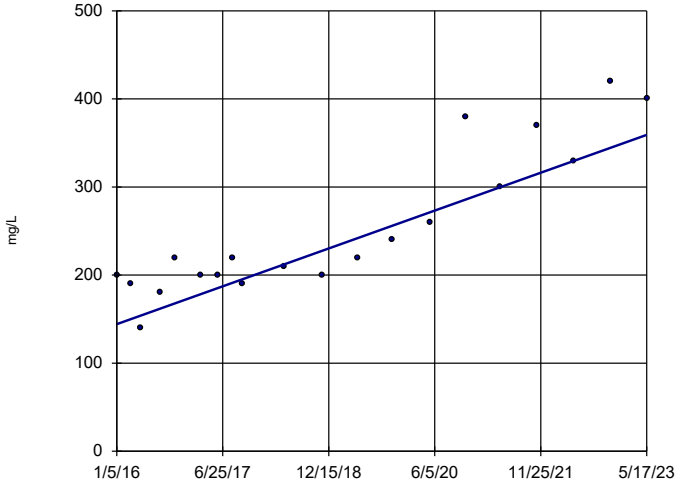
Trend not significant at 98% confidence level (α = 0.01 per tail).

Sen's Slope Estimator Analysis Run 7/3/2024 8:45 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

Calcium

MW-5A



n = 20

Slope = 29.17 units per year.

Mann-Kendall statistic = 136 critical = 73

Increasing trend significant at 98% confidence level (α = 0.01 per tail).

Sen's Slope Estimator Analysis Run 7/3/2024 8:45 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

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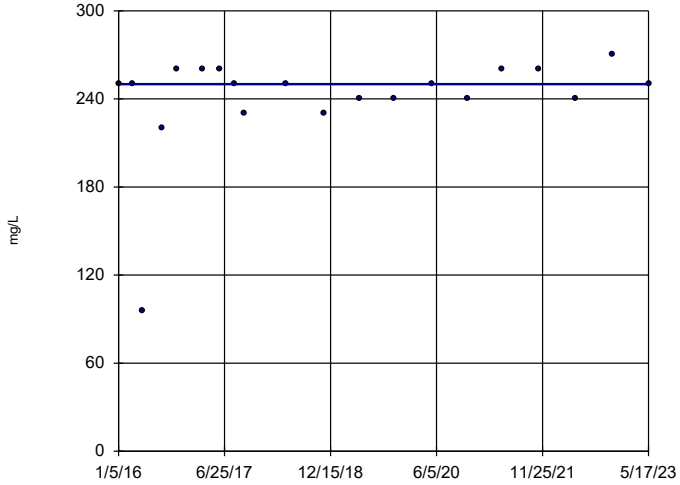
Calcium

MW-6



n = 20

Slope = 0 units per year.

Mann-Kendall statistic = 30 critical = 73

Trend not significant at 98% confidence level (α = 0.01 per tail).

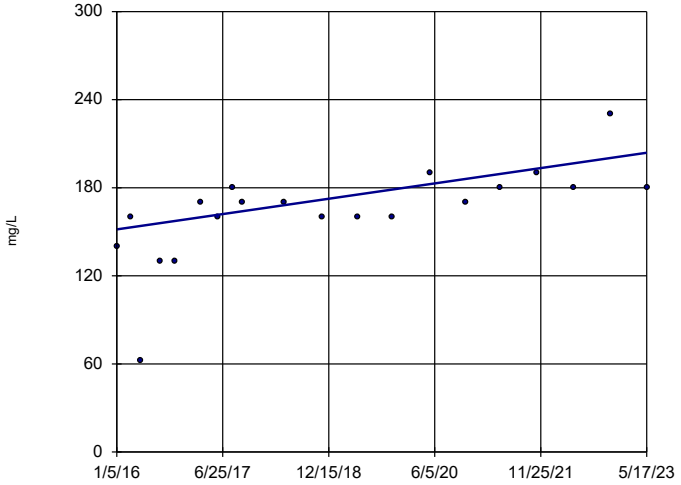
Sen's Slope Estimator Analysis Run 7/3/2024 8:45 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

Sanitas™ v.10.0.19 Software licensed to Jett Environmental Consulting. UG

Calcium

MW-6A



n = 20

Slope = 7.097 units per year.

Mann-Kendall statistic = 108 critical = 73

Increasing trend significant at 98% confidence level (α = 0.01 per tail).

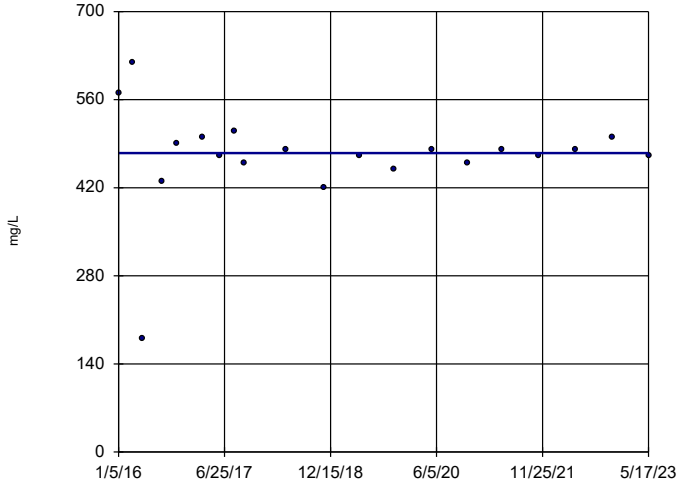
Sen's Slope Estimator Analysis Run 7/3/2024 8:45 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

Sanitas™ v.10.0.19 Software licensed to Jett Environmental Consulting. UG

Calcium

MW-7 (bg)



n = 20

Slope = 0 units per year.

Mann-Kendall statistic = -12 critical = -73

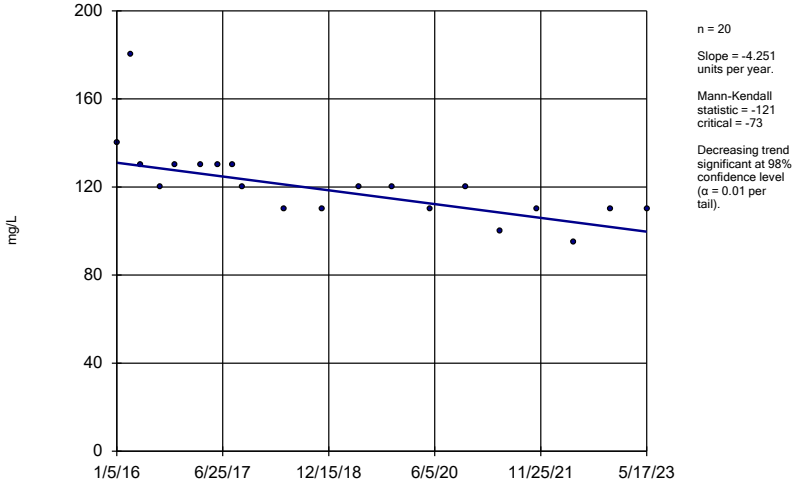
Trend not significant at 98% confidence level (α = 0.01 per tail).

Sen's Slope Estimator Analysis Run 7/3/2024 8:45 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

Chloride

MW-2 (bg)



n = 20

Slope = -4.251 units per year.

Mann-Kendall statistic = -121 critical = -73

Decreasing trend significant at 98% confidence level (α = 0.01 per tail).

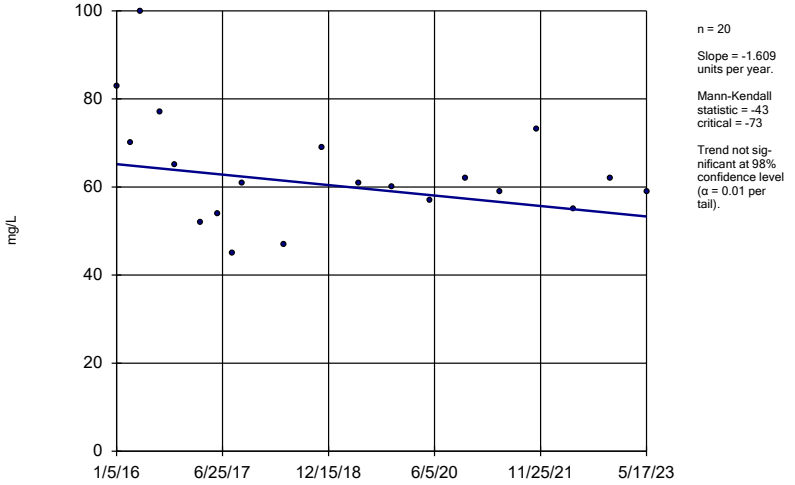
Sen's Slope Estimator Analysis Run 7/3/2024 8:45 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

Sanitas™ v.10.0.19 Software licensed to Jett Environmental Consulting. UG

Chloride

MW-3 (bg)



n = 20

Slope = -1.609 units per year.

Mann-Kendall statistic = -43 critical = -73

Trend not significant at 98% confidence level (α = 0.01 per tail).

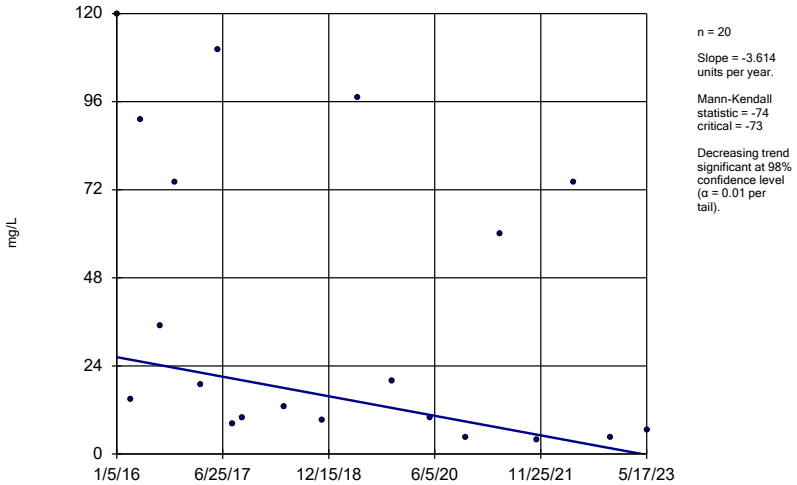
Sen's Slope Estimator Analysis Run 7/3/2024 8:45 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

Sanitas™ v.10.0.19 Software licensed to Jett Environmental Consulting. UG

Chloride

MW-4



n = 20

Slope = -3.614 units per year.

Mann-Kendall statistic = -74 critical = -73

Decreasing trend significant at 98% confidence level (α = 0.01 per tail).

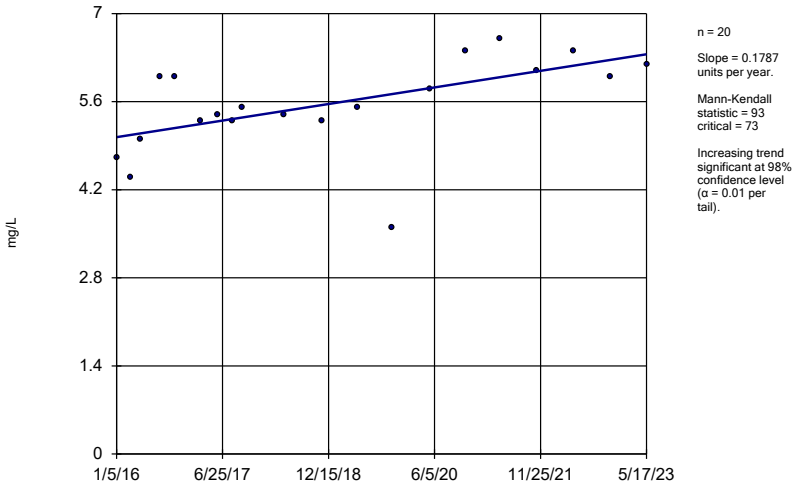
Sen's Slope Estimator Analysis Run 7/3/2024 8:45 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

Sanitas™ v.10.0.19 Software licensed to Jett Environmental Consulting. UG

Chloride

MW-5



n = 20

Slope = 0.1787 units per year.

Mann-Kendall statistic = 93 critical = 73

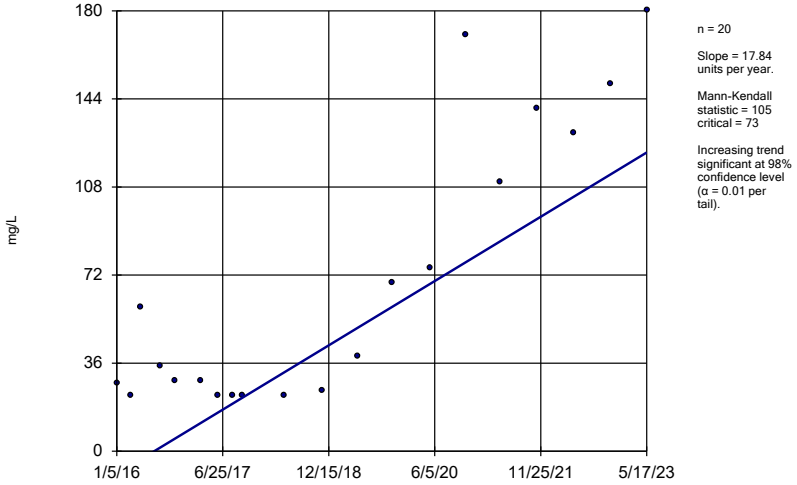
Increasing trend significant at 98% confidence level (α = 0.01 per tail).

Sen's Slope Estimator Analysis Run 7/3/2024 8:45 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

Chloride

MW-5A



n = 20

Slope = 17.84 units per year.

Mann-Kendall statistic = 105 critical = 73

Increasing trend significant at 98% confidence level (α = 0.01 per tail).

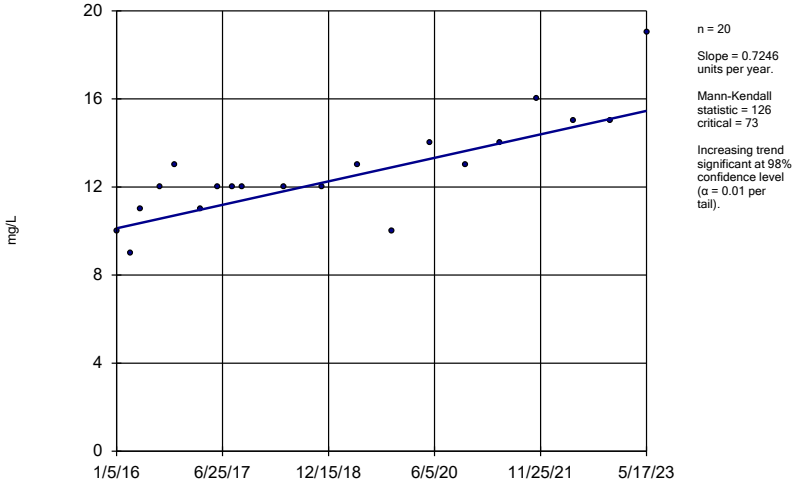
Sen's Slope Estimator Analysis Run 7/3/2024 8:45 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

Sanitas™ v.10.0.19 Software licensed to Jett Environmental Consulting. UG

Chloride

MW-6



n = 20

Slope = 0.7246 units per year.

Mann-Kendall statistic = 126 critical = 73

Increasing trend significant at 98% confidence level (α = 0.01 per tail).

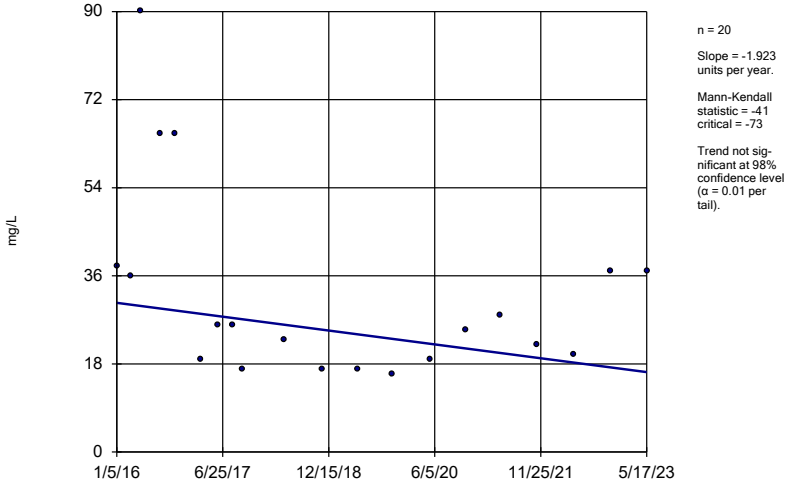
Sen's Slope Estimator Analysis Run 7/3/2024 8:45 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

Sanitas™ v.10.0.19 Software licensed to Jett Environmental Consulting. UG

Chloride

MW-6A



n = 20

Slope = -1.923 units per year.

Mann-Kendall statistic = -41 critical = -73

Trend not sig-nificant at 98% confidence level (α = 0.01 per tail).

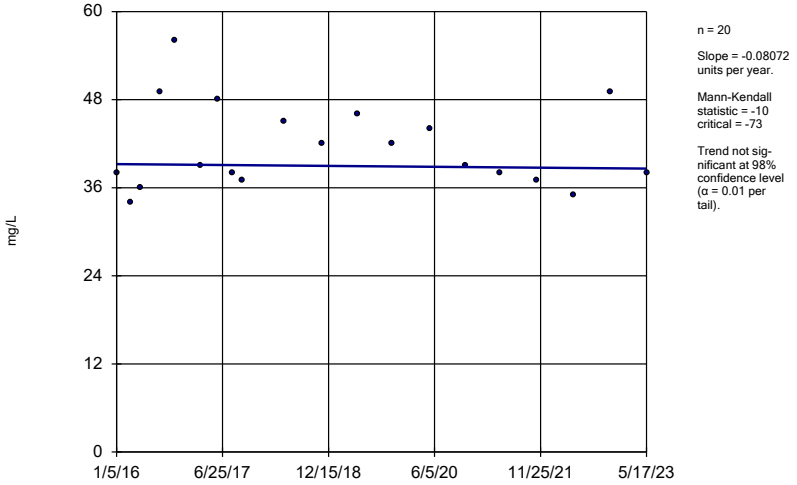
Sen's Slope Estimator Analysis Run 7/3/2024 8:45 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

Sanitas™ v.10.0.19 Software licensed to Jett Environmental Consulting. UG

Chloride

MW-7 (bg)



n = 20

Slope = -0.08072 units per year.

Mann-Kendall statistic = -10 critical = -73

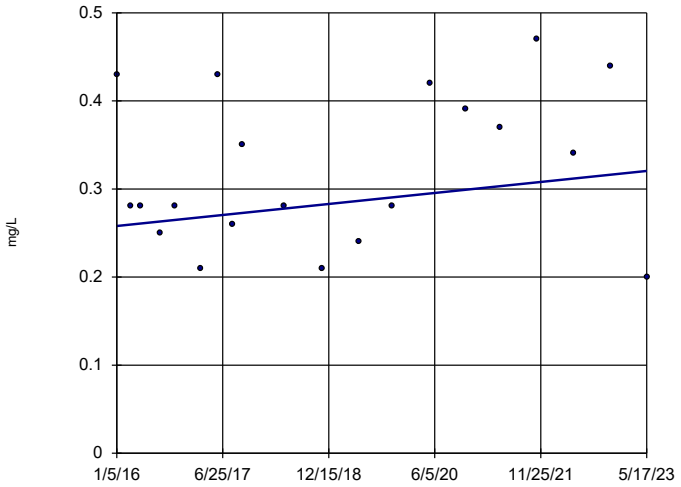
Trend not sig-nificant at 98% confidence level (α = 0.01 per tail).

Sen's Slope Estimator Analysis Run 7/3/2024 8:45 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

Fluoride

MW-2 (bg)



n = 20

Slope = 0.008487 units per year.

Mann-Kendall statistic = 22
critical = 73

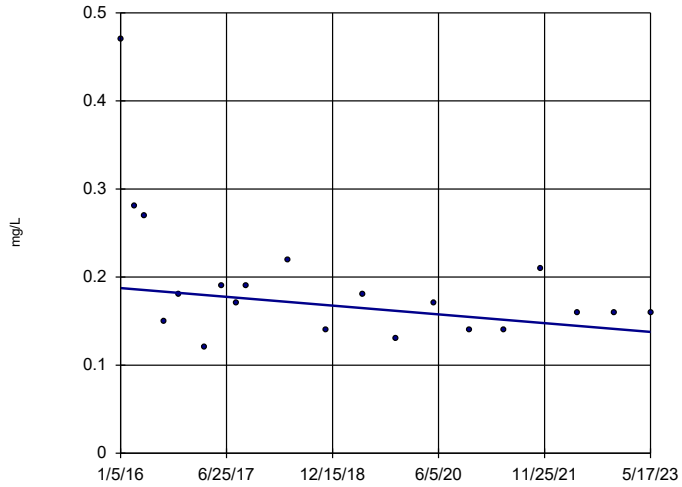
Trend not significant at 98% confidence level (α = 0.01 per tail).

Sen's Slope Estimator Analysis Run 7/3/2024 8:45 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

Fluoride

MW-3 (bg)



n = 20

Slope = -0.006744 units per year.

Mann-Kendall statistic = -61
critical = -73

Trend not significant at 98% confidence level (α = 0.01 per tail).

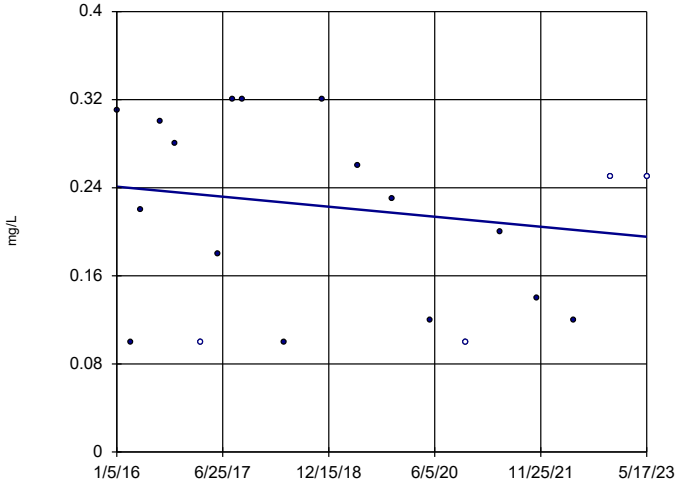
Sen's Slope Estimator Analysis Run 7/3/2024 8:45 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

Hollow symbols indicate censored values.

Fluoride

MW-4



n = 20

Slope = -0.006169 units per year.

Mann-Kendall statistic = -21
critical = -73

Trend not significant at 98% confidence level (α = 0.01 per tail).

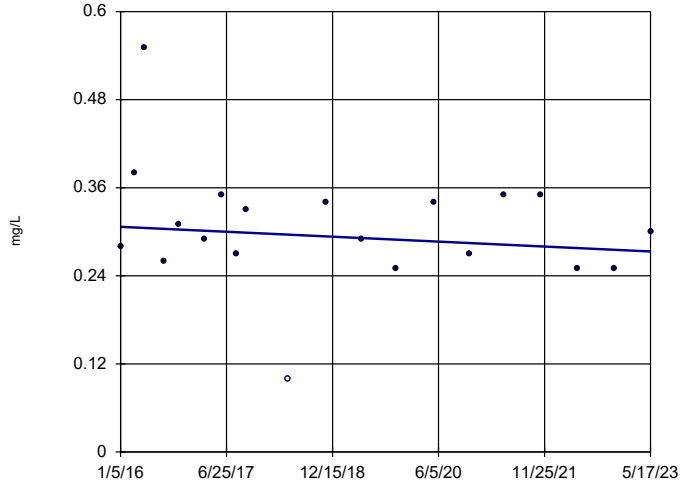
Sen's Slope Estimator Analysis Run 7/3/2024 8:45 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

Hollow symbols indicate censored values.

Fluoride

MW-5



n = 20

Slope = -0.004548 units per year.

Mann-Kendall statistic = -27
critical = -73

Trend not significant at 98% confidence level (α = 0.01 per tail).

Sen's Slope Estimator Analysis Run 7/3/2024 8:45 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

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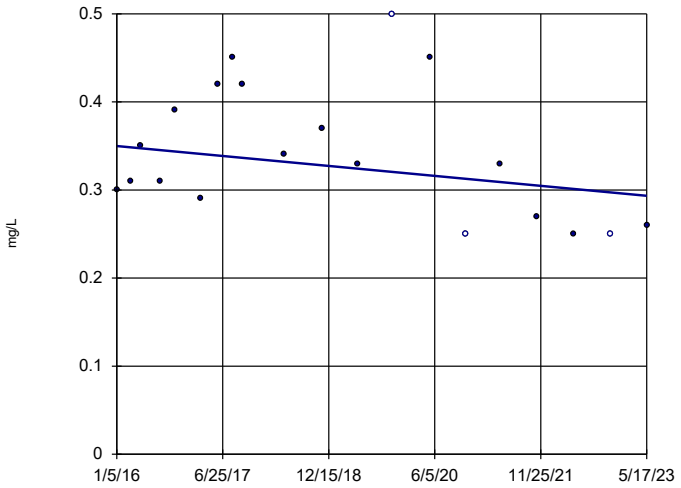
Hollow symbols indicate censored values.

Fluoride

MW-5A



n = 20

Slope = -0.007672 units per year.

Mann-Kendall statistic = -37
critical = -73

Trend not significant at 98% confidence level (α = 0.01 per tail).

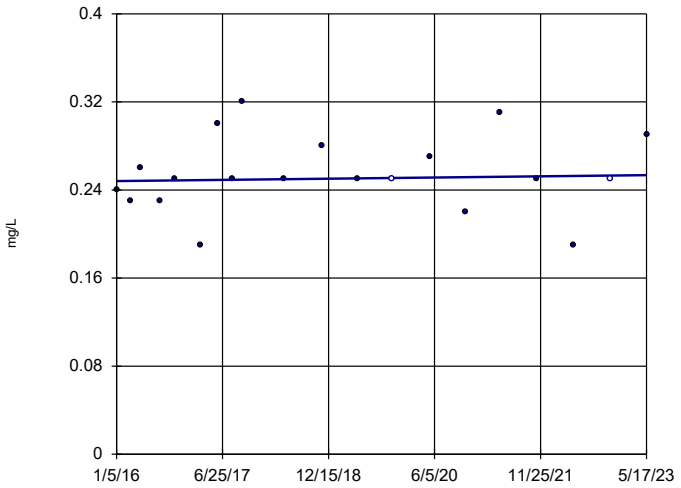
Sen's Slope Estimator Analysis Run 7/3/2024 8:45 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

Sanitas™ v.10.0.19 Software licensed to Jett Environmental Consulting. UG
Hollow symbols indicate censored values.

Fluoride

MW-6



n = 20

Slope = 0.0007283 units per year.

Mann-Kendall statistic = 23
critical = 73

Trend not significant at 98% confidence level (α = 0.01 per tail).

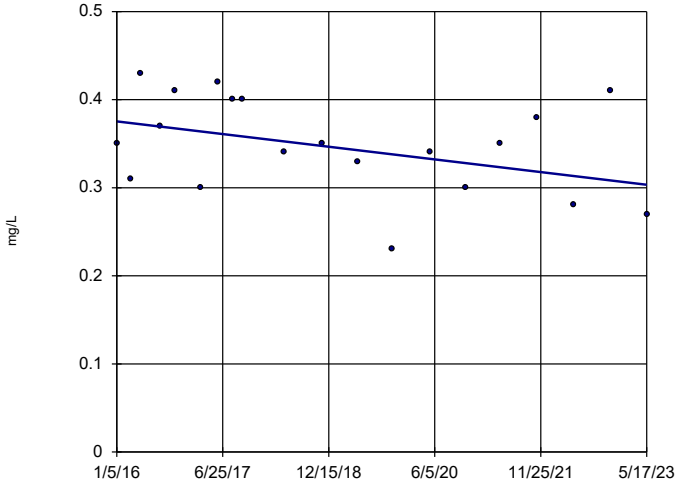
Sen's Slope Estimator Analysis Run 7/3/2024 8:45 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

Sanitas™ v.10.0.19 Software licensed to Jett Environmental Consulting. UG

Fluoride

MW-6A



n = 20

Slope = -0.009747 units per year.

Mann-Kendall statistic = -49
critical = -73

Trend not significant at 98% confidence level (α = 0.01 per tail).

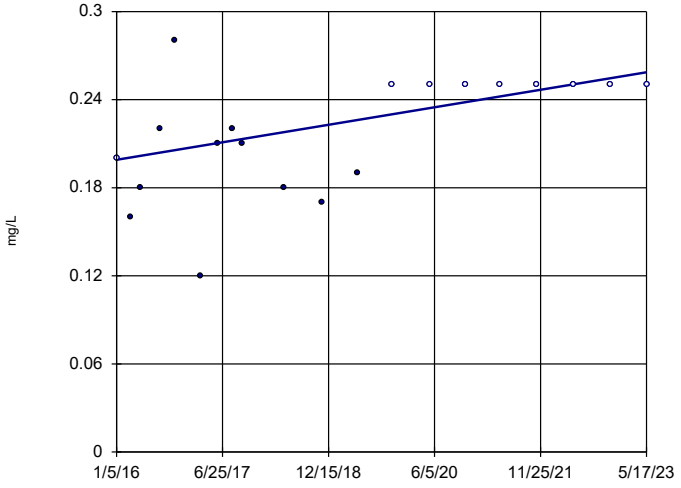
Sen's Slope Estimator Analysis Run 7/3/2024 8:45 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

Sanitas™ v.10.0.19 Software licensed to Jett Environmental Consulting. UG
Hollow symbols indicate censored values.

Fluoride

MW-7 (bg)



n = 20

Slope = 0.008083 units per year.

Mann-Kendall statistic = 77
critical = 73

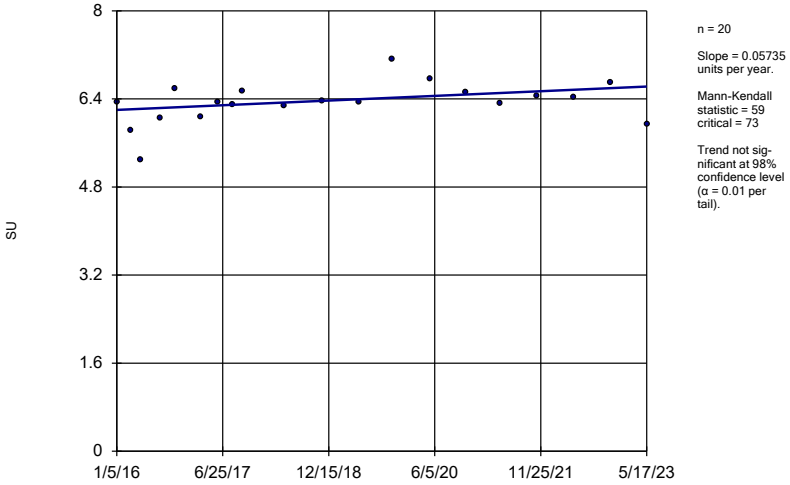
Increasing trend significant at 98% confidence level (α = 0.01 per tail).

Sen's Slope Estimator Analysis Run 7/3/2024 8:45 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

pH

MW-2 (bg)



n = 20

Slope = 0.05735 units per year.

Mann-Kendall statistic = 59 critical = 73

Trend not significant at 98% confidence level (α = 0.01 per tail).

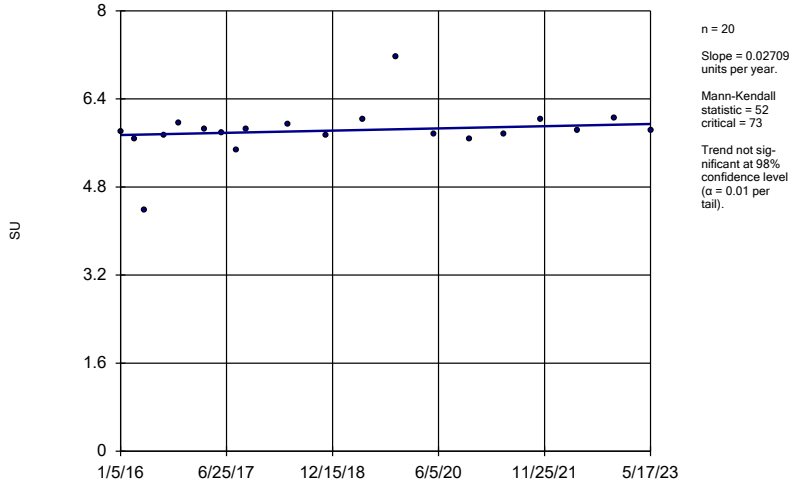
Sen's Slope Estimator Analysis Run 7/3/2024 8:45 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

Sanitas™ v.10.0.19 Software licensed to Jett Environmental Consulting. UG

pH

MW-3 (bg)



n = 20

Slope = 0.02709 units per year.

Mann-Kendall statistic = 52 critical = 73

Trend not significant at 98% confidence level (α = 0.01 per tail).

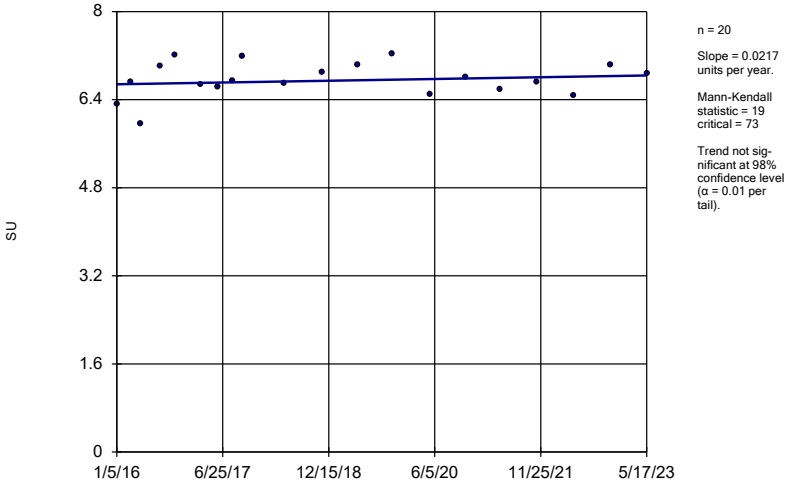
Sen's Slope Estimator Analysis Run 7/3/2024 8:46 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

Sanitas™ v.10.0.19 Software licensed to Jett Environmental Consulting. UG

pH

MW-4



n = 20

Slope = 0.0217 units per year.

Mann-Kendall statistic = 19 critical = 73

Trend not significant at 98% confidence level (α = 0.01 per tail).

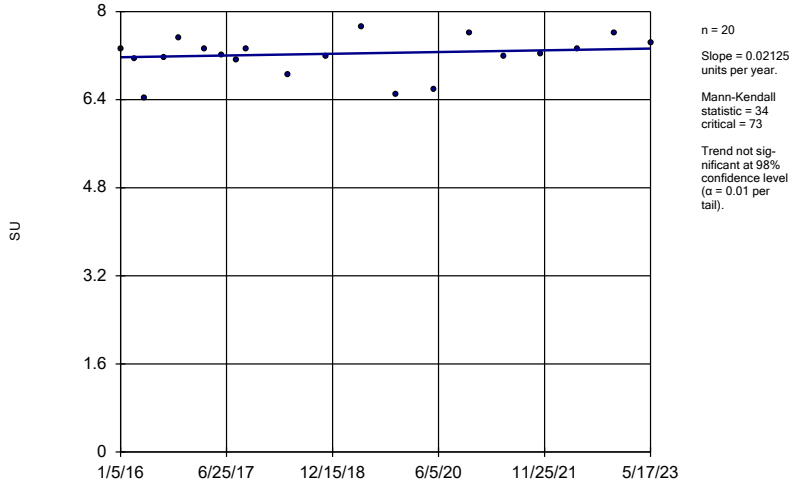
Sen's Slope Estimator Analysis Run 7/3/2024 8:46 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

Sanitas™ v.10.0.19 Software licensed to Jett Environmental Consulting. UG

pH

MW-5



n = 20

Slope = 0.02125 units per year.

Mann-Kendall statistic = 34 critical = 73

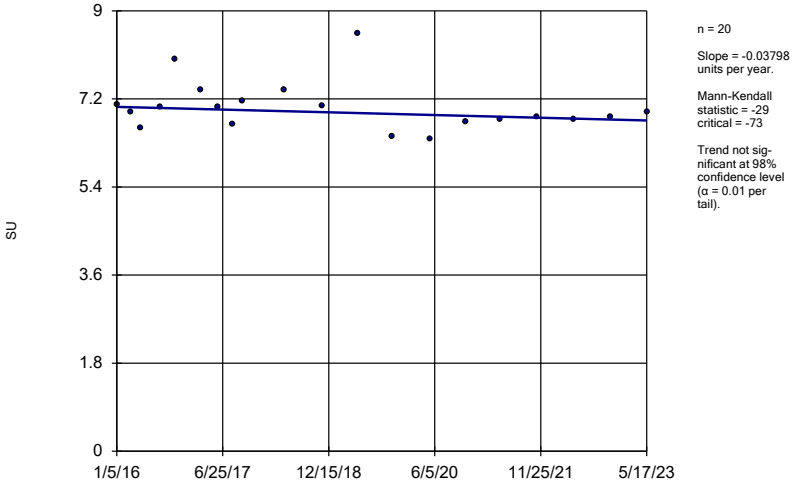
Trend not significant at 98% confidence level (α = 0.01 per tail).

Sen's Slope Estimator Analysis Run 7/3/2024 8:46 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

pH

MW-5A



n = 20

Slope = -0.03798 units per year.

Mann-Kendall statistic = -29 critical = -73

Trend not significant at 98% confidence level (α = 0.01 per tail).

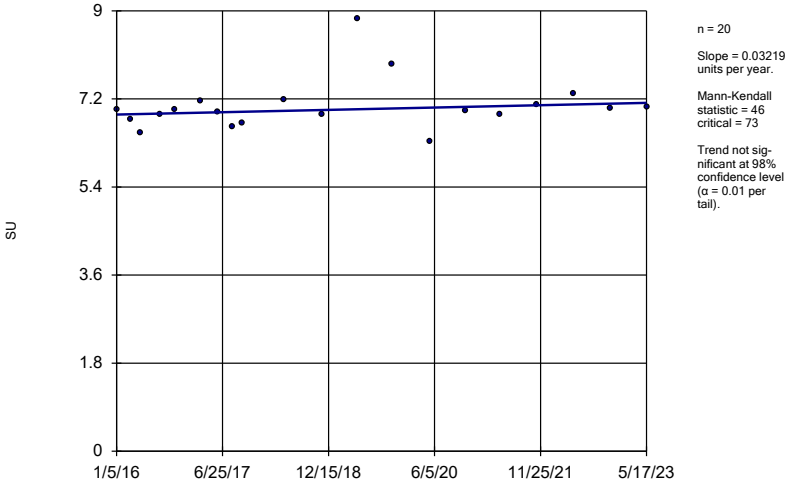
Sen's Slope Estimator Analysis Run 7/3/2024 8:46 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

Sanitas™ v.10.0.19 Software licensed to Jett Environmental Consulting. UG

pH

MW-6



n = 20

Slope = 0.03219 units per year.

Mann-Kendall statistic = 46 critical = 73

Trend not significant at 98% confidence level (α = 0.01 per tail).

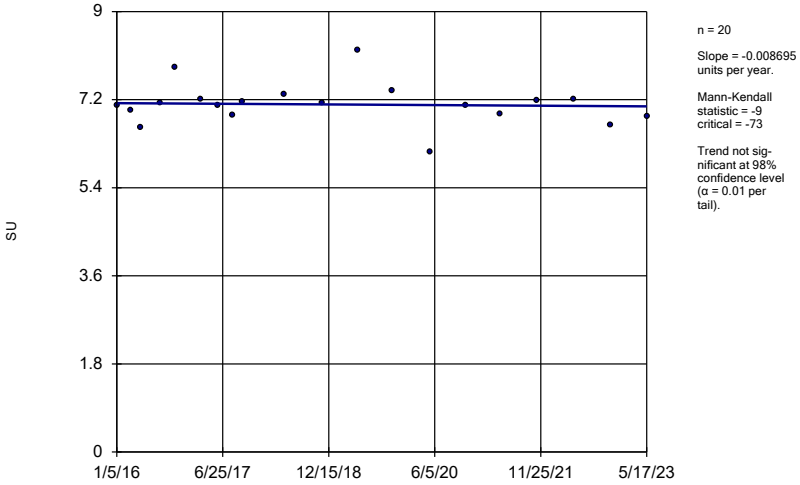
Sen's Slope Estimator Analysis Run 7/3/2024 8:46 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

Sanitas™ v.10.0.19 Software licensed to Jett Environmental Consulting. UG

pH

MW-6A



n = 20

Slope = -0.008695 units per year.

Mann-Kendall statistic = -9 critical = -73

Trend not significant at 98% confidence level (α = 0.01 per tail).

Sen's Slope Estimator Analysis Run 7/3/2024 8:46 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

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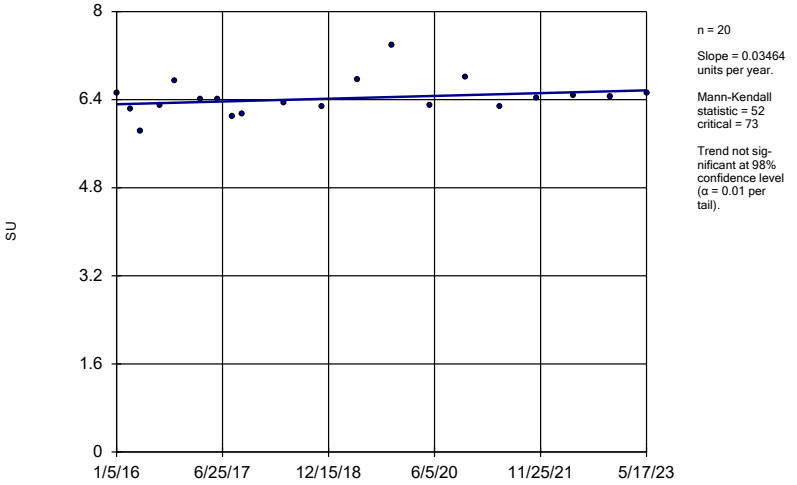
pH

MW-7 (bg)



n = 20

Slope = 0.03464 units per year.

Mann-Kendall statistic = 52 critical = 73

Trend not significant at 98% confidence level (α = 0.01 per tail).

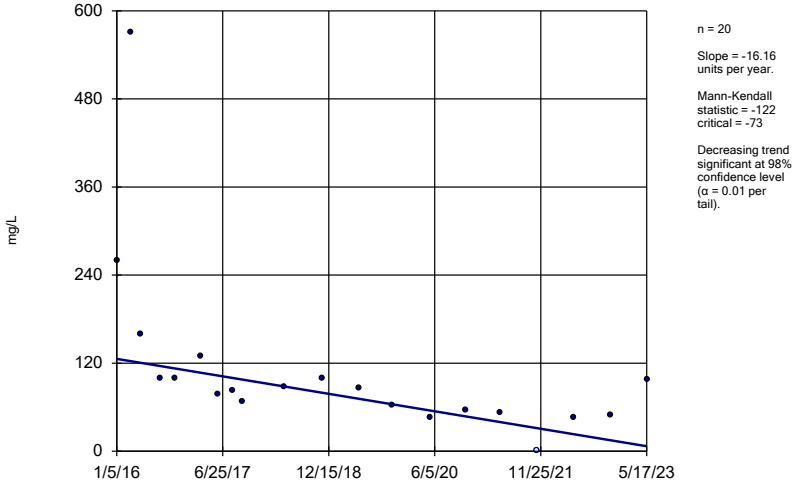
Sen's Slope Estimator Analysis Run 7/3/2024 8:46 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

Hollow symbols indicate censored values.

Sulfate

MW-2 (bg)



n = 20

Slope = -16.16 units per year.

Mann-Kendall statistic = -122 critical = -73

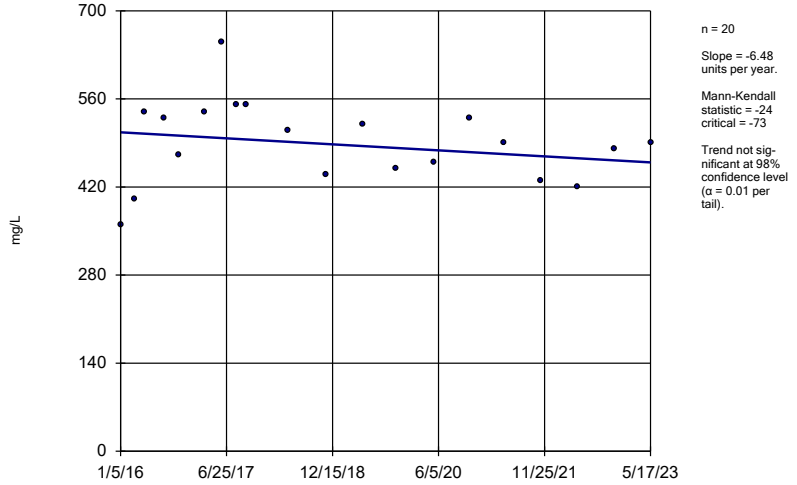
Decreasing trend significant at 98% confidence level (α = 0.01 per tail).

Sen's Slope Estimator Analysis Run 7/3/2024 8:46 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

Sulfate

MW-3 (bg)



n = 20

Slope = -6.48 units per year.

Mann-Kendall statistic = -24 critical = -73

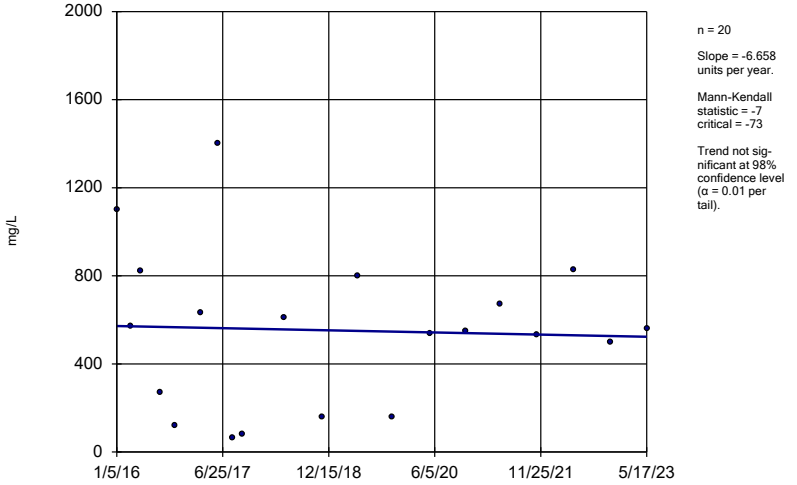
Trend not significant at 98% confidence level (α = 0.01 per tail).

Sen's Slope Estimator Analysis Run 7/3/2024 8:46 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

Sulfate

MW-4



n = 20

Slope = -6.658 units per year.

Mann-Kendall statistic = -7 critical = -73

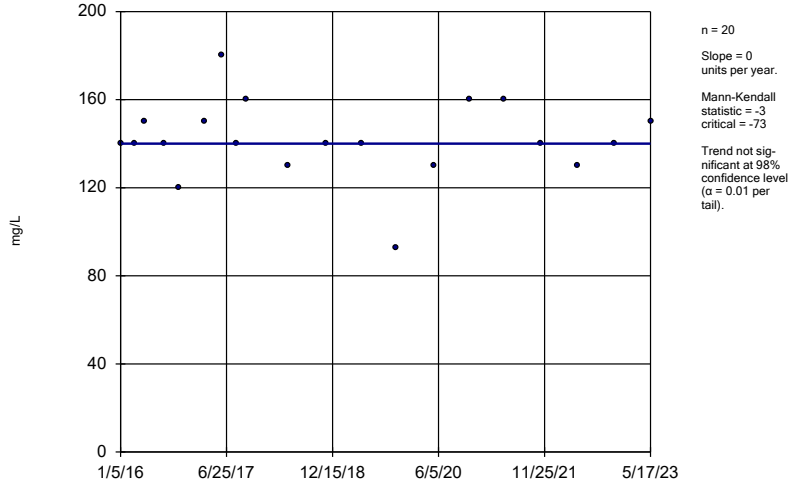
Trend not significant at 98% confidence level (α = 0.01 per tail).

Sen's Slope Estimator Analysis Run 7/3/2024 8:46 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

Sulfate

MW-5



n = 20

Slope = 0 units per year.

Mann-Kendall statistic = -3 critical = -73

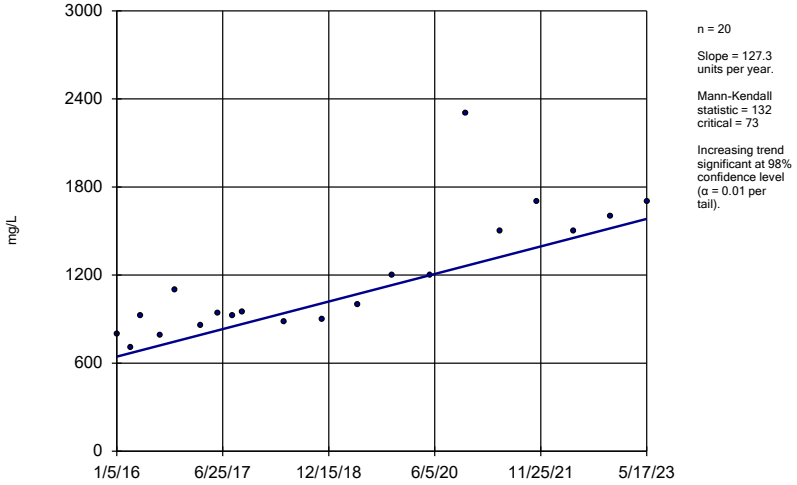
Trend not significant at 98% confidence level (α = 0.01 per tail).

Sen's Slope Estimator Analysis Run 7/3/2024 8:46 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

Sulfate

MW-5A



n = 20

Slope = 127.3 units per year.

Mann-Kendall statistic = 132
critical = 73

Increasing trend significant at 98% confidence level (α = 0.01 per tail).

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Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

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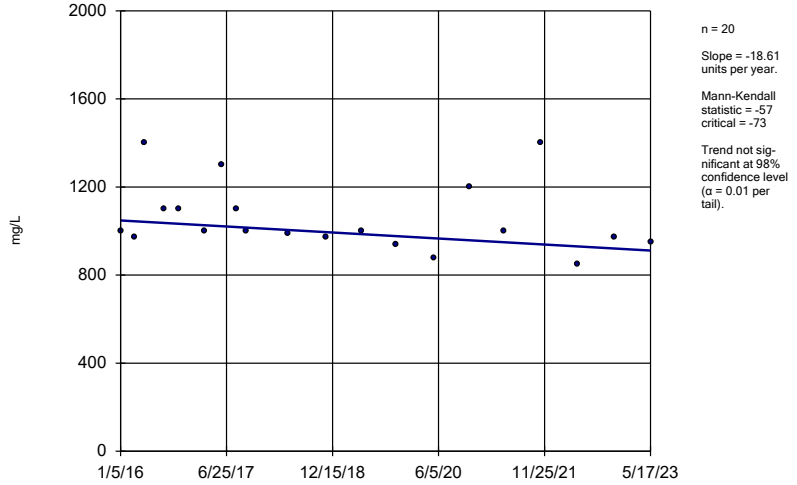
Sulfate

MW-6



n = 20

Slope = -18.61 units per year.

Mann-Kendall statistic = -57
critical = -73

Trend not significant at 98% confidence level (α = 0.01 per tail).

Sen's Slope Estimator Analysis Run 7/3/2024 8:46 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

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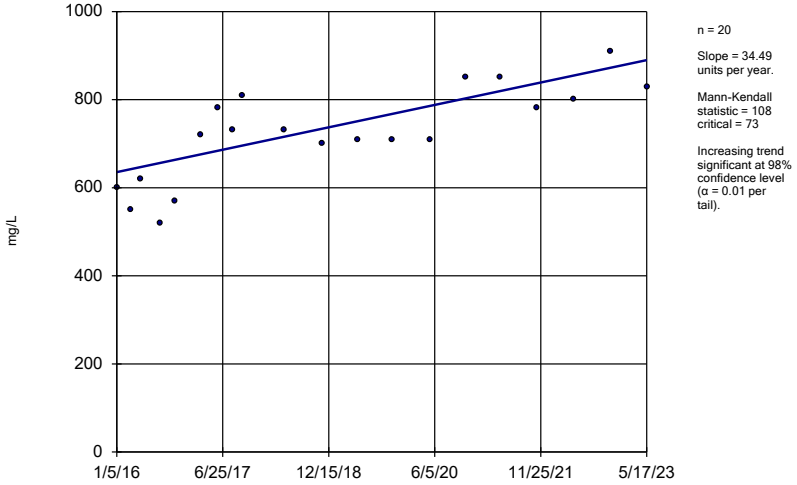
Sulfate

MW-6A



n = 20

Slope = 34.49 units per year.

Mann-Kendall statistic = 108
critical = 73

Increasing trend significant at 98% confidence level (α = 0.01 per tail).

Sen's Slope Estimator Analysis Run 7/3/2024 8:46 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

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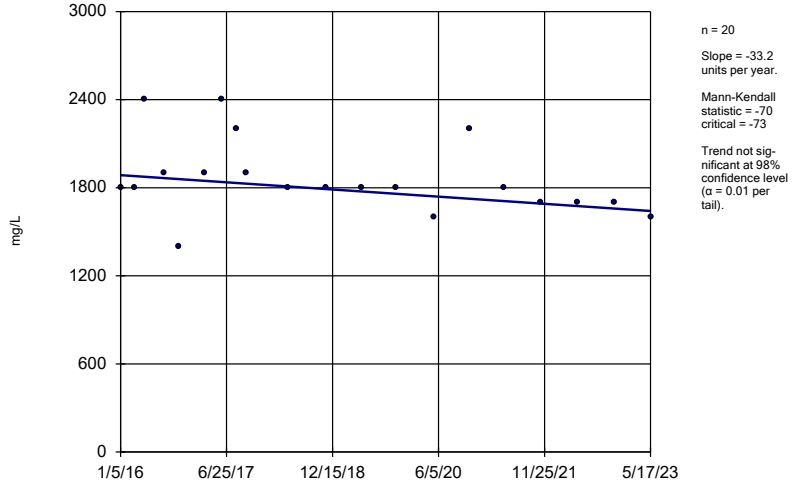
Sulfate

MW-7 (bg)



n = 20

Slope = -33.2 units per year.

Mann-Kendall statistic = -70
critical = -73

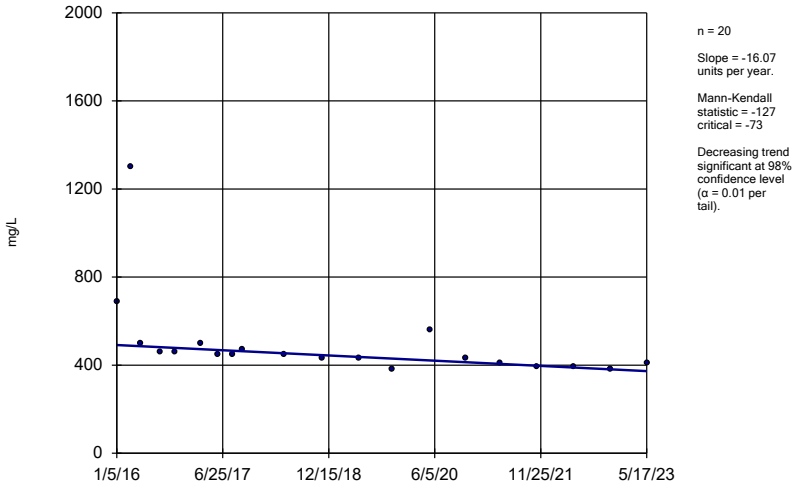
Trend not significant at 98% confidence level (α = 0.01 per tail).

Sen's Slope Estimator Analysis Run 7/3/2024 8:46 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

Total Dissolved Solids

MW-2 (bg)



n = 20

Slope = -16.07 units per year.

Mann-Kendall statistic = -127 critical = -73

Decreasing trend significant at 98% confidence level (α = 0.01 per tail).

Sen's Slope Estimator Analysis Run 7/3/2024 8:46 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

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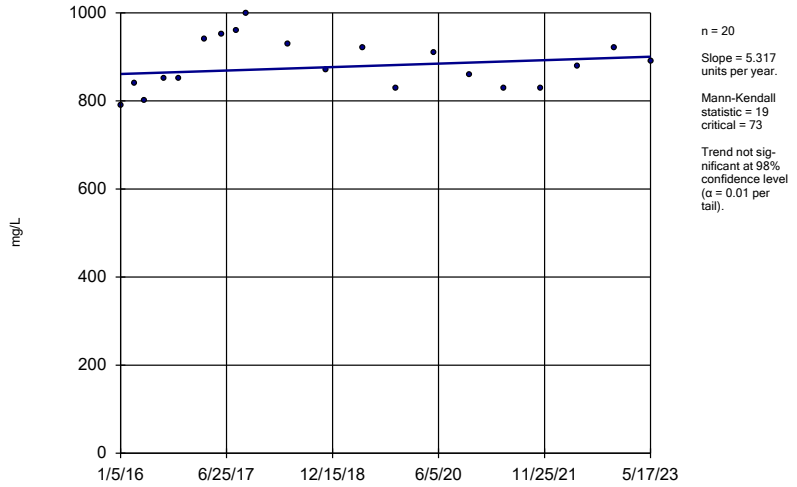
Total Dissolved Solids

MW-3 (bg)



n = 20

Slope = 5.317 units per year.

Mann-Kendall statistic = 19 critical = 73

Trend not significant at 98% confidence level (α = 0.01 per tail).

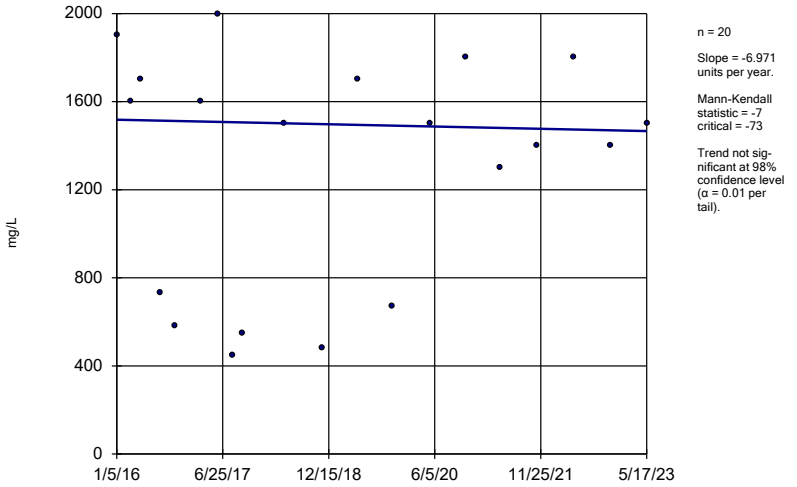
Sen's Slope Estimator Analysis Run 7/3/2024 8:46 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

Sanitas™ v.10.0.19 Software licensed to Jett Environmental Consulting. UG

Total Dissolved Solids

MW-4



n = 20

Slope = -6.971 units per year.

Mann-Kendall statistic = -7 critical = -73

Trend not significant at 98% confidence level (α = 0.01 per tail).

Sen's Slope Estimator Analysis Run 7/3/2024 8:46 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

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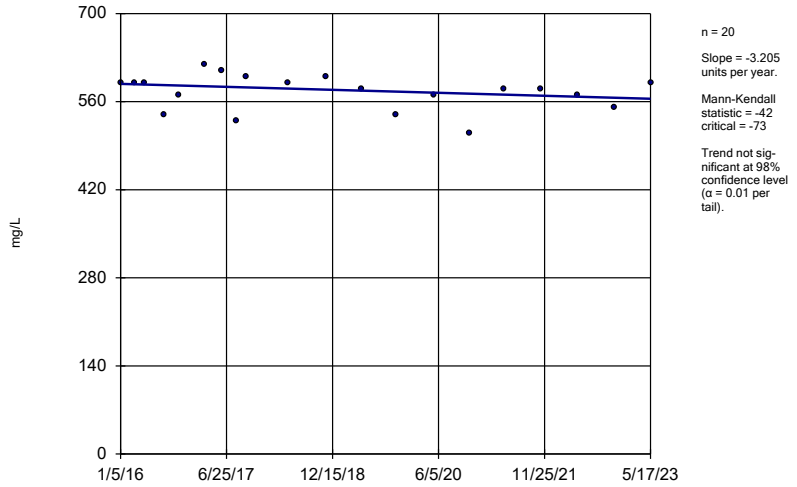
Total Dissolved Solids

MW-5



n = 20

Slope = -3.205 units per year.

Mann-Kendall statistic = -42 critical = -73

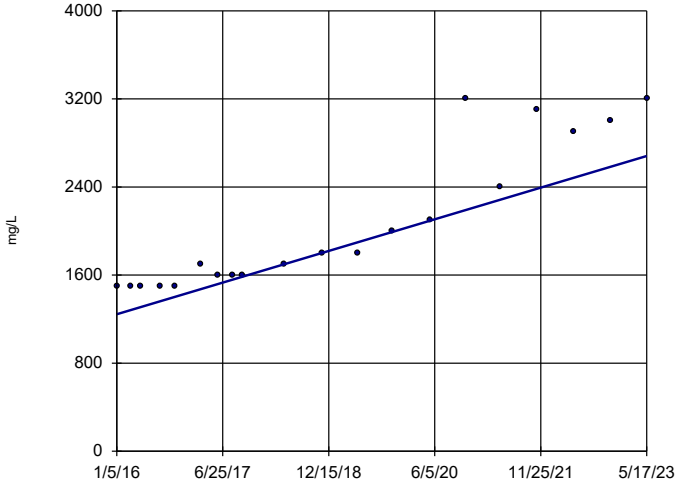
Trend not significant at 98% confidence level (α = 0.01 per tail).

Sen's Slope Estimator Analysis Run 7/3/2024 8:46 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

Total Dissolved Solids

MW-5A



n = 20

Slope = 195.1 units per year.

Mann-Kendall statistic = 156 critical = 73

Increasing trend significant at 98% confidence level (α = 0.01 per tail).

Sen's Slope Estimator Analysis Run 7/3/2024 8:46 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

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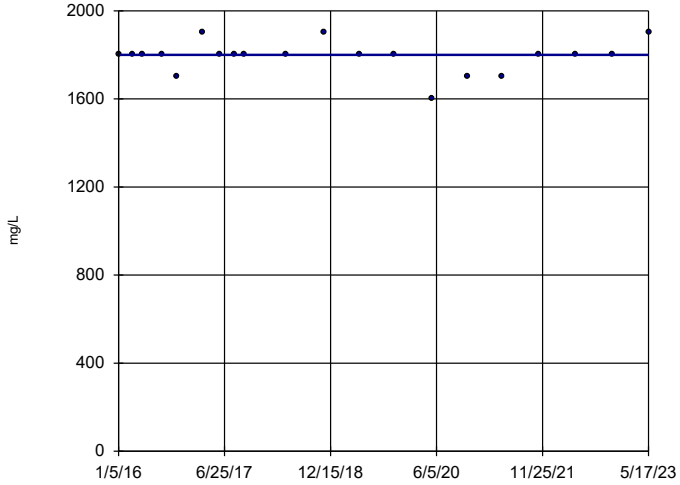
Total Dissolved Solids

MW-6



n = 20

Slope = 0 units per year.

Mann-Kendall statistic = -4 critical = -73

Trend not significant at 98% confidence level (α = 0.01 per tail).

Sen's Slope Estimator Analysis Run 7/3/2024 8:46 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

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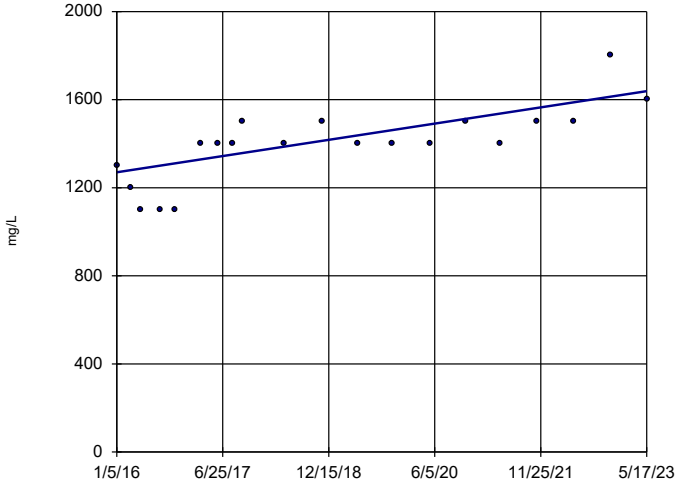
Total Dissolved Solids

MW-6A



n = 20

Slope = 50.05 units per year.

Mann-Kendall statistic = 113 critical = 73

Increasing trend significant at 98% confidence level (α = 0.01 per tail).

Sen's Slope Estimator Analysis Run 7/3/2024 8:46 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

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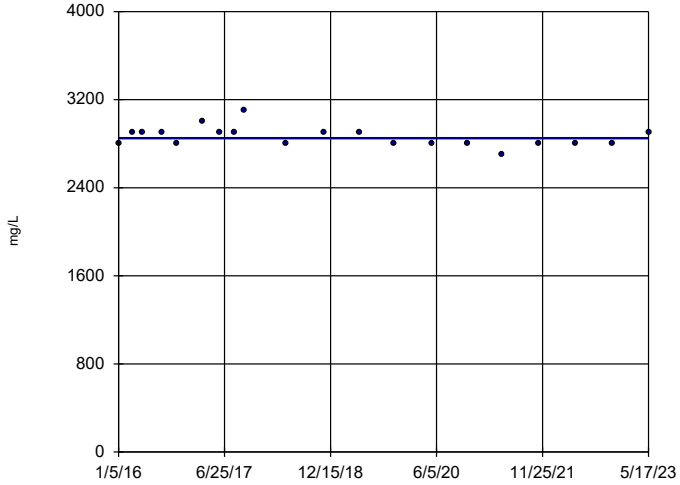
Total Dissolved Solids

MW-7 (bg)



n = 20

Slope = 0 units per year.

Mann-Kendall statistic = -48 critical = -73

Trend not significant at 98% confidence level (α = 0.01 per tail).

Sen's Slope Estimator Analysis Run 7/3/2024 8:46 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

ATTACHMENT 3

INTER-WELL PREDICTION LIMITS

Prediction Limit

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant Printed 7/3/2024, 8:53 AM

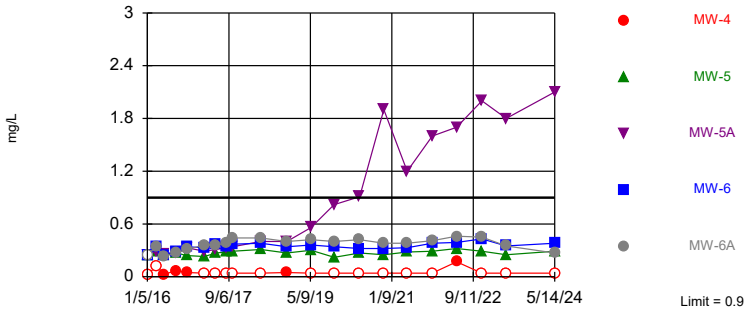
Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Boron (mg/L)	MW-4	0.9	n/a	5/14/2024	0.04ND	No	63	n/a	n/a	20.63	n/a	n/a	0.0004826	NP Inter (normality) 1 of 2
Boron (mg/L)	MW-5	0.9	n/a	5/14/2024	0.29	No	63	n/a	n/a	20.63	n/a	n/a	0.0004826	NP Inter (normality) 1 of 2
Boron (mg/L)	**MW-5A**	**0.9**	**n/a**	**5/14/2024**	**2.1**	**Yes**	**63**	**n/a**	**n/a**	**20.63**	**n/a**	**n/a**	**0.0004826**	**NP Inter (normality) 1 of 2**
Boron (mg/L)	MW-6	0.9	n/a	5/14/2024	0.38	No	63	n/a	n/a	20.63	n/a	n/a	0.0004826	NP Inter (normality) 1 of 2
Boron (mg/L)	MW-6A	0.9	n/a	5/14/2024	0.27	No	63	n/a	n/a	20.63	n/a	n/a	0.0004826	NP Inter (normality) 1 of 2
Calcium (mg/L)	MW-4	620	n/a	5/14/2024	220	No	63	n/a	n/a	0	n/a	n/a	0.0004826	NP Inter (normality) 1 of 2
Calcium (mg/L)	MW-5	620	n/a	5/14/2024	89	No	63	n/a	n/a	0	n/a	n/a	0.0004826	NP Inter (normality) 1 of 2
Calcium (mg/L)	MW-5A	620	n/a	5/14/2024	430	No	63	n/a	n/a	0	n/a	n/a	0.0004826	NP Inter (normality) 1 of 2
Calcium (mg/L)	MW-6	620	n/a	5/14/2024	270	No	63	n/a	n/a	0	n/a	n/a	0.0004826	NP Inter (normality) 1 of 2
Calcium (mg/L)	MW-6A	620	n/a	5/14/2024	180	No	63	n/a	n/a	0	n/a	n/a	0.0004826	NP Inter (normality) 1 of 2
Chloride (mg/L)	MW-4	180	n/a	5/14/2024	19	No	63	n/a	n/a	0	n/a	n/a	0.0004826	NP Inter (normality) 1 of 2
Chloride (mg/L)	MW-5	180	n/a	5/14/2024	5.8	No	63	n/a	n/a	0	n/a	n/a	0.0004826	NP Inter (normality) 1 of 2
Chloride (mg/L)	MW-5A	180	n/a	5/14/2024	170	No	63	n/a	n/a	0	n/a	n/a	0.0004826	NP Inter (normality) 1 of 2
Chloride (mg/L)	MW-6	180	n/a	5/14/2024	32	No	63	n/a	n/a	0	n/a	n/a	0.0004826	NP Inter (normality) 1 of 2
Chloride (mg/L)	MW-6A	180	n/a	5/14/2024	63	No	63	n/a	n/a	0	n/a	n/a	0.0004826	NP Inter (normality) 1 of 2
Fluoride (mg/L)	MW-4	0.4305	n/a	5/14/2024	0.11	No	63	-1.6	0.4118	14.29	None	ln(x)	0.001504	Param Inter 1 of 2
Fluoride (mg/L)	MW-5	0.4305	n/a	5/14/2024	0.3	No	63	-1.6	0.4118	14.29	None	ln(x)	0.001504	Param Inter 1 of 2
Fluoride (mg/L)	MW-5A	0.4305	n/a	5/14/2024	0.21	No	63	-1.6	0.4118	14.29	None	ln(x)	0.001504	Param Inter 1 of 2
Fluoride (mg/L)	MW-6	0.4305	n/a	5/14/2024	0.22	No	63	-1.6	0.4118	14.29	None	ln(x)	0.001504	Param Inter 1 of 2
Fluoride (mg/L)	MW-6A	0.4305	n/a	5/14/2024	0.16	No	63	-1.6	0.4118	14.29	None	ln(x)	0.001504	Param Inter 1 of 2
pH (SU)	MW-4	7.39	4.37	5/14/2024	7	No	63	n/a	n/a	0	n/a	n/a	0.0009652	NP Inter (normality) 1 of 2
pH (SU)	MW-5	7.39	4.37	5/14/2024	7.17	No	63	n/a	n/a	0	n/a	n/a	0.0009652	NP Inter (normality) 1 of 2
pH (SU)	MW-5A	7.39	4.37	5/14/2024	6.78	No	63	n/a	n/a	0	n/a	n/a	0.0009652	NP Inter (normality) 1 of 2
pH (SU)	MW-6	7.39	4.37	5/14/2024	6.93	No	63	n/a	n/a	0	n/a	n/a	0.0009652	NP Inter (normality) 1 of 2
pH (SU)	MW-6A	7.39	4.37	5/14/2024	6.51	No	63	n/a	n/a	0	n/a	n/a	0.0009652	NP Inter (normality) 1 of 2
Sulfate (mg/L)	MW-4	2400	n/a	5/14/2024	560	No	63	n/a	n/a	1.587	n/a	n/a	0.0004826	NP Inter (normality) 1 of 2
Sulfate (mg/L)	MW-5	2400	n/a	5/14/2024	150	No	63	n/a	n/a	1.587	n/a	n/a	0.0004826	NP Inter (normality) 1 of 2
Sulfate (mg/L)	MW-5A	2400	n/a	5/14/2024	1900	No	63	n/a	n/a	1.587	n/a	n/a	0.0004826	NP Inter (normality) 1 of 2
Sulfate (mg/L)	MW-6	2400	n/a	5/14/2024	1100	No	63	n/a	n/a	1.587	n/a	n/a	0.0004826	NP Inter (normality) 1 of 2
Sulfate (mg/L)	MW-6A	2400	n/a	5/14/2024	950	No	63	n/a	n/a	1.587	n/a	n/a	0.0004826	NP Inter (normality) 1 of 2
Total Dissolved Solids (mg/L)	MW-4	3100	n/a	5/14/2024	1300	No	63	n/a	n/a	0	n/a	n/a	0.0004826	NP Inter (normality) 1 of 2
Total Dissolved Solids (mg/L)	MW-5	3100	n/a	5/14/2024	570	No	63	n/a	n/a	0	n/a	n/a	0.0004826	NP Inter (normality) 1 of 2
Total Dissolved Solids (mg/L)	**MW-5A**	**3100**	**n/a**	**5/14/2024**	**3200**	**Yes**	**63**	**n/a**	**n/a**	**0**	**n/a**	**n/a**	**0.0004826**	**NP Inter (normality) 1 of 2**
Total Dissolved Solids (mg/L)	MW-6	3100	n/a	5/14/2024	1900	No	63	n/a	n/a	0	n/a	n/a	0.0004826	NP Inter (normality) 1 of 2
Total Dissolved Solids (mg/L)	MW-6A	3100	n/a	5/14/2024	1700	No	63	n/a	n/a	0	n/a	n/a	0.0004826	NP Inter (normality) 1 of 2

Hollow symbols indicate censored values.

Exceeds Limit: MW-5A

Boron

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 63 background values. 20.63% NDs. Annual per-constituent alpha = 0.004816. Individual comparison alpha = 0.0004826 (1 of 2). Comparing 5 points to limit. Seasonality was not detected with 95% confidence.

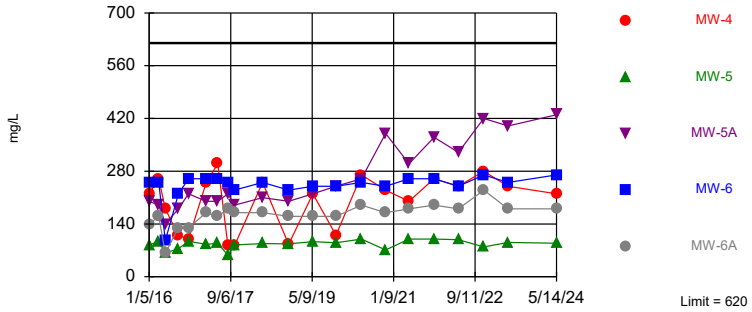
Prediction Limit Analysis Run 7/3/2024 8:52 AM View: Inter-Well PLs

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

Within Limit

Calcium

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 63 background values. Annual per-constituent alpha = 0.004816. Individual comparison alpha = 0.0004826 (1 of 2). Comparing 5 points to limit. Seasonality was not detected with 95% confidence.

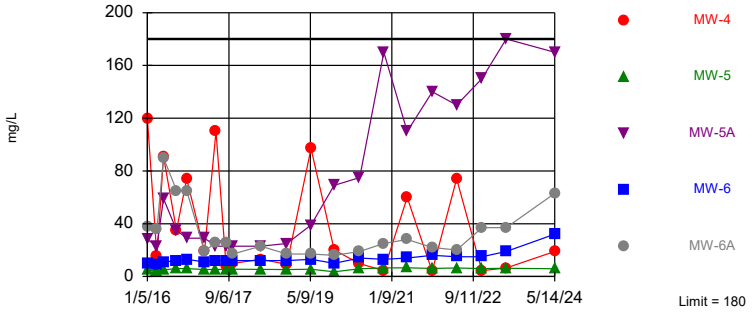
Prediction Limit Analysis Run 7/3/2024 8:52 AM View: Inter-Well PLs

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

Within Limit

Chloride

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 63 background values. Annual per-constituent alpha = 0.004816. Individual comparison alpha = 0.0004826 (1 of 2). Comparing 5 points to limit. Seasonality was not detected with 95% confidence.

Prediction Limit Analysis Run 7/3/2024 8:52 AM View: Inter-Well PLs

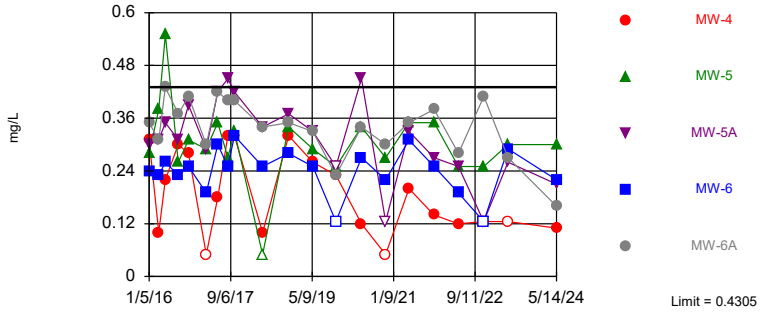
Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

Hollow symbols indicate censored values.

Within Limit

Fluoride

Interwell Parametric



Background Data Summary (based on natural log transformation): Mean=-1.6, Std. Dev.=0.4118, n=63, 14.29% NDs. Seasonality was not detected with 95% confidence. Normality test: Shapiro Francia @alpha = 0.01, calculated = 0.9547, critical = 0.947. Kappa = 1.838 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.001504. Comparing 5 points to limit.

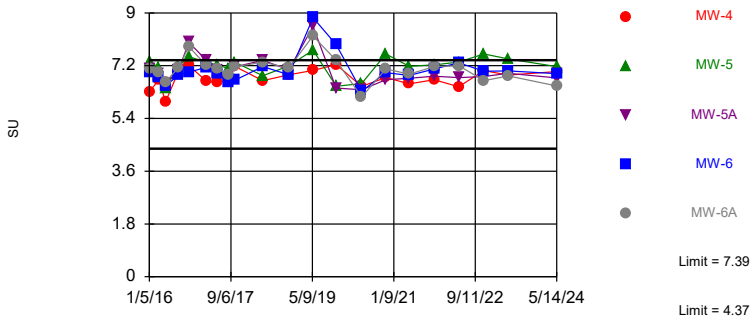
Prediction Limit Analysis Run 7/3/2024 8:52 AM View: Inter-Well PLs

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

Within Limits

pH

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limits are highest and lowest of 63 background values. Annual per-constituent alpha = 0.009631. Individual comparison alpha = 0.0009652 (1 of 2). Comparing 5 points to limit. Seasonality was not detected with 95% confidence.

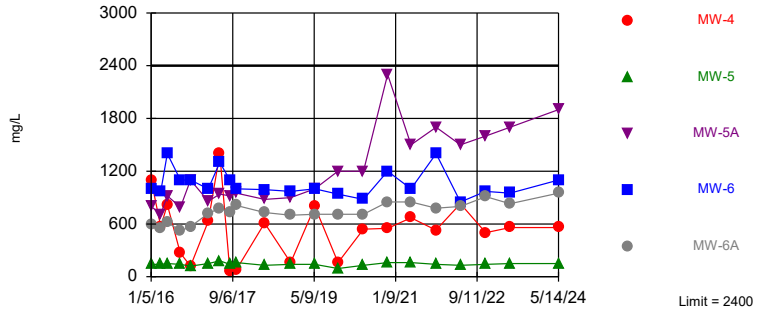
Prediction Limit Analysis Run 7/3/2024 8:52 AM View: Inter-Well PLs

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

Within Limit

Sulfate

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 63 background values. 1.587% NDs. Annual per-constituent alpha = 0.004816. Individual comparison alpha = 0.0004826 (1 of 2). Comparing 5 points to limit. Seasonality was not detected with 95% confidence.

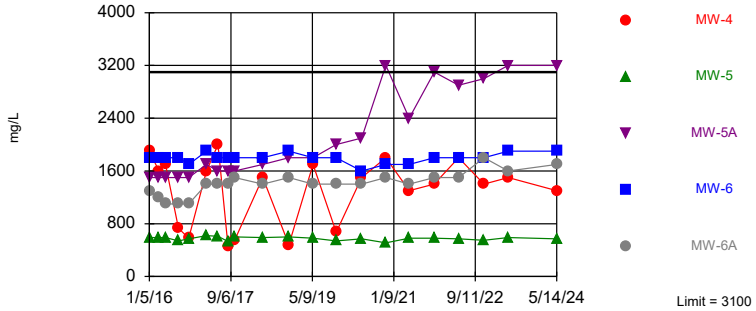
Prediction Limit Analysis Run 7/3/2024 8:52 AM View: Inter-Well PLs

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

Exceeds Limit: MW-5A

Total Dissolved Solids

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 63 background values. Annual per-constituent alpha = 0.004816. Individual comparison alpha = 0.0004826 (1 of 2). Comparing 5 points to limit. Seasonality was not detected with 95% confidence.

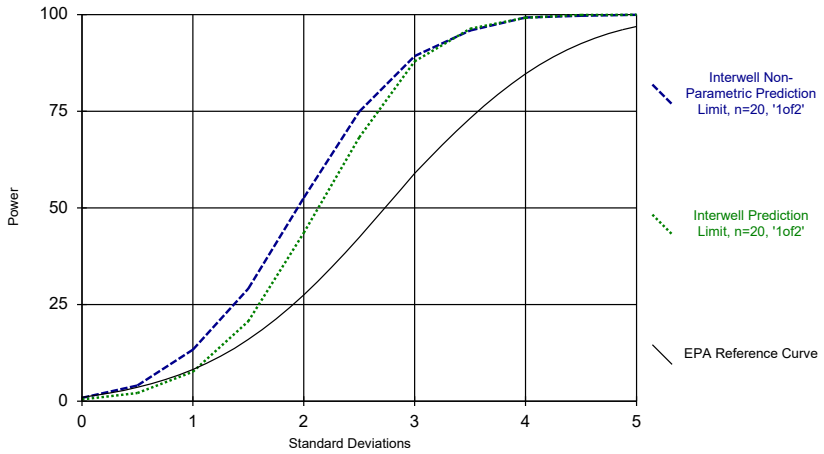
Prediction Limit Analysis Run 7/3/2024 8:52 AM View: Inter-Well PLs

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

ATTACHMENT 4

STATISTICAL POWER CURVES

Power Curve



Analysis Run 7/3/2024 9:40 AM View: Inter-Well PLs

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

APPENDIX B

November 2024 Sampling Event

Groundwater Monitoring, Sampling & Statistics Per EPA CCR Rule (CFR § 257.90-257.98)

November 2024 Sampling Event

Asbury Power Plant CCR Impoundment
Jasper County, MO

January 2025

Prepared For:
The Empire District Electric Company
602 S. Joplin Avenue
Joplin, Missouri 64801

Midwest Environmental CONSULTANTS

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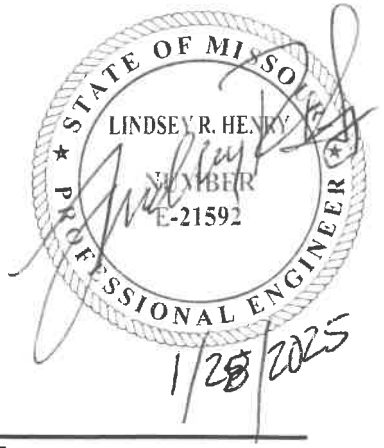


1.0 INTRODUCTION

The EPA Coal Combustion Residual Regulations (40 CFR Part 257) (CCR Rule) require groundwater monitoring of CCR impoundments. This Asbury Power Plant CCR impoundment groundwater monitoring sampling report is in accordance with the EPA CCR Rule. In accordance with the EPA CCR Rule (§ 257.90-.98) the status of the Groundwater Monitoring was placed on-line October 17, 2017, as required by the EPA CCR rule. Empire notified the Missouri Department of Natural Resources (MDNR) "State Director" via e-mail when this document was posted on-line, as required in the CCR rule.

The EPA CCR Rule requires the annual groundwater report to be prepared by January 31st of the following year. The first report was due January 31, 2018. This report was prepared in general accordance with the EPA CCR Rule for groundwater requirements. These regulations outline groundwater monitoring requirements and data evaluation methods. The annual groundwater report for the 2024 sampling events will be posted on-line within 30 days of placement in the operating record and the State Director will be notified.

A Site Characterization Workplan was submitted to the MDNR. On November 2, 2017, the facility received approval from MDNR that the site had been properly characterized and the facility could begin groundwater monitoring (included in **Appendix 1**).

The purpose of the groundwater monitoring system is to monitor the ground water quality surrounding the facility and to evaluate potential impacts and/or releases from facility operations. Eight rounds of background groundwater data were collected from January 2016 to August 2017. After the background data is obtained and after the first semi-annual sampling event, a reduced sampling frequency replaced the quarterly events to semi-annual events. This reduced sampling frequency will generally be completed during the months of May and November. Statistical analysis for EPA Appendix III results began after the first semi-annual sampling event which was collected on October 4, 2017. This analysis was to determine if a statistically significant increase (SSI) has occurred. If an SSI is verified, additional evaluation is required to determine if the SSI was caused by the CCR impoundment.

The Asbury Power Plant was retired on March 1, 2020. Residual fly ash, bottom ash, and other related wastes were placed in the impoundment area until April 1, 2021, as part of the decommissioning activities. On April 1, 2021, a Notification of Intent to Close CCR Surface Impoundment was posted to the facility's website and the State Director (MDNR) was notified. Dewatering of the impoundment was occurring during the first part of 2022. CCR grading, excavation and relocation activities began in June of 2022. Closure of the CCR impoundment was completed on January 23, 2023.

On November 11 and 12, 2024, a semi-annual sampling event was conducted per the EPA CCR Rule (§ 7.90-.98). The original nine (9) groundwater-monitoring wells were sampled and analyzed for the EPA Appendix III. In addition, MW-5AR sampling began in May 2023. MW-5AR was installed in April 2023 in response to the Alternative Source Demonstration (ASD) which was completed in April 2021. The ASD was placed in the operating record. After review of the first semi-annual groundwater sampling event analytical results completed in October 2017, the constituents listed in Appendix IV were eliminated from the overall semi-annual detection monitoring plan in accordance with the EPA CCR Rule. For quality assurance and quality control

measures, a duplicate sample at MW-5 was taken. These samples were preserved and submitted directly to the laboratory.

This report is a summary of the November 2024 sampling event and the findings of the statistical analysis of the results of the groundwater monitoring program at the Asbury Power Plant CCR Impoundment. Specific information about each sampling event can be obtained from the individual report which is part of the Asbury Operating Record.

2.0 SITE LOCATION

The site occupies the north half of Section 17, Township 30 North, and Range 33 West on the Asbury 7.5-Minute Quadrangle Map as seen in **Figure 1**. The site is located approximately 5.5 miles north-northeast of Asbury, Missouri, about 14 miles north-northwest of Joplin, Missouri. A map showing the locations of the monitoring wells is in **Figure 2**.

2.1 History

In March 1996, five (5) groundwater monitoring wells, MW-1 through MW-5, were installed around the perimeter of the Asbury Power Plant CCR impoundment. Monitoring wells MW-1, MW-2 and MW-3 were installed to a total depth of between 27.0 to 28.5 feet below ground surface (bgs). Monitoring wells MW-4 and MW-5 were installed to a total depth of 48 feet bgs. Each of the five monitoring wells was equipped with 10.0-foot well screens. The five wells were then developed, purged, and sampled in 1996.

In 2003, two (2) additional groundwater monitoring wells were installed and identified as MW-6 and MW-7. Both wells had 2-inch diameter PVC well casings installed to an approximate total depth of 44 feet below ground surface. Both wells were installed with an above ground steel protective cover. No other construction details such as well screen lengths were available for these two (2) wells. In December 2015, two (2) additional groundwater monitoring wells were installed and identified as MW-5A and MW-6A.

In April 2023, monitoring well MW-5AR was installed as proposed in the Alternative Source Demonstration completed April 2021. As part of this well installation maintenance of the entire groundwater monitoring well system was also completed. This included the installation of new concrete well pads, protective covers, and protective bollards. The well riser pipe was also modified for well cap installation. New as-built survey data was obtained and will be utilized in this and future reports. MW-5A will not be removed until after the eight (8) background samples have been collected for MW-5AR.

All wells are registered with MDNR – Missouri Geological Survey Program.

The Asbury Power Plant was retired on March 1, 2020, but residual fly ash, bottom ash, and other related wastes were placed in the impoundment area as part of the decommissioning activities. The facility is now known as the Asbury Renewable Operations Center. On April 1, 2021, a Notification of Intent to Close CCR Surface Impoundment was posted to the facility's website and the State Director (MDNR) was notified. Dewatering of the impoundment was occurring during the first part of 2022. CCR grading, excavation and relocation activities began in June of 2022. Closure of the CCR impoundment was completed on January 23, 2023.

2.2 Site Geology

Drilling and subsurface investigation activities at the Site and as part of the MDNR approved CCR landfill Detailed Site Investigation (DSI) for the adjacent landfill area identified three (3) primary geologic units at the Site. These geologic units include the surficial soil layer, Warner Sandstone (uppermost aquifer), and Riverton Shale (confining unit). The information presented herein includes the primary elements of a site characterization work plan consistent with the MDNR guidance.

Surficial Soil. Soils at the site consist of a surficial unit of cohesive soils (e.g., CL, SC, ML, and CH) underlain by Pennsylvanian-age bedrock. Soil thickness at the Site ranges from approximately 15-25 feet.

Warner Sandstone. The Warner Sandstone (Sandstone) is the uppermost bedrock unit in the south portion of the Site. In the north area of the Site, the Sandstone is overlain by the Riverton Shale (Shale). Based on the DSI information, the Sandstone and Shale can occur as alternating layers. The Sandstone and Shale are gradational in places and transition from shaley sandstone to sandy shale. According to the MDNR publication on the Pennsylvanian Subsystem in Missouri, the Warner Sandstone formation is described as follows: "Generally, the lower part is interbedded, very fine-grained sandstone and claystone. The upper part is largely medium bedded to massive channel fill sandstone. In places, the Warner consists primarily of shale and claystone, with only minor amounts of sandstone" and "ranges in thickness from 0 to 15m (49.2 ft.)."

The Sandstone is more than 25-30 feet thick in places and is generally medium hard and thin to medium bedded with occasional shale partings. The degree of induration of the Sandstone varies and generally increases with depth. Slug tests performed at selected DSI piezometers screened in the Sandstone exhibited hydraulic conductivities ranging from approximately 1.3x10-4 cm/sec to 5.9x10-6 cm/sec. The slug test results are consistent with values for sandstone and shaley sandstone. The groundwater gradient is towards the east and Blackberry Creek.

Riverton Shale. Layers of the Riverton Shale (Shale) exhibited thicknesses ranging from approximately one foot to more than 10 feet. The Shale is generally dark gray to light gray. The Shale is mainly thin bedded with hardness ranging from soft to hard. Six packer tests were performed during the DSI to assess the hydraulic conductivity of the Shale. The packer test results ranged from approximately $3.2x10^{-6}$ cm/sec to $4.9x10^{-8}$ cm/sec. The packer test data indicates that the Shale is an effective confining unit.

According to the MDNR publication on the Pennsylvanian Subsystem in Missouri, the Riverton Shale formation is described as "dark gray to black, fine-grained, relatively brittle shale and contains as many as three coal beds, each of which is underlain by underclay" and "varies in thickness from a featheredge to more than 90 feet".

Unnamed Coal. The Shale includes coal seams in places that range in thickness from a few inches to approximately 1.5 feet. The coal is generally black to dark gray.

2.3 Groundwater Monitoring Network Design

The groundwater monitoring system for the CCR impoundment consists of nine (9) groundwater monitoring wells plus the recently installed MW-5AR. Two (2) wells are considered upgradient. Two (2) wells are considered sidegradient; one well is only monitored for groundwater elevation. The remaining five (5) wells are considered downgradient along with the recently installed MW-5AR.

The groundwater monitoring wells (MWs) at the Asbury Power Plant is equipped with individual dedicated poly tubing to be connected to a peristaltic pump/controller at the surface. Low-flow, micro-purge and sampling techniques and technology are utilized to collect groundwater samples from the subject wells. The groundwater sampling procedures are discussed in further detail below.

2.4 Groundwater Monitoring Network

The locations of the monitoring wells are shown in **Figure 2**. The groundwater monitoring system for the site consists of the following monitoring wells:

- MW-1 Sidegradient (water level only)
- MW-2 Upgradient
- MW-3 Upgradient
- MW-4 Downgradient
- MW-5 Downgradient
- MW-5A Downgradient
- MW-5AR Downgradient (background sampling)
- MW-6 Downgradient
- MW-6A Downgradient
- MW-7 Sidegradient

2.5 Seasonal Variation

Historical groundwater elevation data has been limited. However, adequate lengths of well screen have been utilized during the construction of the wells to accommodate typical seasonal groundwater elevation variations seen in southwest Missouri.

2.6 Groundwater Flow Direction

Historically, the seasonally high potentiometric surface indicated the groundwater flow direction to the east. **Figure 3** is a potentiometric map for this sampling event.

Originally MW-7 was thought to be a downgradient well but review of the potentiometric mapping from the eight background sampling events revealed that the well is a sidegradient well. Therefore, the designation for MW-7 has been changed from a downgradient to a sidegradient well for compliance monitoring.

3.0 BACKGROUND GROUNDWATER DATA

In accordance with EPA CCR Rule § 257.94(b), the site initiated the detection monitoring program in January 2016 to include obtaining a minimum of eight (8) independent samples for each background and downgradient well. The eight (8) independent groundwater samples were obtained and analyzed as required by the CCR Rule per the groundwater monitoring plan. Background groundwater data was collected from January 2016 to August 2017.

Groundwater Monitoring Reports were completed for each sampling event and have been placed in the Operating Record. A listing of each background groundwater sampling event is below:

- January 2016
- March 2016
- May 2016
- August 2016
- October 2016
- March 2017
- June 2017
- August 2017

Initial background monitoring was required at all monitoring wells. The sampling frequency was quarterly or more frequently for the first two (2) years. After the background data plus the first semi-annual sampling events, a reduced lower sampling frequency replaced the quarterly events to semi-annual events. This lessened sampling frequency will be completed during the months of April/May/June and October/November/December. MW-5AR background monitoring started in May 2023 and will be completed semi-annually until eight (8) rounds of background sampling data are obtained.

The initial two (2) years of background and the first semi-annual detection monitoring included parameters listed in Appendix III and Appendix IV of the EPA CCR Rule. The constituents listed in Appendix IV were eliminated from the overall semi-annual detection monitoring plan after review of the first semi-annual groundwater sampling event analytical results in January 2018, according to the EPA CCR Rule.

4.0 GROUNDWATER SAMPLING EVENT

On November 11 and 12, 2024, nine (9) groundwater monitoring wells were sampled by Midwest Environmental Consultants (MEC) for the EPA CCR Rule Appendix III parameters. In addition, MW-5AR was also sampled for Appendix III and Appendix IV parameters. For quality assurance and quality control measures, a duplicate sample was taken at MW-5. The sampling protocol and methodology was to be conducted in accordance with the facility's Sampling and Analysis Plan. **Table 1** provides a list of the analytical methods employed by the subcontracted laboratory.

Table 1 – Analytical Methods	
Method	**Description**
9056A	Anions, Ion Chromatography
6020A	Metals (ICP/MS)
SM 2540C	Solids, Total Dissolved (TDS)
Field Sampling	Field Sampling

Appendix 2 includes Monitoring Well Field Inspection sheets and field notes. The physical integrity of the wells was good. During sample collection each of the wells was monitored for pump discharge and formation recharge. Initially, a static water level for each well was recorded (**Table 2**). To ensure sufficient recharge while sampling, static water levels were collected during pumping. Prior to sample collection, field parameters for each well were measured with a flow-through meter. When the field parameters stabilized, samples for analytical testing were collected and placed on ice for hand delivery to the laboratory. At the conclusion of sample collection from each well, a final static water level measurement was obtained. The samples were collected in the appropriately pre-preserved sample containers and placed on ice for delivery.

Table 2 - Groundwater Sampling Field Parameters Summary During November 2024 Sampling Event				
WELL ID	**STATIC WATER LEVEL (ft-BTOC)**		**PURGE RATE (mL/min)**	**STABILIZED pH**
	Initial	**Final**		
MW-1*	9.12	NA	NA	NA
MW-2	4.01	5.60	200	5.67
MW-3	3.52	3.60	200	5.80
MW-4	9.37	15.10	200	6.79
MW-5	0.35	10.02	200	7.25
MW-5A	11.07	19.11	200	6.71
MW-5AR	2.42	10.75	200	7.72
MW-6	11.19	19.42	200	7.01
MW-6A	9.95	18.29	200	6.16
MW-7	5.82	5.85	200	6.30

* Water Level Only NA – Not Applicable

Appendix 3 includes the analytical results for the sampling event. Included with this analytical report are sample information; chain of custody; wet chemistry data; and volatile data.

5.0 DATA VALIDATION PROCEDURES FOR GROUNDWATER MONITORING DATA

Midwest Environmental Consultants receives Data Packages from the analytical laboratory (Eurofins). The internal quality control/quality assurance case narratives and reported data are then reviewed. Generally, the data validation procedures established by the U.S. Environmental Protection Agency *Contract Laboratory Program Functional Guidelines for Organic Data Review* and *Functional Guidelines for Inorganic Data Review* is followed. These guidelines are used to assign data qualifiers to the data. A formal data validation report for the site is not prepared; however, any significant issues are noted in the groundwater monitoring report.

MEC evaluates the data set for precision, accuracy, representativeness, comparability, and completeness (PARCC).

5.1 Precision

Laboratory Precision. Laboratory quality control procedures to measure precision consist of laboratory control sample (LCS) analysis and analysis of matrix spike/matrix spike duplicates (MS/MSD). These analyses are used to define analytical variability.

Field Precision. Analyses of duplicate samples are used to define the total variability (replicability) of the sampling/analytical system. Field replicates are collected at a rate of one per sampling event.

5.2 Accuracy

Accuracy is determined by calculating the percent recoveries for analyses of surrogate compounds, LCSs, continuing calibration check standards, and matrix spike samples. Acceptable percent recoveries are established for SW-846 and EPA methods. Field and laboratory blank analysis are also used to address measurement bias.

Field Blanks. Field blanks consisted of a trip blank and a field blank. At least one trip blank per cooler shipment accompanies samples for volatile organic analyses.

Laboratory Blanks. Method blanks, artificial, matrix-less samples, are analyzed to monitor the laboratory analysis system for interferences and contamination from glassware, reagents, etc. Method blanks are taken through the entire sample preparation process. They are included with each batch of extractions or digestion prepared, or with each 20 samples, whichever is more frequent.

5.3 Representativeness

Representativeness expresses the degree to which sample data accurately and precisely reflects site condition. Representativeness of the data is determined by comparing actual sampling procedures to those delineated in the field sampling plan, comparing results from field replicate samples, and reviewing the results of field blanks. Field notes are reviewed as part of our data validation process.

5.4 Comparability

Comparability expresses the confidence with which one data set can be compared to another data set measuring the same property. Comparability is ensured by using established and approved sample collection techniques and analytical methods, consistent basis of analysis, consistent reporting units, and analyzing standard reference materials.

5.5 Completeness

Completeness is a measure of the amount of valid data obtained from a measurement system compared to the amount expected under controlled laboratory conditions. Completeness is defined as the valid data percentage of the total tests requested. Valid data are defined as those where the sample arrived at the laboratory intact, properly preserved, in sufficient quantity to perform the requested analyses, and accompanied by a completed chain-of-custody form. Furthermore, the sample must have been analyzed within the specified holding time and in such a manner that analytical QC acceptance criteria were met.

6.0 GROUNDWATER ANALYSIS

Groundwater samples were submitted to Eurofins Environmental Testing for analysis.

6.1 Sampling Results

The constituents with results above the laboratory reporting limits are included in **Table 3**. This table also includes the recently installed MW-5AR. The Eurofins laboratory analytical results are included in **Appendix 3**.

Table 3 – Constituents During November 2024 Sampling Event

Constituent	Units	MCL	MW-2 (up)	MW-3 (up)	MW-4 (down)	MW-5 (down)	MW-5A (down)	MW-5AR (down)	MW-6 (down)	MW-6A (down)	MW-7 (side)
Appendix III											
Boron	ug/L	NE	93	<100	<100	270	2000	390	350	220	240
Calcium	mg/L	NE	23000	100000	240000	87000	450000	99000	280000	190000	570000
Chloride	mg/L	NE	110	52	16	5.9	180	8.1	45	81	49
Fluoride	mg/L	4.0	0.16	0.13	0.097	0.29	0.22	0.19	0.22	0.15	0.16
pH	SU	NE	5.67	5.80	6.79	7.25	6.71	7.72	7.01	6.16	6.30
Sulfate	mg/L	NE	92	520	500	150	1900	430	1100	1000	1800
Total Dissolved Solids	mg/L	NE	350	890	1300	570	3200	900	1800	1500	2800

NE = Not Established

<x = Less than reporting limit (nondetectable)

J = Trace value seen above minimum detection limit but below reporting limit (trace)

No Constituents were detected above the Federal Safe Drinking Water maximum contaminant level (MCL) during the sampling event.

6.2 Statistical Analysis Approach

Prediction interval analyses compare one or more observations to a limit set by background data. Interwell analyses compare observations from background wells, which include upgradient and sidegradient wells per EPA Unified Guidance definitions, and their relation to the observations for the downgradient wells. Due to varying geology in the state of Missouri, intrawell analyses had initially been deemed a more appropriate statistical method.

On January 21, 2020 MDNR forwarded an email from the USEPA that requested the site change the statistical evaluation methodology to interwell prediction limits. This correspondence is located in **Appendix 1.** The EPA review of the groundwater reports is summarized in **Table 4.**

Table 4 – EPA Review of Groundwater Reports	
Facility	Asbury Power Plant
Location	Asbury, MO
Owner	Empire District Electric Company
Units	Upper Pond-unlined, South Pond-unlined, Lower Pond-unlined
Geology	Surficial unit of clay, clayey sand, and silt approximately 15 to 25 feet thick underlain by Warner Sandstone approximately 25-30 feet thick in the southern portion of the site and the Riverton Shale in the northern area of the site
Problematic Use of Intra Well Comparisons	Analytical results indicate consistent differences in contaminant concentrations between upgradient and downgradient wells. Consequently, interwell comparisons are feasible and would be preferable in the absence of compelling reasons to use intra well analysis
Problematic Alternate Source Determination	
Conclusions	While there are no boring logs in the documents to confirm that the wells are screened in the same geologic unit, consistency in the field parameters and the description of the geology suggest that the wells are screened in the sandstone. The analytical results indicate consistent differences in contaminant concentrations between upgradient and downgradient wells, consequently, interwell comparisons are feasible and would be preferable in the absence of compelling reasons to use intra wells analyses

6.3 Statistical Analysis Results

Statistical analysis was completed by Jett Environmental Consultant. The results are included in **Appendix 4.**

Inorganics – Times Series & Trend Testing

Time Series graphs were generated for each of the inorganic constituents. The time series graphs are included in **Appendix 4 - Attachment 1**.

The inorganic constituents with results above the laboratory reporting limits were analyzed with Sanitas™ to determine if statistically significant increasing or decreasing trends exist within the background data range (January 2016 through May 2023) utilizing the Sen's Slope / Mann-Kendall trend test. Trends were based on a 98% confidence level (two tailed). The following constituents exhibited statistically significant increasing trends: boron (MW-5A), calcium (MW- 5A, MW-6A), chloride (MW-5, MW-5A, MW-6), fluoride (MW-7), sulfate (MW-5A, MW-6A), and total dissolved solids (MW-5A, MW-6A). Of the increasing trends, only one instance was for an upgradient well (fluoride at MW-7); however, fluoride was reported as non-detect over the last eight rounds of background sampling. All other constituents were either not trending or had a statistically significant decreasing trend. The trending data have only been reviewed at this time. No trending data was removed before performing the inter-well prediction interval analysis. The trend testing results are included in **Appendix 4 - Attachment 2**.

Inorganics – Inter-Well Prediction Limits
Statistical Analysis was performed on the inorganic constituents and metals. Prediction interval analyses compare one or more observations to a limit set by background data. Background data consists of semi-annual groundwater tests from the upgradient wells (MW-2, MW-3, and MW-7) between January 2016 and May 2023 (20 events). Interwell analyses compare observations from upgradient background wells and their relation to the observations for the downgradient wells. Intra-well analyses compare background observations to current observations of the same well.

Sanitas™ was used to perform the statistical analyses. For most constituents, non-parametric inter-well prediction intervals were performed due to non-detectable levels in more than 50 percent of the background samples or if data were not normally distributed. The Sanitas™ inter-well prediction limit outputs are included in **Appendix 4 - Attachment 3**.

Table 5 lists the parameters that exhibited a statistically significant increase (SSI) during the November 2024 sampling event, the associated monitoring wells, inter-well prediction limit, and the measured concentration. Also included on the table is a comparison to any established USEPA National Primary Drinking Water Standard – Maximum Contaminant Level (MCL).

Table 5
SSI Observed During May 2024 Sampling Event

Constituent (units)	Well	Initial vs. Confirmed	Statistical Limit	Result	MCL
Boron (mg/L)	MW-5A	Confirmed	0.9	2.0	NE
pH (SU)	MW-5	Initial	5.22-6.98	7.25	NE
pH (SU)	MW-6	Initial	5.22-6.98	7.01	NE
Total Dissolved Solids (mg/L)	MW-5A	Confirmed	3100	3200	NE

NE = Not Established.
MCL = Maximum Contaminant Level

Statistical Power Curves
A statistical power curve graph has been prepared to allow comparisons between the current monitoring program and USEPA-recommended standards. Under the USEPA's *Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance* (March 2009), inter-well prediction limits are constructed to have a site-wide false positive rate (SWFPR) of 10% annually, or 5% per event for a semi-annually sampled facility. **Appendix 4 - Attachment 4** presents the power curves for the facility's monitoring program.

Results Summary
Boron (MW-5A) and total dissolved solids (MW-5A) exhibited confirmed SSIs during the November 2024 event.

pH (MW-5 and MW-6) exhibited an initial SSI during the November 2024 event.

Of the SSIs, none have an established MCL

6.4 Results Interpretation

The November 2024 sampling results confirmed an interwell prediction exceedance for boron (MW-5A) and total dissolved solids (MW-5A) from the May 2024 sampling event. There are no current primary (health based) MCLs for boron or total dissolved solids. The facility will resample as part of the November 2024 sampling event.

There were two initial interwell prediction limit exceedance for pH in MW-5 and MW-6. These wells will be resampled in May 2025.

The results of the interwell prediction limit statistical analysis of the November 2020, May 2021, November 2021, May 2022, November 2022, May 2023 sampling, November 2023, May 2024, and November 2024 events indicate a confirmed exceedance for Boron (MW-5A). EPA CCR Rule 40 CFR § 257.94(e)(2) allows an Alternative Source Demonstration (ASD) that the statistically significant increase resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality for a constituent found in a monitoring well. This ASD was completed in April 2021 and placed in the operating record. The ASD found the statistically significant increase resulted from an error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality instead of a release to groundwater.

The ASD theorized that this SSI was an issue with the location of the well rather than from a release from the facility. This alternative source demonstration confirmed that MW-5A may be impacted by its placement upgradient of a historic dewatering trench and cutoff trench. The ASD proposed a replacement well for MW-5A be installed downgradient of the dewatering trench and cutoff trench system. The new replacement well MW-5AR was installed prior to the May 2023 sampling event and the initial sampling results were compared to the existing MW-5A. Review of initial sampling results indicate that the theory may be correct. Monitoring of both MW-5A and MW-5AR will continue until the eight needed background samples are collected for MW-5AR and statistical analysis can begin. Sampling of MW-5A will then cease.

Based upon these findings the site will not need to move into the assessment monitoring program at this time and will continue with the detection monitoring program per the EPA CCR Rule (§ 257.94) on a semi-annual basis.

6.5 Proposed Actions

Groundwater sampling and statistical analysis will continue to be completed with interwell prediction limits per EPA's request. The results of the November 2024 sampling event confirmed the exceedance for Boron (MW-5A) and Total Dissolved Solids (MW-5A). Monitoring well MW-5AR was installed in response to the ASD. Monitoring of both MW-5A and MW-5AR will continue until the eight needed background samples are collected for MW-5AR and statistical analysis can begin. Sampling of MW-5A will then cease.

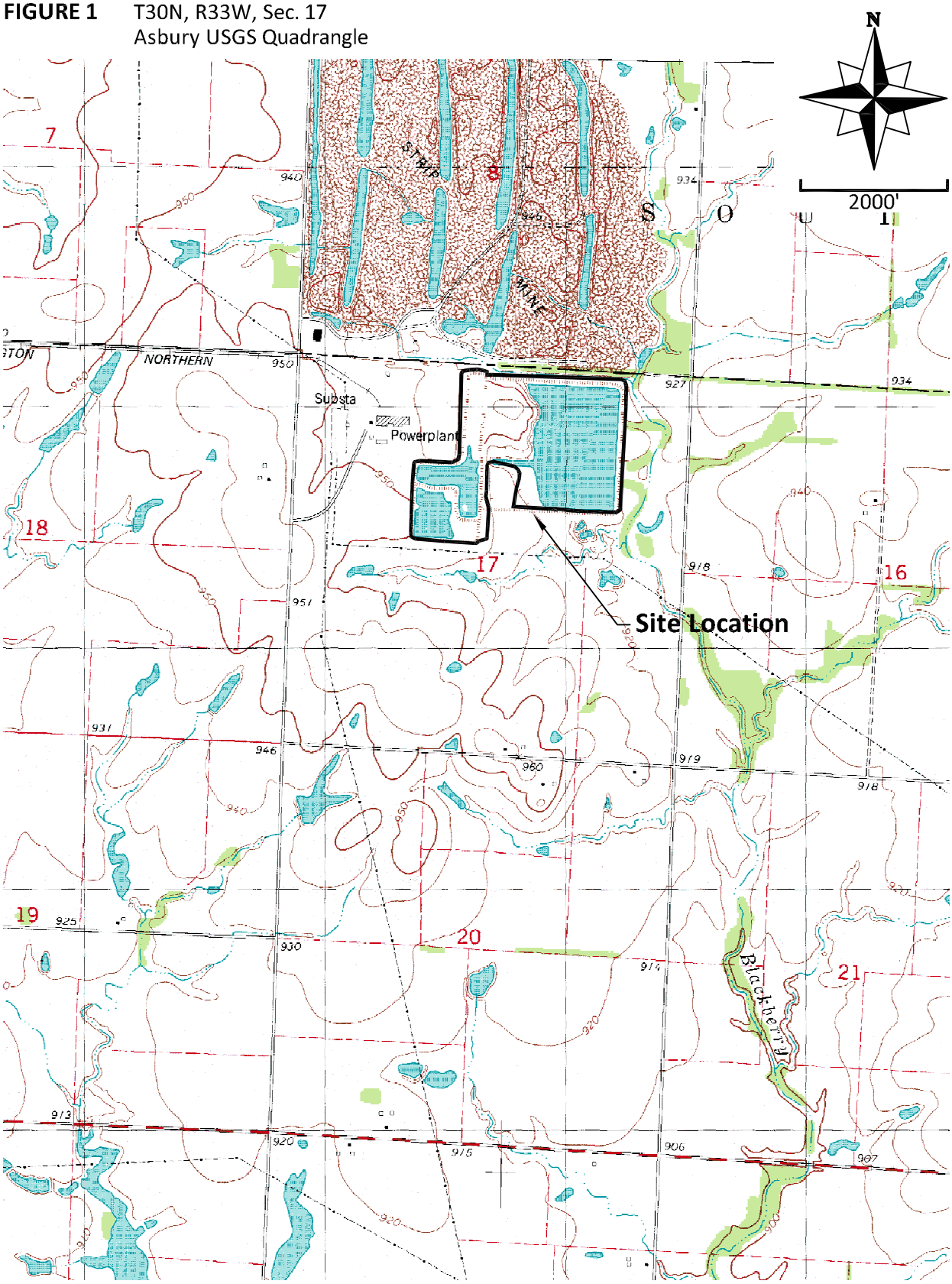
There were two initial interwell prediction limit exceedance for pH in MW-5 and MW-6. These wells will be resampled in May 2025.

Based upon these findings the site does not need to move into the assessment monitoring program at this time and will continue with the detection monitoring program per the EPA CCR Rule (§ 257.94) on a semi-annual basis.

FIGURES

Asbury Generating Station CCR Impoundment
Groundwater Sampling Event - November 2024
Site Location Map

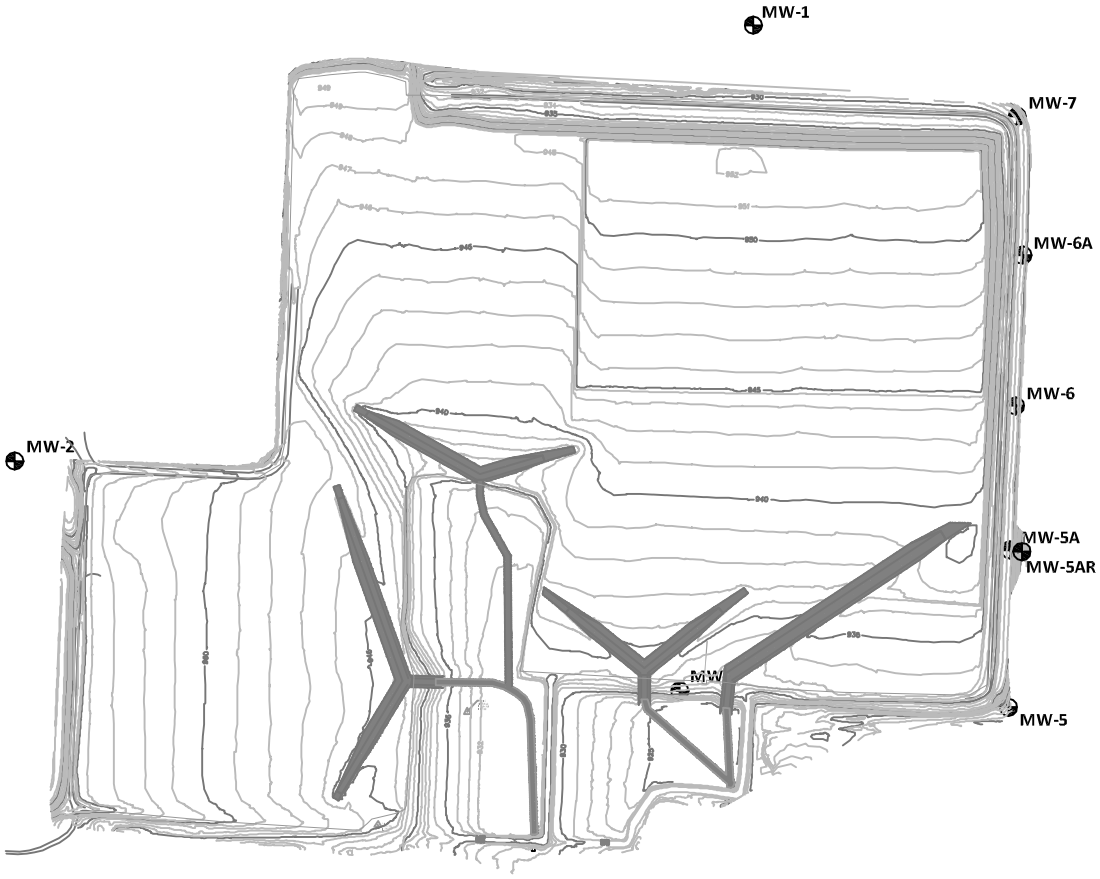
FIGURE 1 T30N, R33W, Sec. 17
Asbury USGS Quadrangle



January 2025

Asbury Generating Station CCR Impoundment
Groundwater Sampling Event - November 2024
Groundwater Monitoring System

FIGURE 2



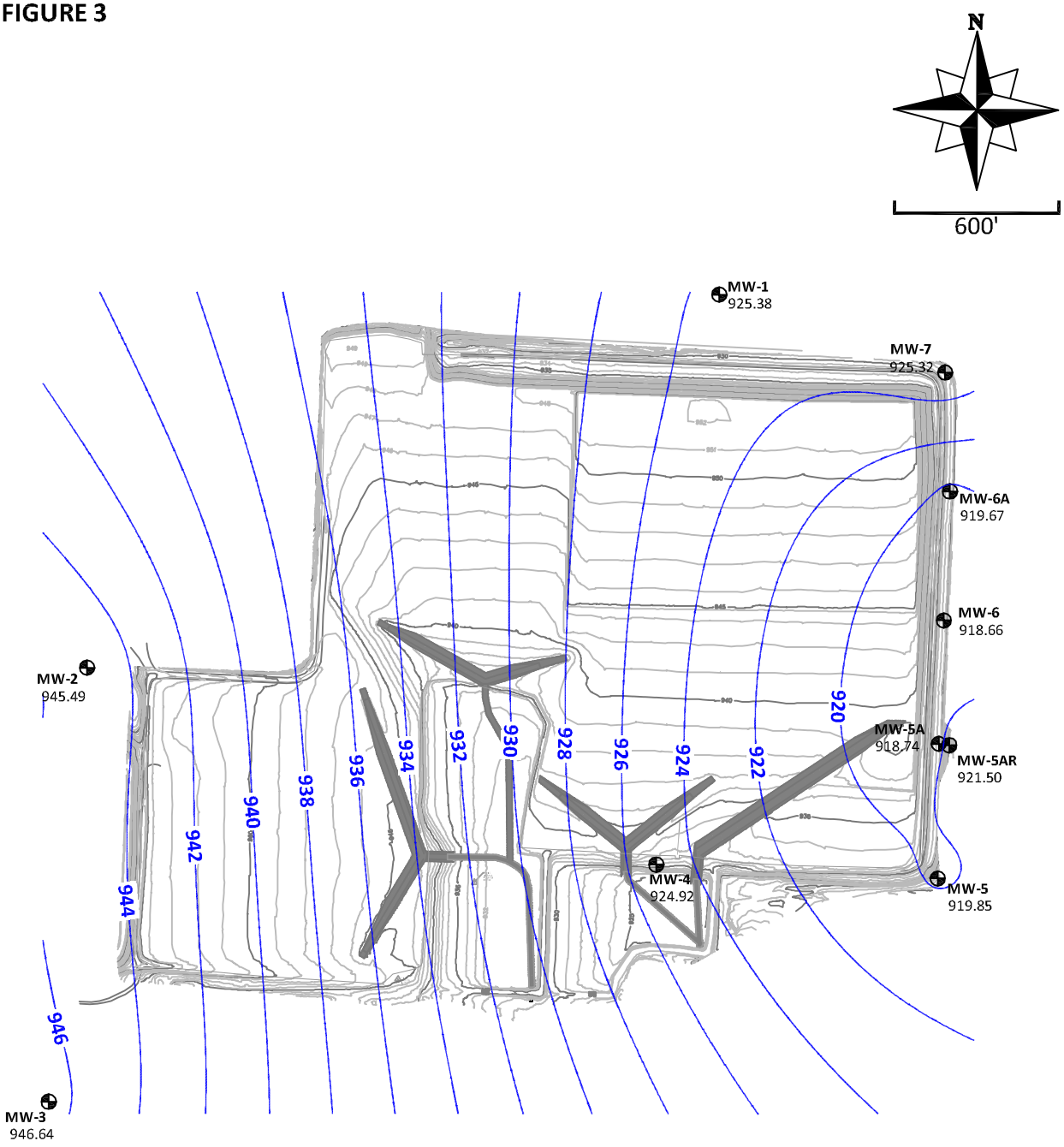
Well ID	Northing	Easting
MW-1	435789.71	2765168.83
MW-2	434428.56	2762861.43
MW-3	432844.71	2762721.27
MW-4	433709.70	2764938.79
MW-5	433659.19	2765966.39
MW-5A	434150.39	2765969.77
MW-5AR	434145.71	2766008.17
MW-6	434600.94	2765988.47
MW-6A	435071.72	2766010.58
MW-7	435505.31	2765993.01

Legend

Monitoring Well

Asbury Generating Station CCR Impoundment
Groundwater Sampling Event - November 2024
Groundwater Piezometric Surface Map

FIGURE 3



Well ID	Northing	Easting	Top Of Casing	Static Water Level (BTOC)	Static Water Level
MW-1	435789.71	2765168.83	934.50	9.12	925.38
MW-2	434428.56	2762861.43	949.50	4.01	945.49
MW-3	432844.71	2762721.27	950.16	3.52	946.64
MW-4	433709.70	2764938.76	934.29	9.37	924.92
MW-5	433659.19	2765966.39	920.20	0.35	919.85
MW-5A	434150.39	2765969.77	929.76	11.02	918.74
MW-5AR	434145.71	2766008.17	923.92	2.42	921.50
MW-6	434600.94	2765988.47	929.85	11.19	918.66
MW-6A	435071.72	2766010.58	929.61	9.94	919.67
MW-7	435505.31	2765993.01	931.14	5.82	925.32

Legend

Monitoring Well

APPENDIX 1

EPA/MDNR Correspondence

Missouri Department of NATURAL RESOURCES
dnr.mo.gov
Eric R. Greitens, Governor
Carol S. Comer, Director

NOV 02 2017

Mr. Kavan Stull, Senior Environmental Coordinator
Empire District
602 South Joplin Avenue
Joplin, MO 64802

RE: Site Characterization Workplan

Dear Mr. Stull:

The Missouri Department of Natural Resources has reviewed the document "Site Characterization Workplan" dated May 16, 2017. The site has undergone extensive characterization regarding construction of a coal combustion residual (CCR) landfill near the CCR impoundments. The department's Water Protection Program has determined, through consulting with the Missouri Geological Survey, this characterization is sufficient and may be used in whole to complete the required monitoring of the sub-surface conditions at the site. Additional submittal of site characterization is not necessary, as the previous submittal meets the requirement for special condition 19(b) of the Missouri State Operating Permit MO-0095362. The facility may proceed with the next step laid out in the permit; special condition 19(c). Enclosed is the Missouri Geological Survey concurrence.

If you were adversely affected by this decision, you may be entitled to an appeal before the Administrative Hearing Commission (AHC) pursuant to 10 CSR 20 1.020 and Section 621.250, RSMo. To appeal, you must file a petition with the AHC within 30 days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed; if it is sent by any method other than registered mail or certified mail, it will be deemed filed on the date it is received by the AHC. Contact information for the AHC is by mail at Administrative Hearing Commission, United States Post Office Building, Third Floor, 131 West High Street, P.O. Box 1557, Jefferson City, MO 65102, by phone at 573-751-2422, by fax at 573-751-5018, and by website at www.oa.mo.gov/ahc.

If you have any questions, please do not hesitate to contact Ms. Pam Hackler by mail at Department of Natural Resources, Water Protection Program, P.O. Box 176, Jefferson City, MO 65102-0176, by phone at 573-526-3386; or by email at pam.hackler@dnr.mo.gov. Thank you.

Sincerely,

WATER PROTECTION PROGRAM

Michael J. Abbott, Chief
Operating Permits Section

MJA/php

Enclosure

c: Mr. Randall Willoughby, Southwest Regional Office

Missouri Department of NATURAL RESOURCES
dnr.mo.gov
Eric R. Greitens, Governor
Carol S. Comer, Director

MEMORANDUM

SWR18011
Jasper County

DATE: October 18, 2017

TO: Pam Hackler- WPP- Industrial Wastewater Unit

FROM: Fletcher N. Bone, Geologist, Environmental Geology Section, Geological Survey Program, MGS

Fletcher N. Bone

STATE OF MISSOURI
REGISTERED GEOLOGIST
2014000148
October 18, 2017

SUBJECT: Site characterization for existing CCR impoundments
Asbury Power Plant Site Characterization Work Plan- CCR
37 21 22.66 Latitude, -94 35 4.79 Longitude,
Jasper County, Missouri

The Missouri Geological Survey (MGS) has reviewed the documents titled, 'NPDES Permit MO-0095362 Asbury Power Plant, Jasper County, Missouri, Site Characterization Work Plan', prepared by Empire District Electric Company, dated September 8, 2017 and 'Site Characterization Work Plan, Coal Combustion Residuals Impoundments, Empire Electric Facility - Permit MO-0095362, Jasper County, Missouri, Geotechnology Project No. J021738.03', prepared by Geotechnology Inc., dated May 16, 2017. The MGS offers the following comment.

General Comment:

The MGS agrees that the existing Coal Combustion Residuals (CCR) impoundments (site 1) do not need further site characterization, at this time. The site characterization performed, as described in the Detailed Site Investigation Report (DSI), dated January 21, 2015, at the proposed CCR impoundment (site 2) that is approximately 1,000 feet south of the existing CCR impoundments (site 1), coupled with the geologic and hydrologic data provided that pertains to the existing CCR impoundments (site 1) (1996 to present data), provides adequate characterization of the geology and hydrology of the site 1. The geologic and hydrologic settings of both sites are similar, with geologic boring logs and potentiometric data of both sites being compared. The hydraulic conductivity testing conducted at the proposed CCR site (site 2) has demonstrated that there is a low potential for groundwater contamination for this area.

If you are in need of further assistance from our office or have questions regarding this evaluation please feel free to contact me at (573) 368-2161.

Drew Landoll

From: Snellen, Greg <greg.snellen@dnr.mo.gov>
Sent: Tuesday, January 21, 2020 3:34 PM
To: Drew Landoll
Cc: aston.robert@epa.gov; Nagel, Chris; Snellen, Greg
Subject: RE: EPA Request for Information regarding CCR Units

Good afternoon Drew,

The Environmental Protection Agency (EPA) has been working to verify data on facility specific CCR websites required by 40 CFR 257 at the national level. EPA headquarters provided a list of inquiries to the EPA regions and requested they work with the states to answer their questions. States were given a choice as to the amount of involvement they could have with the information gathering. Missouri elected to take the lead on contacting the facilities in the state, providing the information requested by the EPA and relaying the answers back.

For your company, the EPA has questions about facilities and units which may be seeking an extension under the alternate closure provisions in 2020 and what type of extension may be requested.

They provided the following list of units:

Region	State	Part A Extension	Plant Name	Unit Name	Unit Type	Op Status	Unit Class	NOI Type	NOI Date	Alterr NOI
7	MO		Asbury	Lower Pond	Surface Impoundment	Active	Existing			
7	MO		Asbury	Upper Pond	Surface Impoundment	Active	Existing			
7	MO		Asbury	South Pond	Surface Impoundment	Active	Existing			

EPA has requested a response on extensions by February 14, 2020.

Additionally, the EPA has the following question related to groundwater monitoring:

Facility	Location	Owner	Units	Geology	Problematic Use of Intra Well Comparisons	Problematic Alternate Source Determinations	Conclusions
Asbury Power Plant	Asbury MO	Empire District Electric Company	Upper Pond-unlined South Pond-unlined Lower Pond-unlined	Surficial unit of clay, clayey sand, and silt approximately 15 to 25 feet thick underlain by Warner Sandstone approximately 25-30 feet thick in the southern portion of the site and the Riverton Shale in the northern area of the site	Analytical results indicate consistent differences in contaminant concentrations between upgradient and downgradient wells. Consequently, inter well comparisons are feasible and would be preferable in the absence of compelling reasons to use intra well analysis		While there are no boring logs in the documents to confirm that the wells are screened in the same geologic unit, consistency in the field parameters and the description of the geology suggest that the wells are screened in the sandstone. The analytical results indicate consistent differences in contaminant concentrations

Facility	Location	Owner	Units	Geology	Problematic Use of Intra Well Comparisons	Problematic Alternate Source Determinations	Conclusions
							between upgradient and downgradient wells, consequently, interwell comparisons are feasible and would be preferable in the absence of compelling reasons to use intra wells analyses

At this time, there is not a deadline for this request.

Please let the Department know if you have any questions. You can also direct inquires to Bob Aston with EPA Region 7 who is copied on this email.

Thank you

Greg Snellen
Environmental Supervisor
Waste Management Program
573-526-8779

We'd like your feedback on the service you received from the Missouri Department of Natural Resources. Please consider taking a few minutes to complete the department's Customer Satisfaction Survey at https://www.surveymonkey.com/r/MoDNRsurvey. Thank you.

From: Aston, Robert
Sent: Friday, January 10, 2020 7:48 AM
To: Nagel, Chris <Christopher.Nagel@dnr.mo.gov>; Snellen, Greg <greg.snellen@dnr.mo.gov>
Cc: Martin, Mike <Martin.Mike@epa.gov>; Kloeckner, Jane <Kloeckner.Jane@epa.gov>; Catlin, Kelley <Catlin.Kelley@epa.gov>; Werner, Leslye <Werner.Leslye@epa.gov>; Hayworth, Brad <Hayworth.Brad@epa.gov>
Subject: CCR workload

Chris and Greg,

As a follow-up to our call on Wednesday

On Monday December 2, 2019 EPA published in the Federal Register a proposed rule for the Disposal of Coal Combustion Residuals From Electric Utilities: A Holistic Approach to Closure Part A: Deadline To Initiate Closure. The major elements of this proposed rule include:

- Definition of Lined Unit (removing a clay-lined unit from the definition),
- New initiation of Closure and Cease Receipt of Waste Deadline of August 31, 2020,
- New Alternate Closure Provisions for surface impoundment: Extensions to the initiation of closure

Nationally, EPA is gathering data to determine the number of facilities and units which may be seeking an extension under the alternate closure provisions in 2020 and is tasking the regions to work with our state partners and the facilities to determine the number of such facilities and units and what type of extension may be requested. Region 7 is seeking the state's assistance in gathering this information.

To be eligible for an extension the surface impoundment needs to be:

- An existing surface impoundment (eligible inactive surface impoundments should already be closing)
- An unlined or "clay-lined" surface impoundment
- Passed all location restrictions or only failed the uppermost aquifer restriction
  - Those that failed multiple location restrictions or did not post should have ceased receipt of waste in April 2019

This proposed rule offers facilities three options with regards to an extension

1.) Three month self-implementing extension (§ 257.103(e)(1)). Under this provision the surface impoundment must cease receipt of waste no later than November 30, 2020, and the facility must document certain conditions and certify "that the CCR and/or non-CCR waste streams must continue to be managed in that CCR surface impoundment to allow the facility to complete the measures necessary to provide alternative disposal capacity, either on-site or off-site of the facility" on its publicly available website no later than August 31, 2020.

2.) Site specific alternative to initiation of closure deadline due to lack of disposal capacity (§ 257.103(f)(1)). This provision allows facilities to submit demonstrations to EPA for approval for a specific amount of time to be able to continue to use their surface impoundment while developing alternate capacity for the CCR and non-CCR waste streams. This extension allows the facility to continue to use a unit (surface impoundment) for a maximum of 5 years, until October 15, 2023. Under this extension, facilities are required to submit their demonstrations to EPA no later than June 30, 2020.

3.) Site specific alternative to initiation of closure deadline due to Permanent Cessation of Coal Fired Boiler(s) by a Date Certain (§ 257.103(f)(2)): If a facility is ceasing generation of coal fired boiler(s) by a date certain, then the facility must complete closure by October 17, 2023 for surface impoundments less than 40 acres and by October 17, 2028 for surface impoundments larger than 40 acres. The facility is required to submit a demonstration to EPA for approval to continue to use their CCR surface impoundments. Under this extension, demonstrations are required to be submitted to EPA for approval no later than May 15, 2020.

As you can see above, the deadlines for requesting extensions are approaching quickly and will become effective when the proposed rule is final. EPA is requesting assistance from the regions, states, and facilities to estimate the number and types of extensions facility owners/operators may be requesting. EPA headquarters has developed a list (attached) of facilities which may be eligible for extensions by EPA Region and State. This list was developed by examining information included on individual facility web sites which are required as part of the CCR regulations. The list of potential sites in Missouri has been attached (attached Excel file) to this email. EPA headquarters has requested that individual regions reach out to their state counterparts to identify facility contacts and reach out to those contacts to determine which facilities and units may be requesting an extension and which type of extension may be requested. EPA headquarters has requested that this information be collected by February 14, 2020.

As part of the effort to determine what type of an extension a facility may need, EPA would also like the state's assistance in obtaining input regarding an estimate of the length of the extension that may be requested by the facility owners/operators. As part of the discussions, we need an estimate regarding the length of the extension. For example, EPA needs to estimate the following:

- Facilities that will not need an extension
- Facilities that will only need till November 2020 (short term extension)
- Longer than November – need about 6 months more
- Longer than November – need about 1 year
- Longer than November – need longer than 18 months

EPA is collecting this data in order to estimate the potential workload which could be associated with reviewing the above mentioned extension requests.

In addition, EPA headquarters routinely reviews the information posted on individual facility web sites. As part of that review EPA headquarters has identified sites in each region where specific facility information which is required to be posted is either missing, incomplete or technical questions exist. As part of this review EPA has developed two lists. See attached. One list deals with compliance issues related to documents which are, or in some cases are not, posted on the specific facility websites. The second list deals with groundwater questions related to Alternate Source Demonstrations and Intrawell analyses. With regards to the list dealing with compliance issues related to documents, EPA headquarters has requested that the regions work with their state counterparts to identify the appropriate facility contact. The plan is that EPA Headquarters would take the lead in coordination with the regions and states to contact the facilities to discuss and remedy the identified issues. With regards to the second list dealing with Alternate Source Demonstrations, EPA headquarters has requested that the regions work with their state counterparts to identify the appropriate facility contacts. The regions and or the states would then take the lead to address any identified issues. No specific timeframe has been established to address the questions related to either of the above lists. Region 7 anticipates working closely with the state in addressing these issues.

It should be noted that EPA headquarters routinely reviews CCR facility websites and could identify additional questions. If that should occur Region 7 would again reach out to the states.

At your convenience I would like to follow-up with you on the above issues sometime next week to discuss Missouri's perspective and any comments you may have. If you have any questions please do not hesitate to call or email me.

Thanks

Bob Aston
USEPA Region 7
(913)551-7392

APPENDIX 2

Monitoring Well Field Inspection Sheets and Field Notes

2024 Field Sampling Log

Facility: Asbury CCR (Permit #) Monitoring Well ID: MW- 2

Sample [X] Blind Duplicate [ ] Field Blank [ ].

Purge Information:

Method of Well Purge: **Peristaltic Pump with 3/8 - inch Diameter Tubing**

Actual Purge Volume Removed: 1800 mL post pump calibration.

Date / Time Initiated: 11 13 -24 @ 9:15 Date / Time Completed: 11 – 13 -24

Well Purged To Dryness?: Y / (N) Gas Detected? Y / (N)

Purge Data:

Time	Purge Rate (mL/min)	Cumulative Volume (mL)	Temp. (°C)	pH (SU)	Specific Conductivity (mS/cm)	Dissolved Oxygen (mg/L)	ORP (MV)	Turbidity ( )	Other (Color, Clarity, Odor)
9:18	200	600	17.9	5.71	0.716	0.79	132.8	5.84	Clear
:20	↓	1000	17.8	5.69	0.712	0.43	127.5	5.26	↓
:22	↓	1400	17.8	5.68	0.711	0.34	126.9	4.44	↓
:24	↓	1800	17.6	5.67	0.711	0.27	128.1	3.73	↓

Time sampled 09:25

Weather Conditions Rainy, 50°F

Water Level Start 4.01

Water Level Finish 5.60'

Name (MEC Field Sampler): Ryan Ortbals and Rick Elgin

Sampler Signature Ryan Ortbals

Field Inspection	Good	Fair	Poor
Access	(G)	F	P
Pad Condition	(G)	F	P
Casing Condition	(G)	F	P
Locking Cap & Lock	(G)	F	P
Riser Condition	(G)	F	P

Field Inspection	Yes	No	N/A
Well ID Visible	(Y)	N	N/A
Standing Water	Y	(N)	N/A
Clear of Weeds	(Y)	N	N/A
Measuring Point	(Y)	N	N/A
Split sample with MDNR	Y	(N)	N/A
Maintenance Performed	Y	(N)	N/A
Decontamination Normal	(Y)	N	N/A
Equipment Calibration Normal	(Y)	N	N/A
Redevelopment Needed	Y	(N)	N/A
Any deviations from SAP	Y	(N)	N/A
Sediment Thickness Checked	Y	(N)	N/A

Historical Data: Average of sampling events. Note: MW-5-AR first sampled May 2023

Constituent	Units	MW- 1	MW-2	MW-3	MW-4	MW-5	MW-5A	MW-5-AR
pH	S.U.	NO TEST	5.83	5.08	6.30	6.83	6.82	
Specific Conductance	umhos/cm	GW	0.786	1.132	2.083	0.841	1.769	
Total Well Depth	ft	Level						
Average GW Depth	ft	Only	1.24	0.4	5.39	1.32	6.92	
Average GW Drop	ft							
2 System Volumes (Min Purged Amount)	mL	DON'T SAMPLE	800	800	800	800	800	

2024 Field Sampling Log

Facility: Asbury CCR (Permit #)

Monitoring Well ID: MW- 3

Sample [X] Blind Duplicate [ ] Field Blank [X]

Purge Information:

Method of Well Purge: **Peristaltic Pump with 3/8 - inch Diameter Tubing**

Actual Purge Volume Removed: 1600 mL post pump calibration.

Date / Time Initiated: 11 13 -24 @ 9:58

Date / Time Completed: 11 – 13 -24

Well Purged To Dryness?: Y / N

Gas Detected? Y / N

Purge Data:

Time	Purge Rate (mL/min)	Cumulative Volume (mL)	Temp. (°C)	pH (SU)	Specific Conductivity (mS/cm)	Dissolved Oxygen (mg/L)	ORP (MV)	Turbidity ( )	Other (Color, Clarity, Odor)
10:00	200	400	16.6	5.80	1.325	0.73	-0.2	41.76	clear
:02	↓	800	16.6	5.80	1.324	0.43	-2.3	25.05	↓
:04		1200	16.5	5.80	1.322	0.33	-3.3	28.33	
:06	↓	1600	16.5	5.80	1.322	0.24	-4.0	33.05	↓

FB

Time sampled 10:10 / 10:20

Weather Conditions Cloudy, 50°F

Water Level Start 3.52'

Water Level Finish 3.60'

Name (MEC Field Sampler): Ryan Ortbals and Rick Elgin

Sampler Signature

Field Inspection	Good	Fair	Poor
Access	G	F	P
Pad Condition	G	F	P
Casing Condition	G	F	P
Locking Cap & Lock	G	F	P
Riser Condition	G	F	P

Field Inspection	Yes	No	N/A
Well ID Visible	Y	N	N/A
Standing Water	Y	N	N/A
Clear of Weeds	Y	N	N/A
Measuring Point	Y	N	N/A
Split sample with MDNR	Y	N	N/A
Maintenance Performed	Y	N	N/A
Decontamination Normal	Y	N	N/A
Equipment Calibration Normal	Y	N	N/A
Redevelopment Needed	Y	N	N/A
Any deviations from SAP	Y	N	N/A
Sediment Thickness Checked	Y	N	N/A

Historical Data: Average of sampling events. Note: MW-5-AR first sampled May 2023

Constituent	Units	MW- 1	MW-2	MW-3	MW-4	MW-5	MW-5A	MW-5-AR
pH	S.U.	NO TEST	5.83	5.08	6.30	6.83	6.82	
Specific Conductance	umhos/cm	GW	0.786	1.132	2.083	0.841	1.769	
Total Well Depth	ft	Level						
Average GW Depth	ft	Only	1.24	0.4	5.39	1.32	6.92	
Average GW Drop	ft							
2 System Volumes (Min Purged Amount)	mL	DON'T SAMPLE	800	800	800	800	800	

2024 Field Sampling Log

Facility: Asbury CCR (Permit #)

Monitoring Well ID: MW- 4

Sample [X] Blind Duplicate [ ] Field Blank [ ].

Purge Information:

Method of Well Purge: **Peristaltic Pump with 3/8 - inch Diameter Tubing**

Actual Purge Volume Removed: 1400 mL post pump calibration.

Date / Time Initiated: 11 13 -24 @ 8:15

Date / Time Completed: 11 – -24

Well Purged To Dryness?: Y (N)

Gas Detected? Y (N)

Purge Data:

Time	Purge Rate (mL/min)	Cumulative Volume (mL)	Temp. (°C)	pH (SU)	Specific Conductivity (mS/cm)	Dissolved Oxygen (mg/L)	ORP (MV)	Turbidity ( )	Other (Color, Clarity, Odor)
8:16	200	200	17.2	6.76	2.006	0.99	18.6	48.52	Clear
:18		600	17.4	6.78	2.005	0.55	-21.5	40.20	
:20		1000	17.3	6.79	2.009	0.79	-23.1	46.43	
:22		1400							

Time sampled 8:25

Weather Conditions Cloudy, 50°F

Water Level Start 9.37'

Water Level Finish 15.10'

Name (MEC Field Sampler): Ryan Ortbals and Rick Elgin

Sampler Signature

Field Inspection	Good	Fair	Poor
Access	G	(F)	P
Pad Condition	(G)	F	P
Casing Condition	(G)	F	P
Locking Cap & Lock	(G)	F	P
Riser Condition	(G)	F	P

Field Inspection	Yes	No	N/A
Well ID Visible	(Y)	N	N/A
Standing Water	Y	(N)	N/A
Clear of Weeds	(Y)	N	N/A
Measuring Point	(Y)	N	N/A
Split sample with MDNR	Y	(N)	N/A
Maintenance Performed	Y	(N)	N/A
Decontamination Normal	(Y)	N	N/A
Equipment Calibration Normal	(Y)	N	N/A
Redevelopment Needed	Y	(N)	N/A
Any deviations from SAP	Y	(N)	N/A
Sediment Thickness Checked	Y	(N)	N/A

Historical Data: Average of sampling events. Note: MW-5-AR first sampled May 2023

Constituent	Units	MW- 1	MW-2	MW-3	MW-4	MW-5	MW-5A	MW-5-AR
pH	S.U.	NO TEST	5.83	5.08	6.30	6.83	6.82	
Specific Conductance	umhos/cm	GW	0.786	1.132	2.083	0.841	1.769	
Total Well Depth	ft	Level						
Average GW Depth	ft	Only	1.24	0.4	5.39	1.32	6.92	
Average GW Drop	ft							
2 System Volumes (Min Purged Amount)	mL	DON'T SAMPLE	800	800	800	800	800	

2024 Field Sampling Log

Facility: Asbury CCR (Permit #) Monitoring Well ID: MW- 5

Sample [X] Blind Duplicate [X] Field Blank [ ].

Purge Information:

Method of Well Purge: **Peristaltic Pump with 3/8 - inch Diameter Tubing**

Actual Purge Volume Removed: 1800 mL post pump calibration.

Date / Time Initiated: 11 12 -24 @ 3:54 Date / Time Completed: 11 – 12 -24

Well Purged To Dryness?: Y (N) Gas Detected? Y (N)

Purge Data:

Time	Purge Rate (mL/min)	Cumulative Volume (mL)	Temp. (°C)	pH (SU)	Specific Conductivity (mS/cm)	Dissolved Oxygen (mg/L)	ORP (MV)	Turbidity ( )	Other (Color, Clarity, Odor)
3:57	200	600	17.8	7.24	0.986	0.92	-136.5	4.38	Clear
:59	↓	1000	17.7	7.24	0.984	0.41	-147.9	8.64	↓
4:01	↓	1400	17.6	7.25	0.984	0.33	-150.1	12.61	↓
:03	↓	1800	17.6	7.25	0.983	0.26	-152.9	14.20	↓

Time sampled 4:05 / 4:20 Duplicate

Weather Conditions Sunny, 65°F

Water Level Start 0.35'

Water Level Finish 10.02'

Name (MEC Field Sampler): Ryan Ortbals and Rick Elgin

Sampler Signature

Field Inspection	Good	Fair	Poor
Access	G	F	P
Pad Condition	G	F	P
Casing Condition	G	F	P
Locking Cap & Lock	G	F	P
Riser Condition	G	F	P

Field Inspection	Yes	No	N/A
Well ID Visible	Y	N	N/A
Standing Water	Y	N	N/A
Clear of Weeds	Y	N	N/A
Measuring Point	Y	N	N/A
Split sample with MDNR	Y	N	N/A
Maintenance Performed	Y	N	N/A
Decontamination Normal	Y	N	N/A
Equipment Calibration Normal	Y	N	N/A
Redevelopment Needed	Y	N	N/A
Any deviations from SAP	Y	N	N/A
Sediment Thickness Checked	Y	N	N/A

Historical Data: Average of sampling events. Note: MW-5-AR first sampled May 2023

Constituent	Units	MW- 1	MW-2	MW-3	MW-4	MW-5	MW-5A	MW-5-AR
pH	S.U.	NO TEST	5.83	5.08	6.30	6.83	6.82	
Specific Conductance	umhos/cm	GW	0.786	1.132	2.083	0.841	1.769	
Total Well Depth	ft	Level						
Average GW Depth	ft	Only	1.24	0.4	5.39	1.32	6.92	
Average GW Drop	ft							
2 System Volumes (Min Purged Amount)	mL	DON'T SAMPLE	800	800	800	800	800	

2024 Field Sampling Log

Facility: Asbury CCR (Permit #) Monitoring Well ID: MW- 5A

Sample [X] Blind Duplicate [ ] Field Blank [ ].

Purge Information:

Method of Well Purge: **Peristaltic Pump with 3/8 - inch Diameter Tubing**

Actual Purge Volume Removed: 1800 mL post pump calibration.

Date / Time Initiated: 11 12 -24 @ 2:45 Date / Time Completed: 11 – 12 -24

Well Purged To Dryness?: Y / N Gas Detected? Y / N

Purge Data:

Time	Purge Rate (mL/min)	Cumulative Volume (mL)	Temp. (°C)	pH (SU)	Specific Conductivity (mS/cm)	Dissolved Oxygen (mg/L)	ORP (MV)	Turbidity ( )	Other (Color, Clarity, Odor)
2:48	200	600	18.8	6.70	4.141	1.02	105.9	10.81	Clear
:50	↓	1000	18.8	6.71	4.131	0.55	102.7	17.75	↓
:52	↓	1400	18.8	6.71	4.123	0.36	100.8	31.52	↓
:54	↓	1800	18.9	6.71	4.143	0.29	99.1	49.86	↓

Time sampled 2:55

Weather Conditions Sunny, 65°F

Water Level Start 11.02'

Water Level Finish 19.11'

Name (MEC Field Sampler): Ryan Ortbals and Rick Elgin

Sampler Signature

Field Inspection	Good	Fair	Poor
Access	G	F	P
Pad Condition	G	F	P
Casing Condition	G	F	P
Locking Cap & Lock	G	F	P
Riser Condition	G	F	P

Field Inspection	Yes	No	N/A
Well ID Visible	Y	N	N/A
Standing Water	Y	N	N/A
Clear of Weeds	Y	N	N/A
Measuring Point	Y	N	N/A
Split sample with MDNR	Y	N	N/A
Maintenance Performed	Y	N	N/A
Decontamination Normal	Y	N	N/A
Equipment Calibration Normal	Y	N	N/A
Redevelopment Needed	Y	N	N/A
Any deviations from SAP	Y	N	N/A
Sediment Thickness Checked	Y	N	N/A

Historical Data: Average of sampling events. Note: MW-5-AR first sampled May 2023

Constituent	Units	MW- 1	MW-2	MW-3	MW-4	MW-5	MW-5A	MW-5-AR
pH	S.U.	NO TEST	5.83	5.08	6.30	6.83	6.82	
Specific Conductance	umhos/cm	GW	0.786	1.132	2.083	0.841	1.769	
Total Well Depth	ft	Level						
Average GW Depth	ft	Only	1.24	0.4	5.39	1.32	6.92	
Average GW Drop	ft							
2 System Volumes (Min Purged Amount)	mL	DON'T SAMPLE	800	800	800	800	800	

2024 Field Sampling Log

Facility: Asbury CCR (Permit #) Monitoring Well ID: MW- 5AR

Sample [X] Blind Duplicate [ ] Field Blank [ ].

Purge Information:

Method of Well Purge: **Peristaltic Pump with 3/8 - inch Diameter Tubing**

Actual Purge Volume Removed: 1600 mL post pump calibration.

Date / Time Initiated: 11 12 -24 @ 3:20 Date / Time Completed: 11 – 12 -24

Well Purged To Dryness?: Y / N Gas Detected? Y / N

Purge Data:

Time	Purge Rate (mL/min)	Cumulative Volume (mL)	Temp. (°C)	pH (SU)	Specific Conductivity (mS/cm)	Dissolved Oxygen (mg/L)	ORP (MV)	Turbidity ( )	Other (Color, Clarity, Odor)
3:22	200	400	19.4	7.70	1.355	6.77	79.0	10.09	Clear
:24	↓	800	19.1	7.72	1.347	6.72	84.3	9.19	↓
:26		1200	18.9	7.72	1.346	6.70	87.6	10.15	
:28	↓	1600	18.9	7.72	1.346	6.69	88.7	10.25	↓

Time sampled 3:30

Weather Conditions Sunny, 65°F

Water Level Start 2.42'

Water Level Finish 10.75'

Name (MEC Field Sampler): Ryan Ortbals and Rick Elgin

Sampler Signature

Field Inspection	Good	Fair	Poor
Access	G	F	P
Pad Condition	G	F	P
Casing Condition	G	F	P
Locking Cap & Lock	G	F	P
Riser Condition	G	F	P

Field Inspection	Yes	No	N/A
Well ID Visible	Y	N	N/A
Standing Water	Y	N	N/A
Clear of Weeds	Y	N	N/A
Measuring Point	Y	N	N/A
Split sample with MDNR	Y	N	N/A
Maintenance Performed	Y	N	N/A
Decontamination Normal	Y	N	N/A
Equipment Calibration Normal	Y	N	N/A
Redevelopment Needed	Y	N	N/A
Any deviations from SAP	Y	N	N/A
Sediment Thickness Checked	Y	N	N/A

Historical Data: Average of sampling events. Note: MW-5-AR first sampled May 2023

Constituent	Units	MW- 1	MW-2	MW-3	MW-4	MW-5	MW-5A	MW-5-AR
pH	S.U.	NO TEST	5.83	5.08	6.30	6.83	6.82	
Specific Conductance	umhos/cm	GW	0.786	1.132	2.083	0.841	1.769	
Total Well Depth	ft	Level						
Average GW Depth	ft	Only	1.24	0.4	5.39	1.32	6.92	
Average GW Drop	ft							
2 System Volumes (Min Purged Amount)	mL	DON'T SAMPLE	800	800	800	800	800	

2024 Field Sampling Log

Facility: Asbury CCR (Permit #)

Monitoring Well ID: MW- 6

Sample [X] Blind Duplicate [ ] Field Blank [ ].

Purge Information:

Method of Well Purge: **Peristaltic Pump with 3/8 - inch Diameter Tubing**

Actual Purge Volume Removed: 1400 mL post pump calibration.

Date / Time Initiated: 11 – 12 -24 @ 2:10 Date / Time Completed: 11 – 12 -24

Well Purged To Dryness?: Y / N Gas Detected? Y / N

Purge Data:

Time	Purge Rate (mL/min)	Cumulative Volume (ml)	Temp. (°C)	pH (SU)	Specific Conductivity (mS/cm)	Dissolved Oxygen (mg/L)	ORP (MV)	Turbidity ( )	Other (Color, Clarity, Odor)
2:11	200	300	16.0	6.95	2.476	0.92	50.6	129.23	Clear
:13	↓	600	16.1	7.01	2.479	1.75	62.4	27.80	↓
:15	↓	1000	17.8	7.00	2.477	0.56	61.2	49.92	↓
:17	↓	1400	17.9	7.01	2.471	0.33	59.4	49.57	↓

Time sampled 2:20

Weather Conditions Sunny, 65°F

Water Level Start 11.19'

Water Level Finish 19.42'

Name (MEC Field Sampler): Ryan Ortbals and Rick Elgin

Sampler Signature

Field Inspection	Good	Fair	Poor
Access	G	F	P
Pad Condition	G	F	P
Casing Condition	G	F	P
Locking Cap & Lock	G	F	P
Riser Condition	G	F	P

Field Inspection	Yes	No	N/A
Well ID Visible	Y	N	N/A
Standing Water	Y	N	N/A
Clear of Weeds	Y	N	N/A
Measuring Point	Y	N	N/A
Split sample with MDNR	Y	N	N/A
Maintenance Performed	Y	N	N/A
Decontamination Normal	Y	N	N/A
Equipment Calibration Normal	Y	N	N/A
Redevelopment Needed	Y	N	N/A
Any deviations from SAP	Y	N	N/A
Sediment Thickness Checked	Y	N	N/A

Historical Data: Average of sampling events

Constituent	Units	MW- 6	MW- 6A	MW-7					
pH	S.U.	6.72	6.87	6.12					
Specific Conductance	umhos/cm	1.900	1.601	2.699					
Total Well Depth	ft								
Average GW Depth	ft	7.86	7.28	3.04					
Average GW Drop	ft								
2 System Volumes (Min Purged Amount)	mL	800	800	800					

2024 Field Sampling Log

Facility: Asbury CCR (Permit #) Monitoring Well ID: MW- 6A

Sample [X] Blind Duplicate [ ] Field Blank [ ].

Purge Information:

Method of Well Purge: **Peristaltic Pump with 3/8 - inch Diameter Tubing**

Actual Purge Volume Removed: 2000 mL post pump calibration.

Date / Time Initiated: 11 – 12 -24 @ 1:30 Date / Time Completed: 11 – 13 -24

Well Purged To Dryness?: Y / N Gas Detected? Y / N

Purge Data:

Time	Purge Rate (mL/min)	Cumulative Volume (ml)	Temp. (°C)	pH (SU)	Specific Conductivity (mS/cm)	Dissolved Oxygen (mg/L)	ORP (MV)	Turbidity ( )	Other (Color, Clarity, Odor)
1:34	200	800	18.6	6.15	2.842	0.92	-21.3	40.67	Clear
0:36	↓	1200	18.5	6.16	2.842	0.53	-23.5	41.91	↓
:38		1600	18.5	6.16	2.840	0.37	-25.3	38.83	
:40	↓	2000	18.6	6.16	2.837	0.20	-26.5	50.75	

Time sampled 1:40

Weather Conditions Sunny, 65°F

Water Level Start 9.95'

Water Level Finish 18.29'

Name (MEC Field Sampler): Ryan Ortbals and Rick Elgin

Sampler Signature

Field Inspection	Good	Fair	Poor
Access	G	F	P
Pad Condition	G	F	P
Casing Condition	G	F	P
Locking Cap & Lock	G	F	P
Riser Condition	G	F	P

Field Inspection	Yes	No	N/A
Well ID Visible	Y	N	N/A
Standing Water	Y	N	N/A
Clear of Weeds	Y	N	N/A
Measuring Point	Y	N	N/A
Split sample with MDNR	Y	N	N/A
Maintenance Performed	Y	N	N/A
Decontamination Normal	Y	N	N/A
Equipment Calibration Normal	Y	N	N/A
Redevelopment Needed	Y	N	N/A
Any deviations from SAP	Y	N	N/A
Sediment Thickness Checked	Y	N	N/A

Historical Data: Average of sampling events

Constituent	Units	MW- 6	MW- 6A	MW-7
pH	S.U.	6.72	6.87	6.12
Specific Conductance	umhos/cm	1.900	1.601	2.699
Total Well Depth	ft			
Average GW Depth	ft	7.86	7.28	3.04
Average GW Drop	ft			
2 System Volumes (Min Purged Amount)	mL	800	800	800

2024 Field Sampling Log

Facility: Asbury CCR (Permit #) Monitoring Well ID: MW- 7

Sample [X] Blind Duplicate [ ] Field Blank [ ].

Purge Information:

Method of Well Purge: **Peristaltic Pump with 3/8 - inch Diameter Tubing**

Actual Purge Volume Removed: 1600 mL post pump calibration.

Date / Time Initiated: 11 – 12 -24 @ 1:00 Date / Time Completed: 11 – 12 -24

Well Purged To Dryness?: Y (N) Gas Detected? Y / (N)

Purge Data:

Time	Purge Rate (mL/min)	Cumulative Volume (ml)	Temp. (°C)	pH (SU)	Specific Conductivity (mS/cm)	Dissolved Oxygen (mg/L)	ORP (MV)	Turbidity ( )	Other (Color, Clarity, Odor)
1:07	200	400	18.0	6.29	3.106	1.77	-32.2	83.48	Clear
1:04	↓	800	17.9	6.29	3.120	0.50	-36.2	45.40	↓
:06		1200	17.8	6.30	3.122	0.35	-37.6	33.72	
:08	↓	1600	17.8	6.30	3.120	0.27	-38.8	23.41	↓

Time sampled 1:10

Weather Conditions Sunny, 60°F

Water Level Start 5.82'

Water Level Finish 5.85'

Name (MEC Field Sampler): Ryan Ortbals and Rick Elgin

Sampler Signature

Field Inspection	Good	Fair	Poor
Access	(G)	F	P
Pad Condition	(G)	F	P
Casing Condition	(G)	F	P
Locking Cap & Lock	(G)	F	P
Riser Condition	(G)	F	P

Field Inspection	Yes	No	N/A
Well ID Visible	(Y)	N	N/A
Standing Water	Y	(N)	N/A
Clear of Weeds	(Y)	N	N/A
Measuring Point	(Y)	N	N/A
Split sample with MDNR	Y	(N)	N/A
Maintenance Performed	Y	(N)	N/A
Decontamination Normal	(Y)	N	N/A
Equipment Calibration Normal	(Y)	N	N/A
Redevelopment Needed	Y	(N)	N/A
Any deviations from SAP	Y	(N)	N/A
Sediment Thickness Checked	Y	(N)	N/A

Historical Data: Average of sampling events 2

Constituent	Units	MW- 6	MW- 6A	MW-7					
pH	S.U.	6.72	6.87	6.12					
Specific Conductance	umhos/cm	1.900	1.601	2.699					
Total Well Depth	ft								
Average GW Depth	ft	7.86	7.28	3.04					
Average GW Drop	ft								
2 System Volumes (Min Purged Amount)	mL	800	800	800					

APPENDIX 3

Analytical Results

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Mr. Rick Elgin
Midwest Environmental Consultants
2009 East McCarty Street
Suite 2
Jefferson City, Missouri 65101

Generated 12/19/2024 11:23:05 AM

JOB DESCRIPTION

Asbury Pond CCR

JOB NUMBER

180-182762-2

Eurofins Pittsburgh
301 Alpha Drive
RIDC Park
Pittsburgh PA 15238

See page two for job notes and contact information.

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

PA Lab ID: 02-00416

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Pittsburgh Project Manager.

Authorization

Generated
12/19/2024 11:23:05 AM

Authorized for release by
Gail Lage, Senior Project Manager
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(615)301-5741

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Job Narrative
180-182762-2

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 11/14/2024 9:10 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 3.5°C and 4.1°C.

HPLC/IC
Method 9056A_ORGFM_28D: The following samples were diluted due to the nature of the sample matrix: MW-2 (180-182762-1), MW-3 (180-182762-2), MW-4 (180-182762-3) and DUPLICATE (AT MW-) (180-182762-10). Elevated reporting limits (RLs) are provided.

Method 9056A_ORGFM_28D: The following sample was diluted due to the nature of the sample matrix: MW-5A (180-182762-5). Elevated reporting limits (RLs) are provided.

Method 9056A_ORGFM_28D: The following sample was diluted to bring the concentration of target analytes within the calibration range: MW-6A (180-182762-8). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry
Method 2540C_Calcd: Due to conductivity and matrix, initial amount of sample used was reduced.
MW-5A (180-182762-5) and MW-7 (180-182762-9)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Gas Flow Proportional Counter
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Rad
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Definitions/Glossary

Client: Midwest Environmental Consultants
Job ID: 180-182762-2
Project/Site: Asbury Pond CCR

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
F1	MS and/or MSD recovery exceeds control limits.
F3	Duplicate RPD exceeds the control limit
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Rad

Qualifier	Qualifier Description
U	Result is less than the sample detection limit.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Accreditation/Certification Summary

Client: Midwest Environmental Consultants
Job ID: 180-182762-2
Project/Site: Asbury Pond CCR

Laboratory: Eurofins Pittsburgh

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arkansas DEQ	State	19-033-0	06-28-25
California	State	2891	04-30-24 *
Connecticut	State	PH-0688	09-30-24 *
Florida	NELAP	E871008	06-30-25
Georgia	State	PA 02-00416	04-30-25
Illinois	NELAP	004375	07-31-25
Kansas	NELAP	E-10350	01-31-25
Kentucky (UST)	State	162013	04-30-25
Kentucky (WW)	State	KY98043	12-31-24
Louisiana	NELAP	04041	06-30-22 *
Louisiana (All)	NELAP	04041	06-30-25
Maine	State	PA00164	03-06-26
Minnesota	NELAP	042-999-482	12-31-24
New Hampshire	NELAP	2030	04-04-25
New Jersey	NELAP	PA005	06-30-25
New York	NELAP	11182	04-01-25
North Carolina (WW/SW)	State	434	12-31-24
North Dakota	State	R-227	04-30-24 *
Oregon	NELAP	PA-2151	02-06-25
Pennsylvania	NELAP	02-00416	12-05-24
Rhode Island	State	LAO00362	01-01-25
South Carolina	State	89014	04-30-25
Texas	NELAP	T104704528	03-31-25
US Fish & Wildlife	US Federal Programs	058448	04-30-25
USDA	US Federal Programs	P330-16-00211	04-11-26
Utah	NELAP	PA001462024-14	05-31-25
Virginia	NELAP	10043	07-14-24 *
West Virginia DEP	State	142	01-31-25
Wisconsin	State	998027800	08-31-25

Laboratory: Eurofins Cedar Falls

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Colorado	Petroleum Storage Tank Program	IA100001 (OR)	09-29-25
Georgia	State	IA100001 (OR)	09-29-25
Illinois	NELAP	200024	12-15-24
Iowa	State	007	12-01-25
Kansas	NELAP	E-10341	01-31-25
Minnesota	NELAP	019-999-319	12-31-25
Minnesota (Petrofund)	State	3349	01-18-26
North Dakota	State	R-186	09-29-24 *
Oregon	NELAP	IA100001	09-29-25

Laboratory: Eurofins St. Louis

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-001	05-06-25
ANAB	Dept. of Defense ELAP	L2305	04-06-25
ANAB	Dept. of Energy	L2305.01	04-08-25

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Client: Midwest Environmental Consultants
Job ID: 180-182762-2
Project/Site: Asbury Pond CCR

Laboratory: Eurofins St. Louis (Continued)

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
ANAB	ISO/IEC 17025	L2305	04-06-25
Arizona	State	AZ0813	12-08-25
California	Los Angeles County Sanitation Districts	10259	06-30-22 *
California	State	2886	06-30-25
Connecticut	State	PH-0241	03-31-25
Florida	NELAP	E87689	06-30-25
HI - RadChem Recognition	State	n/a	06-30-25
Illinois	NELAP	200023	11-30-25
Iowa	State	373	12-01-26
Kansas	NELAP	E-10236	10-31-25
Kentucky (DW)	State	KY90125	12-31-24
Kentucky (WW)	State	KY90125 (Permit KY0004049)	12-31-24
Louisiana	NELAP	04080	06-30-22 *
Louisiana (All)	NELAP	04080	06-30-25
Louisiana (DW)	State	LA011	12-31-24
Maryland	State	310	09-30-25
Massachusetts	State	M-MO054	06-30-25
MI - RadChem Recognition	State	9005	06-30-25
Missouri	State	780	06-30-25
Nevada	State	MO00054	07-31-25
New Jersey	NELAP	MO002	06-30-25
New Mexico	State	MO00054	06-30-25
New York	NELAP	11616	03-31-25
North Carolina (DW)	State	29700	07-31-25
North Dakota	State	R-207	12-31-24
Oklahoma	NELAP	9997	12-31-24
Oregon	NELAP	4157	09-01-25
Pennsylvania	NELAP	68-00540	02-28-25
South Carolina	State	85002001	06-30-25
Texas	NELAP	T104704193	07-31-25
US Fish & Wildlife	US Federal Programs	058448	07-31-25
USDA	US Federal Programs	P330-17-00028	05-18-26
Utah	NELAP	MO00054	07-31-25
Virginia	NELAP	460230	06-14-25
Washington	State	C592	08-30-25
West Virginia DEP	State	381	10-31-25

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Sample Summary

Client: Midwest Environmental Consultants
Project/Site: Asbury Pond CCR

Job ID: 180-182762-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
180-182762-1	MW-2	Water	11/13/24 09:25	11/14/24 09:10
180-182762-2	MW-3	Water	11/13/24 10:10	11/14/24 09:10
180-182762-3	MW-4	Water	11/13/24 08:25	11/14/24 09:10
180-182762-4	MW-5	Water	11/12/24 04:05	11/14/24 09:10
180-182762-5	MW-5A	Water	11/12/24 02:55	11/14/24 09:10
180-182762-6	MW-5AR	Water	11/12/24 03:30	11/14/24 09:10
180-182762-7	MW-6	Water	11/12/24 02:20	11/14/24 09:10
180-182762-8	MW-6A	Water	11/12/24 01:40	11/14/24 09:10
180-182762-9	MW-7	Water	11/12/24 01:10	11/14/24 09:10
180-182762-10	DUPLICATE (AT MW-)	Water	11/12/24 04:20	11/14/24 09:10
180-182762-11	FIELD BLANK	Water	11/13/24 10:20	11/14/24 09:10

Method Summary

Client: Midwest Environmental Consultants
Project/Site: Asbury Pond CCR

Job ID: 180-182762-2

Method	Method Description	Protocol	Laboratory
EPA 9056A	Anions, Ion Chromatography	SW846	EET PIT
EPA 6020B	Metals (ICP/MS)	SW846	EET CF
EPA 7470A	Mercury (CVAA)	SW846	EET CF
SM 2540C	Solids, Total Dissolved (TDS)	SM	EET PIT
9315	Radium-226 (GFPC)	SW846	EET SL
9320	Radium-228 (GFPC)	SW846	EET SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	EET SL
Field Sampling	Field Sampling	EPA	EET PIT
3005A	Preparation, Total Metals	SW846	EET CF
7470A	Preparation, Mercury	SW846	EET CF
PrecSep_0	Preparation, Precipitate Separation	None	EET SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	EET SL

Protocol References:

EPA = US Environmental Protection Agency
None = None
SM = "Standard Methods For The Examination Of Water And Wastewater"
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.
TAL-STL = TestAmerica Laboratories, St. Louis, Facility Standard Operating Procedure.

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401
EET PIT = Eurofins Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058
EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Lab Chronicle

Client: Midwest Environmental Consultants
Project/Site: Asbury Pond CCR

Job ID: 180-182762-2

Client Sample ID: MW-2

Date Collected: 11/13/24 09:25
Date Received: 11/14/24 09:10

Lab Sample ID: 180-182762-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 9056A		2	1 mL	1 mL	484626	11/18/24 20:11	ERP	EET PIT
	Instrument ID: CHICS2100B									
Total/NA	Prep	3005A			50 mL	50 mL	440098	11/19/24 09:30	F5MW	EET CF
Total/NA	Analysis	EPA 6020B		1			440318	11/19/24 17:07	A6US	EET CF
	Instrument ID: ICPMS7850									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	484481	11/15/24 10:42	EBA	EET PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	Field Sampling		1			484508	11/13/24 10:25	GAL	EET PIT
	Instrument ID: NOEQUIP									

Client Sample ID: MW-3

Date Collected: 11/13/24 10:10
Date Received: 11/14/24 09:10

Lab Sample ID: 180-182762-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 9056A		1	1 mL	1 mL	484626	11/18/24 20:26	ERP	EET PIT
	Instrument ID: CHICS2100B									
Total/NA	Analysis	EPA 9056A		5	1 mL	1 mL	484626	11/18/24 20:43	ERP	EET PIT
	Instrument ID: CHICS2100B									
Total/NA	Prep	3005A			50 mL	50 mL	440098	11/19/24 09:30	F5MW	EET CF
Total/NA	Analysis	EPA 6020B		1			440318	11/19/24 17:09	A6US	EET CF
	Instrument ID: ICPMS7850									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	484481	11/15/24 10:42	EBA	EET PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	Field Sampling		1			484508	11/13/24 11:10	GAL	EET PIT
	Instrument ID: NOEQUIP									

Client Sample ID: MW-4

Date Collected: 11/13/24 08:25
Date Received: 11/14/24 09:10

Lab Sample ID: 180-182762-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 9056A		1	1 mL	1 mL	484626	11/18/24 20:58	ERP	EET PIT
	Instrument ID: CHICS2100B									
Total/NA	Analysis	EPA 9056A		10	1 mL	1 mL	484626	11/18/24 21:13	ERP	EET PIT
	Instrument ID: CHICS2100B									
Total/NA	Prep	3005A			50 mL	50 mL	440098	11/19/24 09:30	F5MW	EET CF
Total/NA	Analysis	EPA 6020B		1			440318	11/19/24 17:24	A6US	EET CF
	Instrument ID: ICPMS7850									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	484481	11/15/24 10:42	EBA	EET PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	Field Sampling		1			484508	11/13/24 09:25	GAL	EET PIT
	Instrument ID: NOEQUIP									

Lab Chronicle

Client: Midwest Environmental Consultants
Project/Site: Asbury Pond CCR

Job ID: 180-182762-2

Client Sample ID: MW-5

Date Collected: 11/12/24 04:05
Date Received: 11/14/24 09:10

Lab Sample ID: 180-182762-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 9056A		1	1 mL	1 mL	484539	11/16/24 18:18	M1D	EET PIT
	Instrument ID: CHICS2100B									
Total/NA	Prep	3005A			50 mL	50 mL	440098	11/19/24 09:30	F5MW	EET CF
Total/NA	Analysis	EPA 6020B		1			440318	11/19/24 17:27	A6US	EET CF
	Instrument ID: ICPMS7850									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	484481	11/15/24 10:42	EBA	EET PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	Field Sampling		1			484508	11/12/24 05:05	GAL	EET PIT
	Instrument ID: NOEQUIP									

Client Sample ID: MW-5A

Date Collected: 11/12/24 02:55
Date Received: 11/14/24 09:10

Lab Sample ID: 180-182762-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 9056A		2	1 mL	1 mL	484539	11/16/24 19:47	M1D	EET PIT
	Instrument ID: CHICS2100B									
Total/NA	Analysis	EPA 9056A		20	1 mL	1 mL	484539	11/16/24 20:01	M1D	EET PIT
	Instrument ID: CHICS2100B									
Total/NA	Prep	3005A			50 mL	50 mL	440098	11/19/24 09:30	F5MW	EET CF
Total/NA	Analysis	EPA 6020B		1			440318	11/19/24 17:30	A6US	EET CF
	Instrument ID: ICPMS7850									
Total/NA	Prep	3005A			50 mL	50 mL	440098	11/19/24 09:30	F5MW	EET CF
Total/NA	Analysis	EPA 6020B		4			440399	11/20/24 13:14	A6US	EET CF
	Instrument ID: ICPMS7850									
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	484482	11/15/24 10:48	EBA	EET PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	Field Sampling		1			484508	11/12/24 03:55	GAL	EET PIT
	Instrument ID: NOEQUIP									

Client Sample ID: MW-5AR

Date Collected: 11/12/24 03:30
Date Received: 11/14/24 09:10

Lab Sample ID: 180-182762-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 9056A		1	1 mL	1 mL	484539	11/16/24 18:48	M1D	EET PIT
	Instrument ID: CHICS2100B									
Total/NA	Analysis	EPA 9056A		5	1 mL	1 mL	484539	11/16/24 19:02	M1D	EET PIT
	Instrument ID: CHICS2100B									
Total/NA	Prep	3005A			50 mL	50 mL	440098	11/19/24 09:30	F5MW	EET CF
Total/NA	Analysis	EPA 6020B		1			440318	11/19/24 17:33	A6US	EET CF
	Instrument ID: ICPMS7850									
Total/NA	Prep	7470A			30 mL	40 mL	441704	12/10/24 11:00	QTZ5	EET CF
Total/NA	Analysis	EPA 7470A		1			442141	12/10/24 15:02	QTZ5	EET CF
	Instrument ID: Juliet									

Lab Chronicle

Client: Midwest Environmental Consultants
Job ID: 180-182762-2
Project/Site: Asbury Pond CCR

Client Sample ID: MW-5AR
Lab Sample ID: 180-182762-6
Date Collected: 11/12/24 03:30
Matrix: Water
Date Received: 11/14/24 09:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	484481	11/15/24 10:42	EBA	EET PIT
Total/NA	Prep	PrecSep-21			998.16 mL	1.0 g	689539	11/20/24 09:36	BCE	EET SL
Total/NA	Analysis	9315		1			693277	12/12/24 07:39	SCB	EET SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep_0			998.16 mL	1.0 g	689540	11/20/24 09:42	BCE	EET SL
Total/NA	Analysis	9320		1			691990	12/05/24 14:08	SCB	EET SL
	Instrument ID: GFPCPURPLE									
Total/NA	Analysis	Ra226_Ra228		1			694016	12/16/24 15:15	FLC	EET SL
	Instrument ID: NOEQUIP									
Total/NA	Analysis	Field Sampling		1			484508	11/12/24 04:30	GAL	EET PIT
	Instrument ID: NOEQUIP									

Client Sample ID: MW-6
Lab Sample ID: 180-182762-7
Date Collected: 11/12/24 02:20
Matrix: Water
Date Received: 11/14/24 09:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 9056A		1	1 mL	1 mL	484539	11/16/24 20:16	M1D	EET PIT
	Instrument ID: CHICS2100B									
Total/NA	Analysis	EPA 9056A		10	1 mL	1 mL	484539	11/16/24 20:31	M1D	EET PIT
	Instrument ID: CHICS2100B									
Total/NA	Prep	3005A			50 mL	50 mL	440098	11/19/24 09:30	F5MW	EET CF
Total/NA	Analysis	EPA 6020B		1			440318	11/19/24 17:35	A6US	EET CF
	Instrument ID: ICPMS7850									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	484481	11/15/24 10:42	EBA	EET PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	Field Sampling		1			484508	11/12/24 03:20	GAL	EET PIT
	Instrument ID: NOEQUIP									

Client Sample ID: MW-6A
Lab Sample ID: 180-182762-8
Date Collected: 11/12/24 01:40
Matrix: Water
Date Received: 11/14/24 09:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 9056A		1	1 mL	1 mL	484539	11/16/24 20:46	M1D	EET PIT
	Instrument ID: CHICS2100B									
Total/NA	Analysis	EPA 9056A		10	1 mL	1 mL	485940	12/05/24 15:12	M1D	EET PIT
	Instrument ID: INTEGRION									
Total/NA	Prep	3005A			50 mL	50 mL	440098	11/19/24 09:30	F5MW	EET CF
Total/NA	Analysis	EPA 6020B		1			440318	11/19/24 17:38	A6US	EET CF
	Instrument ID: ICPMS7850									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	484481	11/15/24 10:42	EBA	EET PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	Field Sampling		1			484508	11/12/24 02:40	GAL	EET PIT
	Instrument ID: NOEQUIP									

Lab Chronicle

Client: Midwest Environmental Consultants
Project/Site: Asbury Pond CCR

Job ID: 180-182762-2

Client Sample ID: MW-7

Lab Sample ID: 180-182762-9

Date Collected: 11/12/24 01:10

Matrix: Water

Date Received: 11/14/24 09:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 9056A		1	1 mL	1 mL	484539	11/16/24 21:16	M1D	EET PIT
	Instrument ID: CHICS2100B									
Total/NA	Analysis	EPA 9056A		10	1 mL	1 mL	484539	11/16/24 21:30	M1D	EET PIT
	Instrument ID: CHICS2100B									
Total/NA	Prep	3005A			50 mL	50 mL	440099	11/19/24 09:30	F5MW	EET CF
Total/NA	Analysis	EPA 6020B		1			440318	11/19/24 18:50	A6US	EET CF
	Instrument ID: ICPMS7850									
Total/NA	Prep	3005A			50 mL	50 mL	440099	11/19/24 09:30	F5MW	EET CF
Total/NA	Analysis	EPA 6020B		4			440399	11/20/24 13:22	A6US	EET CF
	Instrument ID: ICPMS7850									
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	484482	11/15/24 10:48	EBA	EET PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	Field Sampling		1			484508	11/12/24 02:10	GAL	EET PIT
	Instrument ID: NOEQUIP									

Client Sample ID: DUPLICATE (AT MW-)

Lab Sample ID: 180-182762-10

Date Collected: 11/12/24 04:20

Matrix: Water

Date Received: 11/14/24 09:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 9056A		2	1 mL	1 mL	484626	11/18/24 21:28	ERP	EET PIT
	Instrument ID: CHICS2100B									
Total/NA	Prep	3005A			50 mL	50 mL	440099	11/19/24 09:30	F5MW	EET CF
Total/NA	Analysis	EPA 6020B		1			440318	11/19/24 18:53	A6US	EET CF
	Instrument ID: ICPMS7850									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	484481	11/15/24 10:42	EBA	EET PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	Field Sampling		1			484508	11/12/24 05:20	GAL	EET PIT
	Instrument ID: NOEQUIP									

Client Sample ID: FIELD BLANK

Lab Sample ID: 180-182762-11

Date Collected: 11/13/24 10:20

Matrix: Water

Date Received: 11/14/24 09:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 9056A		1	1 mL	1 mL	484597	11/18/24 21:15	ERP	EET PIT
	Instrument ID: INUVION									
Total/NA	Prep	3005A			50 mL	50 mL	440099	11/19/24 09:30	F5MW	EET CF
Total/NA	Analysis	EPA 6020B		1			440318	11/19/24 18:56	A6US	EET CF
	Instrument ID: ICPMS7850									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	484481	11/15/24 10:42	EBA	EET PIT
	Instrument ID: NOEQUIP									

Lab Chronicle

Client: Midwest Environmental Consultants
Project/Site: Asbury Pond CCR

Job ID: 180-182762-2

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

EET PIT = Eurofins Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Analyst References:

Lab: EET CF
- Batch Type: Prep
  - F5MW = Alexander Wilmer
  - QTZ5 = Anna Martinez
- Batch Type: Analysis
  - A6US = Orijit Kar
  - QTZ5 = Anna Martinez

Lab: EET PIT
- Batch Type: Analysis
  - EBA = Elizabeth Arbster
  - ERP = Evan Papak
  - GAL = Gail Lage
  - M1D = Maureen Donlin

Lab: EET SL
- Batch Type: Prep
  - BCE = Benjamin Celeslie
- Batch Type: Analysis
  - FLC = Fernando Cruz
  - SCB = Sarah Bernsen

Client: Midwest Environmental Consultants
Job ID: 180-182762-2
Project/Site: Asbury Pond CCR

Client Sample ID: MW-2
Lab Sample ID: 180-182762-1
Date Collected: 11/13/24 09:25
Matrix: Water
Date Received: 11/14/24 09:10

Method: SW846 EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	110		2.0	1.4	mg/L			11/18/24 20:11	2
Fluoride	0.16	J	0.20	0.052	mg/L			11/18/24 20:11	2
Sulfate	92		2.0	1.5	mg/L			11/18/24 20:11	2

Method: SW846 EPA 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	93	J	100	76	ug/L		11/19/24 09:30	11/19/24 17:07	1
Calcium	23000		500	190	ug/L		11/19/24 09:30	11/19/24 17:07	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	350		10	10	mg/L			11/15/24 10:42	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	NONE	Unit	D	Prepared	Analyzed	Dil Fac
pH	5.67				SU			11/13/24 10:25	1

Client Sample Results

Client: Midwest Environmental Consultants
Job ID: 180-182762-2
Project/Site: Asbury Pond CCR

Client Sample ID: MW-3
Lab Sample ID: 180-182762-2
Date Collected: 11/13/24 10:10
Matrix: Water
Date Received: 11/14/24 09:10

Method: SW846 EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	52		1.0	0.71	mg/L			11/18/24 20:26	1
Fluoride	0.13		0.10	0.026	mg/L			11/18/24 20:26	1
Sulfate	520		5.0	3.8	mg/L			11/18/24 20:43	5

Method: SW846 EPA 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		100	76	ug/L		11/19/24 09:30	11/19/24 17:09	1
Calcium	100000		500	190	ug/L		11/19/24 09:30	11/19/24 17:09	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	890		10	10	mg/L			11/15/24 10:42	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	NONE	Unit	D	Prepared	Analyzed	Dil Fac
pH	5.80				SU			11/13/24 11:10	1

Client Sample Results

Client: Midwest Environmental Consultants
Job ID: 180-182762-2
Project/Site: Asbury Pond CCR

Client Sample ID: MW-4
Lab Sample ID: 180-182762-3
Date Collected: 11/13/24 08:25
Matrix: Water
Date Received: 11/14/24 09:10

Method: SW846 EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	16		1.0	0.71	mg/L			11/18/24 20:58	1
Fluoride	0.097	J	0.10	0.026	mg/L			11/18/24 20:58	1
Sulfate	500		10	7.6	mg/L			11/18/24 21:13	10

Method: SW846 EPA 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		100	76	ug/L		11/19/24 09:30	11/19/24 17:24	1
Calcium	240000		500	190	ug/L		11/19/24 09:30	11/19/24 17:24	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	1300		10	10	mg/L			11/15/24 10:42	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	NONE	Unit	D	Prepared	Analyzed	Dil Fac
pH	6.79				SU			11/13/24 09:25	1

Client Sample Results

Client: Midwest Environmental Consultants
Job ID: 180-182762-2
Project/Site: Asbury Pond CCR

Client Sample ID: MW-5
Lab Sample ID: 180-182762-4

Date Collected: 11/12/24 04:05
Matrix: Water

Date Received: 11/14/24 09:10

Method: SW846 EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	5.9		1.0	0.71	mg/L			11/16/24 18:18	1
Fluoride	0.29		0.10	0.026	mg/L			11/16/24 18:18	1
Sulfate	150		1.0	0.76	mg/L			11/16/24 18:18	1

Method: SW846 EPA 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	270		100	76	ug/L		11/19/24 09:30	11/19/24 17:27	1
Calcium	87000		500	190	ug/L		11/19/24 09:30	11/19/24 17:27	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	570		10	10	mg/L			11/15/24 10:42	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	NONE	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.25				SU			11/12/24 05:05	1

Client Sample Results

Client: Midwest Environmental Consultants
Project/Site: Asbury Pond CCR

Job ID: 180-182762-2

Client Sample ID: MW-5A

Date Collected: 11/12/24 02:55
Date Received: 11/14/24 09:10

Lab Sample ID: 180-182762-5

Matrix: Water

Method: SW846 EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	180		2.0	1.4	mg/L			11/16/24 19:47	2
Fluoride	0.22		0.20	0.052	mg/L			11/16/24 19:47	2
Sulfate	1900		20	15	mg/L			11/16/24 20:01	20

Method: SW846 EPA 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	2000		100	76	ug/L		11/19/24 09:30	11/19/24 17:30	1
Calcium	450000		2000	760	ug/L		11/19/24 09:30	11/20/24 13:14	4

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	3200		20	20	mg/L			11/15/24 10:48	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	NONE	Unit	D	Prepared	Analyzed	Dil Fac
pH	6.71				SU			11/12/24 03:55	1

Client Sample ID: MW-5AR

Date Collected: 11/12/24 03:30
Date Received: 11/14/24 09:10

Lab Sample ID: 180-182762-6

Matrix: Water

Method: SW846 EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**8.1**		1.0	0.71	mg/L			11/16/24 18:48	1
Fluoride	**0.19**		0.10	0.026	mg/L			11/16/24 18:48	1
Sulfate	**430**		5.0	3.8	mg/L			11/16/24 19:02	5

Method: SW846 EPA 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		2.0	1.0	ug/L		11/19/24 09:30	11/19/24 17:33	1
Arsenic	ND		2.0	0.53	ug/L		11/19/24 09:30	11/19/24 17:33	1
Barium	**13**		2.0	0.66	ug/L		11/19/24 09:30	11/19/24 17:33	1
Beryllium	ND		1.0	0.33	ug/L		11/19/24 09:30	11/19/24 17:33	1
Boron	**390**		100	76	ug/L		11/19/24 09:30	11/19/24 17:33	1
Cadmium	ND		0.20	0.10	ug/L		11/19/24 09:30	11/19/24 17:33	1
Calcium	**99000**		500	190	ug/L		11/19/24 09:30	11/19/24 17:33	1
Chromium	ND		5.0	1.2	ug/L		11/19/24 09:30	11/19/24 17:33	1
Cobalt	ND		0.50	0.17	ug/L		11/19/24 09:30	11/19/24 17:33	1
Lead	ND		0.50	0.26	ug/L		11/19/24 09:30	11/19/24 17:33	1
Lithium	**130**		10	2.5	ug/L		11/19/24 09:30	11/19/24 17:33	1
Molybdenum	ND		2.0	1.3	ug/L		11/19/24 09:30	11/19/24 17:33	1
Selenium	ND		5.0	1.4	ug/L		11/19/24 09:30	11/19/24 17:33	1
Thallium	ND		1.0	0.57	ug/L		11/19/24 09:30	11/19/24 17:33	1

Method: SW846 EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00011	mg/L		12/10/24 11:00	12/10/24 15:02	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**900**		10	10	mg/L			11/15/24 10:42	1

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.733**		0.160	0.173	1.00	0.101	pCi/L	11/20/24 09:36	12/12/24 07:39	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*91.4*		*30 - 110*	*11/20/24 09:36*	*12/12/24 07:39*	*1*

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	**0.781**		0.410	0.417	1.00	0.569	pCi/L	11/20/24 09:42	12/05/24 14:08	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*91.4*		*30 - 110*	*11/20/24 09:42*	*12/05/24 14:08*	*1*
Y Carrier	*74.8*		*30 - 110*	*11/20/24 09:42*	*12/05/24 14:08*	*1*

Client: Midwest Environmental Consultants
Job ID: 180-182762-2
Project/Site: Asbury Pond CCR

Client Sample ID: MW-5AR
Lab Sample ID: 180-182762-6

Date Collected: 11/12/24 03:30
Matrix: Water

Date Received: 11/14/24 09:10

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.51		0.440	0.451	5.00	0.569	pCi/L		12/16/24 15:15	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	NONE	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.72				SU			11/12/24 04:30	1

Client: Midwest Environmental Consultants
Job ID: 180-182762-2
Project/Site: Asbury Pond CCR

Client Sample ID: MW-6
Lab Sample ID: 180-182762-7
Date Collected: 11/12/24 02:20
Matrix: Water
Date Received: 11/14/24 09:10

Method: SW846 EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	45		1.0	0.71	mg/L			11/16/24 20:16	1
Fluoride	0.22		0.10	0.026	mg/L			11/16/24 20:16	1
Sulfate	1100		10	7.6	mg/L			11/16/24 20:31	10

Method: SW846 EPA 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	350		100	76	ug/L		11/19/24 09:30	11/19/24 17:35	1
Calcium	280000		500	190	ug/L		11/19/24 09:30	11/19/24 17:35	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	1800		10	10	mg/L			11/15/24 10:42	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	NONE	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.01				SU			11/12/24 03:20	1

Client Sample Results

Client: Midwest Environmental Consultants
Project/Site: Asbury Pond CCR

Job ID: 180-182762-2

Client Sample ID: MW-6A

Date Collected: 11/12/24 01:40
Date Received: 11/14/24 09:10

Lab Sample ID: 180-182762-8

Matrix: Water

Method: SW846 EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	81		1.0	0.71	mg/L			11/16/24 20:46	1
Fluoride	0.15		0.10	0.026	mg/L			11/16/24 20:46	1
Sulfate	1000		10	7.6	mg/L			12/05/24 15:12	10

Method: SW846 EPA 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	220		100	76	ug/L		11/19/24 09:30	11/19/24 17:38	1
Calcium	190000		500	190	ug/L		11/19/24 09:30	11/19/24 17:38	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	1500		10	10	mg/L			11/15/24 10:42	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	NONE	Unit	D	Prepared	Analyzed	Dil Fac
pH	6.16				SU			11/12/24 02:40	1

Client: Midwest Environmental Consultants
Job ID: 180-182762-2
Project/Site: Asbury Pond CCR

Client Sample ID: MW-7
Lab Sample ID: 180-182762-9

Date Collected: 11/12/24 01:10
Matrix: Water
Date Received: 11/14/24 09:10

Method: SW846 EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	49		1.0	0.71	mg/L			11/16/24 21:16	1
Fluoride	0.16		0.10	0.026	mg/L			11/16/24 21:16	1
Sulfate	1800		10	7.6	mg/L			11/16/24 21:30	10

Method: SW846 EPA 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	240		100	76	ug/L		11/19/24 09:30	11/19/24 18:50	1
Calcium	570000		2000	760	ug/L		11/19/24 09:30	11/20/24 13:22	4

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	2800		20	20	mg/L			11/15/24 10:48	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	NONE	Unit	D	Prepared	Analyzed	Dil Fac
pH	6.70				SU			11/12/24 02:10	1

Client: Midwest Environmental Consultants
Job ID: 180-182762-2
Project/Site: Asbury Pond CCR

Client Sample ID: DUPLICATE (AT MW-)
Lab Sample ID: 180-182762-10

Date Collected: 11/12/24 04:20
Matrix: Water
Date Received: 11/14/24 09:10

Method: SW846 EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	5.7		2.0	1.4	mg/L			11/18/24 21:28	2
Fluoride	0.27		0.20	0.052	mg/L			11/18/24 21:28	2
Sulfate	150		2.0	1.5	mg/L			11/18/24 21:28	2

Method: SW846 EPA 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	270		100	76	ug/L		11/19/24 09:30	11/19/24 18:53	1
Calcium	85000		500	190	ug/L		11/19/24 09:30	11/19/24 18:53	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	560		10	10	mg/L			11/15/24 10:42	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	NONE	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.25				SU			11/12/24 05:20	1

Client: Midwest Environmental Consultants
Job ID: 180-182762-2
Project/Site: Asbury Pond CCR

Client Sample ID: FIELD BLANK
Lab Sample ID: 180-182762-11
Date Collected: 11/13/24 10:20
Matrix: Water
Date Received: 11/14/24 09:10

Method: SW846 EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**5.6**		1.0	0.71	mg/L			11/18/24 21:15	1
Fluoride	**0.75**		0.10	0.026	mg/L			11/18/24 21:15	1
Sulfate	ND		1.0	0.76	mg/L			11/18/24 21:15	1

Method: SW846 EPA 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		100	76	ug/L		11/19/24 09:30	11/19/24 18:56	1
Calcium	**49000**		500	190	ug/L		11/19/24 09:30	11/19/24 18:56	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**260**		10	10	mg/L			11/15/24 10:42	1

Method: EPA 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 180-484539/6
Matrix: Water
Analysis Batch: 484539

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		1.0	0.71	mg/L			11/16/24 10:25	1
Fluoride	ND		0.10	0.026	mg/L			11/16/24 10:25	1
Sulfate	ND		1.0	0.76	mg/L			11/16/24 10:25	1

Lab Sample ID: LCS 180-484539/7
Matrix: Water
Analysis Batch: 484539

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	50.0	49.2		mg/L		98	80 - 120
Fluoride	2.50	2.50		mg/L		100	80 - 120
Sulfate	50.0	46.4		mg/L		93	80 - 120

Lab Sample ID: 180-182866-C-1 MS
Matrix: Water
Analysis Batch: 484539

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	6.6		50.0	58.1		mg/L		103	80 - 120
Fluoride	0.087	J	2.50	2.76		mg/L		107	80 - 120
Sulfate	28		50.0	79.4		mg/L		103	80 - 120

Lab Sample ID: 180-182866-C-1 MSD
Matrix: Water
Analysis Batch: 484539

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	6.6		50.0	57.9		mg/L		103	80 - 120	0	15
Fluoride	0.087	J	2.50	2.74		mg/L		106	80 - 120	1	15
Sulfate	28		50.0	75.5		mg/L		95	80 - 120	5	15

Lab Sample ID: MB 180-484597/45
Matrix: Water
Analysis Batch: 484597

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.745	J	1.0	0.71	mg/L			11/18/24 17:57	1
Fluoride	ND		0.10	0.026	mg/L			11/18/24 17:57	1
Sulfate	ND		1.0	0.76	mg/L			11/18/24 17:57	1

Lab Sample ID: LCS 180-484597/46
Matrix: Water
Analysis Batch: 484597

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	50.0	53.1		mg/L		106	80 - 120
Fluoride	2.50	2.56		mg/L		103	80 - 120
Sulfate	50.0	46.6		mg/L		93	80 - 120

Method: EPA 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: 180-182902-B-2 MS
Matrix: Water
Analysis Batch: 484597

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	10		50.0	62.2		mg/L		104	80 - 120
Fluoride	0.041	J	2.50	2.59		mg/L		102	80 - 120
Sulfate	19		50.0	71.5		mg/L		105	80 - 120

Lab Sample ID: 180-182902-B-2 MSD
Matrix: Water
Analysis Batch: 484597

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	10		50.0	63.0		mg/L		106	80 - 120	1	15
Fluoride	0.041	J	2.50	2.59		mg/L		102	80 - 120	0	15
Sulfate	19		50.0	71.1		mg/L		104	80 - 120	0	15

Lab Sample ID: MB 180-484626/6
Matrix: Water
Analysis Batch: 484626

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		1.0	0.71	mg/L			11/18/24 12:02	1
Fluoride	ND		0.10	0.026	mg/L			11/18/24 12:02	1
Sulfate	ND		1.0	0.76	mg/L			11/18/24 12:02	1

Lab Sample ID: LCS 180-484626/7
Matrix: Water
Analysis Batch: 484626

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	50.0	48.0		mg/L		96	80 - 120
Fluoride	2.50	2.48		mg/L		99	80 - 120
Sulfate	50.0	46.9		mg/L		94	80 - 120

Lab Sample ID: 180-182712-C-1 MS
Matrix: Water
Analysis Batch: 484626

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	1.6		50.0	51.6		mg/L		100	80 - 120
Fluoride	0.099	J	2.50	2.67		mg/L		103	80 - 120
Sulfate	4.3		50.0	52.6		mg/L		97	80 - 120

Lab Sample ID: 180-182712-C-1 MSD
Matrix: Water
Analysis Batch: 484626

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	1.6		50.0	49.4		mg/L		96	80 - 120	4	15
Fluoride	0.099	J	2.50	2.56		mg/L		99	80 - 120	4	15
Sulfate	4.3		50.0	49.1		mg/L		90	80 - 120	7	15

Method: EPA 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: MB 180-485940/6
Matrix: Water
Analysis Batch: 485940

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		1.0	0.71	mg/L			12/05/24 11:05	1
Fluoride	ND		0.10	0.026	mg/L			12/05/24 11:05	1
Sulfate	ND		1.0	0.76	mg/L			12/05/24 11:05	1

Lab Sample ID: LCS 180-485940/7
Matrix: Water
Analysis Batch: 485940

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	50.0	49.4		mg/L		99	80 - 120
Fluoride	2.50	2.55		mg/L		102	80 - 120
Sulfate	50.0	49.6		mg/L		99	80 - 120

Lab Sample ID: 180-183682-D-1 MS
Matrix: Water
Analysis Batch: 485940

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	28		50.0	76.1		mg/L		96	80 - 120
Fluoride	0.13		2.50	2.68		mg/L		102	80 - 120
Sulfate	3.6		50.0	53.8		mg/L		100	80 - 120

Lab Sample ID: 180-183682-D-1 MSD
Matrix: Water
Analysis Batch: 485940

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	28		50.0	76.2		mg/L		96	80 - 120	0	15
Fluoride	0.13		2.50	2.68		mg/L		102	80 - 120	0	15
Sulfate	3.6		50.0	53.8		mg/L		100	80 - 120	0	15

Method: EPA 6020B - Metals (ICP/MS)

Lab Sample ID: MB 310-440098/1-A
Matrix: Water
Analysis Batch: 440318

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 440098

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		2.0	1.0	ug/L		11/19/24 09:30	11/19/24 16:02	1
Arsenic	ND		2.0	0.53	ug/L		11/19/24 09:30	11/19/24 16:02	1
Barium	ND		2.0	0.66	ug/L		11/19/24 09:30	11/19/24 16:02	1
Beryllium	ND		1.0	0.33	ug/L		11/19/24 09:30	11/19/24 16:02	1
Boron	ND		100	76	ug/L		11/19/24 09:30	11/19/24 16:02	1
Cadmium	ND		0.20	0.10	ug/L		11/19/24 09:30	11/19/24 16:02	1
Calcium	ND		500	190	ug/L		11/19/24 09:30	11/19/24 16:02	1
Chromium	ND		5.0	1.2	ug/L		11/19/24 09:30	11/19/24 16:02	1
Cobalt	ND		0.50	0.17	ug/L		11/19/24 09:30	11/19/24 16:02	1
Lead	ND		0.50	0.26	ug/L		11/19/24 09:30	11/19/24 16:02	1
Lithium	ND		10	2.5	ug/L		11/19/24 09:30	11/19/24 16:02	1
Molybdenum	ND		2.0	1.3	ug/L		11/19/24 09:30	11/19/24 16:02	1

Method: EPA 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 310-440098/1-A
Matrix: Water
Analysis Batch: 440318

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 440098

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Selenium	ND		5.0	1.4	ug/L		11/19/24 09:30	11/19/24 16:02	1
Thallium	ND		1.0	0.57	ug/L		11/19/24 09:30	11/19/24 16:02	1

Lab Sample ID: LCS 310-440098/2-A
Matrix: Water
Analysis Batch: 440318

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 440098

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	200	194		ug/L		97	80 - 120
Arsenic	200	191		ug/L		95	80 - 120
Barium	100	96.8		ug/L		97	80 - 120
Beryllium	100	101		ug/L		101	80 - 120
Boron	200	195		ug/L		98	80 - 120
Cadmium	100	95.0		ug/L		95	80 - 120
Calcium	2000	1860		ug/L		93	80 - 120
Chromium	100	102		ug/L		102	80 - 120
Cobalt	100	104		ug/L		104	80 - 120
Lead	200	194		ug/L		97	80 - 120
Lithium	200	208		ug/L		104	80 - 120
Molybdenum	200	187		ug/L		94	80 - 120
Selenium	400	389		ug/L		97	80 - 120
Thallium	100	104		ug/L		104	80 - 120

Lab Sample ID: 310-295313-A-4-B MS
Matrix: Water
Analysis Batch: 440318

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 440098

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	ND		200	196		ug/L		98	75 - 125
Arsenic	ND		200	209		ug/L		105	75 - 125
Barium	0.090	F1	100	194	F1	ug/L		194	75 - 125
Beryllium	ND		100	102		ug/L		102	75 - 125
Boron	230		200	424		ug/L		97	75 - 125
Cadmium	ND		100	101		ug/L		101	75 - 125
Calcium	78000		2000	80000	4	ug/L		90	75 - 125
Chromium	0.0014	J	100	103		ug/L		103	75 - 125
Cobalt	0.00033	J	100	102		ug/L		102	75 - 125
Lead	0.0018		200	195		ug/L		97	75 - 125
Lithium	0.012		200	214		ug/L		107	75 - 125
Molybdenum	ND		200	204		ug/L		102	75 - 125
Selenium	0.0016	J	400	405		ug/L		101	75 - 125
Thallium	ND		100	102		ug/L		102	75 - 125

Lab Sample ID: 310-295313-A-4-C MSD
Matrix: Water
Analysis Batch: 440318

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 440098

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Antimony	ND		200	194		ug/L		97	75 - 125	1	20

Method: EPA 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: 310-295313-A-4-C MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 440318 — **Prep Batch: 440098**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	ND		200	208		ug/L		104	75 - 125	0	20
Barium	0.090	F1	100	195	F1	ug/L		195	75 - 125	0	20
Beryllium	ND		100	101		ug/L		101	75 - 125	1	20
Boron	230		200	429		ug/L		99	75 - 125	1	20
Cadmium	ND		100	101		ug/L		101	75 - 125	0	20
Calcium	78000		2000	80100	4	ug/L		98	75 - 125	0	20
Chromium	0.0014	J	100	102		ug/L		102	75 - 125	1	20
Cobalt	0.00033	J	100	101		ug/L		101	75 - 125	1	20
Lead	0.0018		200	194		ug/L		97	75 - 125	1	20
Lithium	0.012		200	214		ug/L		107	75 - 125	0	20
Molybdenum	ND		200	202		ug/L		101	75 - 125	1	20
Selenium	0.0016	J	400	397		ug/L		99	75 - 125	2	20
Thallium	ND		100	103		ug/L		103	75 - 125	0	20

Lab Sample ID: MB 310-440099/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 440318 — **Prep Batch: 440099**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		100	76	ug/L		11/19/24 09:30	11/19/24 17:44	1
Calcium	ND		500	190	ug/L		11/19/24 09:30	11/19/24 17:44	1

Lab Sample ID: LCS 310-440099/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 440318 — **Prep Batch: 440099**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	200	188		ug/L		94	80 - 120
Calcium	2000	1860		ug/L		93	80 - 120

Lab Sample ID: 310-295210-A-6-B MS — **Client Sample ID: Matrix Spike**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 440318 — **Prep Batch: 440099**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	1300		200	1480	4	ug/L		98	75 - 125
Calcium	44000		2000	44100	4	ug/L		17	75 - 125

Lab Sample ID: 310-295210-A-6-C MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 440318 — **Prep Batch: 440099**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Boron	1300		200	1500	4	ug/L		110	75 - 125	2	20
Calcium	44000		2000	45600	4	ug/L		92	75 - 125	3	20

Method: EPA 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: 310-295210-A-4-B DU
Matrix: Water
Analysis Batch: 440318

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 440099

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Boron	790		806		ug/L		2	20
Calcium	230000		234000		ug/L		0.07	20

Lab Sample ID: 310-295290-B-21-B DU
Matrix: Water
Analysis Batch: 440318

Client Sample ID: Duplicate
Prep Type: Dissolved
Prep Batch: 440098

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Antimony	ND		ND		ug/L		NC	20
Arsenic	ND		ND		ug/L		NC	20
Barium	0.015		14.5	F3	ug/L		200	20
Beryllium	ND		ND		ug/L		NC	20
Boron	ND		ND		ug/L		NC	20
Cadmium	ND		ND		ug/L		NC	20
Calcium	30000		29800		ug/L		1	20
Chromium	ND		ND		ug/L		NC	20
Cobalt	0.00055		0.532	F3	ug/L		200	20
Lead	ND		ND		ug/L		NC	20
Lithium	0.0059	J	5.76	J F3	ug/L		200	20
Molybdenum	ND		ND		ug/L		NC	20
Selenium	ND		ND		ug/L		NC	20
Thallium	ND		ND		ug/L		NC	20

Method: EPA 7470A - Mercury (CVAA)

Lab Sample ID: MB 310-441704/1-A
Matrix: Water
Analysis Batch: 442141

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 441704

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00011	mg/L		12/10/24 11:00	12/10/24 14:22	1

Lab Sample ID: LCS 310-441704/2-A
Matrix: Water
Analysis Batch: 442141

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 441704

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.00167	0.00174		mg/L		105	80 - 120

Lab Sample ID: 310-295567-A-1-C MS
Matrix: Water
Analysis Batch: 442141

Client Sample ID: Matrix Spike
Prep Type: Dissolved
Prep Batch: 441704

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	ND		0.00167	0.00190		mg/L		114	80 - 120

Method: EPA 7470A - Mercury (CVAA) (Continued)

Lab Sample ID: 310-295567-A-1-D MSD
Matrix: Water
Analysis Batch: 442141

Client Sample ID: Matrix Spike Duplicate
Prep Type: Dissolved
Prep Batch: 441704

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	ND		0.00167	0.00187		mg/L		112	80 - 120	2	20

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 180-484481/1
Matrix: Water
Analysis Batch: 484481

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10	10	mg/L			11/15/24 10:42	1

Lab Sample ID: LCS 180-484481/2
Matrix: Water
Analysis Batch: 484481

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids	417	368		mg/L		88	85 - 115

Lab Sample ID: 180-182735-C-7 DU
Matrix: Water
Analysis Batch: 484481

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	1200		1200		mg/L		0.3	10

Lab Sample ID: 180-182735-C-12 DU
Matrix: Water
Analysis Batch: 484481

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	730		728		mg/L		0.4	10

Lab Sample ID: MB 180-484482/1
Matrix: Water
Analysis Batch: 484482

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10	10	mg/L			11/15/24 10:48	1

Lab Sample ID: LCS 180-484482/2
Matrix: Water
Analysis Batch: 484482

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids	417	388		mg/L		93	85 - 115

Method: SM 2540C - Solids, Total Dissolved (TDS) (Continued)

Lab Sample ID: 180-182753-B-1 DU
Matrix: Water
Analysis Batch: 484482

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids	950			943		mg/L				0.3	10

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-689539/1-A
Matrix: Water
Analysis Batch: 693277

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 689539

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.02414	U	0.0535	0.0535	1.00	0.0989	pCi/L	11/20/24 09:36	12/12/24 07:36	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*95.4*		*30 - 110*	*11/20/24 09:36*	*12/12/24 07:36*	*1*

Lab Sample ID: LCS 160-689539/2-A
Matrix: Water
Analysis Batch: 693277

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 689539

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-226			9.58	9.902		1.05	1.00	0.108	pCi/L	103	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*99.0*		*30 - 110*

Lab Sample ID: 180-182762-E-8-C DU
Matrix: Water
Analysis Batch: 693287

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 689539

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Radium-226	2.05			1.673		0.288	1.00	0.133	pCi/L			0.61	1

Carrier	*DU %Yield*	*DU Qualifier*	*Limits*
Ba Carrier	*90.6*		*30 - 110*

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-689540/1-A
Matrix: Water
Analysis Batch: 691990

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 689540

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.1847	U	0.262	0.262	1.00	0.543	pCi/L	11/20/24 09:42	12/05/24 14:07	1

Method: 9320 - Radium-228 (GFPC) (Continued)

Lab Sample ID: MB 160-689540/1-A
Matrix: Water
Analysis Batch: 691990

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 689540

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	95.4		30 - 110	11/20/24 09:42	12/05/24 14:07	1
Y Carrier	82.2		30 - 110	11/20/24 09:42	12/05/24 14:07	1

Lab Sample ID: LCS 160-689540/2-A
Matrix: Water
Analysis Batch: 691990

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 689540

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-228			8.29	8.611		1.21	1.00	0.578	pCi/L	104	75 - 125		

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	99.0		30 - 110
Y Carrier	79.6		30 - 110

Lab Sample ID: 180-182762-E-8-D DU
Matrix: Water
Analysis Batch: 691989

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 689540

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Radium-228	2.84			1.755		0.542	1.00	0.585	pCi/L			0.89	1

Carrier	DU %Yield	DU Qualifier	Limits
Ba Carrier	90.6		30 - 110
Y Carrier	80.7		30 - 110

HPLC/IC

Analysis Batch: 484539

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-182762-4	MW-5	Total/NA	Water	EPA 9056A	
180-182762-5	MW-5A	Total/NA	Water	EPA 9056A	
180-182762-5	MW-5A	Total/NA	Water	EPA 9056A	
180-182762-6	MW-5AR	Total/NA	Water	EPA 9056A	
180-182762-6	MW-5AR	Total/NA	Water	EPA 9056A	
180-182762-7	MW-6	Total/NA	Water	EPA 9056A	
180-182762-7	MW-6	Total/NA	Water	EPA 9056A	
180-182762-8	MW-6A	Total/NA	Water	EPA 9056A	
180-182762-9	MW-7	Total/NA	Water	EPA 9056A	
180-182762-9	MW-7	Total/NA	Water	EPA 9056A	
MB 180-484539/6	Method Blank	Total/NA	Water	EPA 9056A	
LCS 180-484539/7	Lab Control Sample	Total/NA	Water	EPA 9056A	
180-182866-C-1 MS	Matrix Spike	Total/NA	Water	EPA 9056A	
180-182866-C-1 MSD	Matrix Spike Duplicate	Total/NA	Water	EPA 9056A	

Analysis Batch: 484597

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-182762-11	FIELD BLANK	Total/NA	Water	EPA 9056A	
MB 180-484597/45	Method Blank	Total/NA	Water	EPA 9056A	
LCS 180-484597/46	Lab Control Sample	Total/NA	Water	EPA 9056A	
180-182902-B-2 MS	Matrix Spike	Total/NA	Water	EPA 9056A	
180-182902-B-2 MSD	Matrix Spike Duplicate	Total/NA	Water	EPA 9056A	

Analysis Batch: 484626

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-182762-1	MW-2	Total/NA	Water	EPA 9056A	
180-182762-2	MW-3	Total/NA	Water	EPA 9056A	
180-182762-2	MW-3	Total/NA	Water	EPA 9056A	
180-182762-3	MW-4	Total/NA	Water	EPA 9056A	
180-182762-3	MW-4	Total/NA	Water	EPA 9056A	
180-182762-10	DUPLICATE (AT MW-)	Total/NA	Water	EPA 9056A	
MB 180-484626/6	Method Blank	Total/NA	Water	EPA 9056A	
LCS 180-484626/7	Lab Control Sample	Total/NA	Water	EPA 9056A	
180-182712-C-1 MS	Matrix Spike	Total/NA	Water	EPA 9056A	
180-182712-C-1 MSD	Matrix Spike Duplicate	Total/NA	Water	EPA 9056A	

Analysis Batch: 485940

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-182762-8	MW-6A	Total/NA	Water	EPA 9056A	
MB 180-485940/6	Method Blank	Total/NA	Water	EPA 9056A	
LCS 180-485940/7	Lab Control Sample	Total/NA	Water	EPA 9056A	
180-183682-D-1 MS	Matrix Spike	Total/NA	Water	EPA 9056A	
180-183682-D-1 MSD	Matrix Spike Duplicate	Total/NA	Water	EPA 9056A	

Metals

Prep Batch: 440098

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-182762-1	MW-2	Total/NA	Water	3005A	
180-182762-2	MW-3	Total/NA	Water	3005A	
180-182762-3	MW-4	Total/NA	Water	3005A	

Metals (Continued)

Prep Batch: 440098 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-182762-4	MW-5	Total/NA	Water	3005A	
180-182762-5	MW-5A	Total/NA	Water	3005A	
180-182762-6	MW-5AR	Total/NA	Water	3005A	
180-182762-7	MW-6	Total/NA	Water	3005A	
180-182762-8	MW-6A	Total/NA	Water	3005A	
MB 310-440098/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-440098/2-A	Lab Control Sample	Total/NA	Water	3005A	
310-295313-A-4-B MS	Matrix Spike	Total/NA	Water	3005A	
310-295313-A-4-C MSD	Matrix Spike Duplicate	Total/NA	Water	3005A	
310-295290-B-21-B DU	Duplicate	Dissolved	Water	3005A	

Prep Batch: 440099

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-182762-9	MW-7	Total/NA	Water	3005A	
180-182762-10	DUPLICATE (AT MW-)	Total/NA	Water	3005A	
180-182762-11	FIELD BLANK	Total/NA	Water	3005A	
MB 310-440099/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-440099/2-A	Lab Control Sample	Total/NA	Water	3005A	
310-295210-A-6-B MS	Matrix Spike	Total/NA	Water	3005A	
310-295210-A-6-C MSD	Matrix Spike Duplicate	Total/NA	Water	3005A	
310-295210-A-4-B DU	Duplicate	Total/NA	Water	3005A	

Analysis Batch: 440318

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-182762-1	MW-2	Total/NA	Water	EPA 6020B	440098
180-182762-2	MW-3	Total/NA	Water	EPA 6020B	440098
180-182762-3	MW-4	Total/NA	Water	EPA 6020B	440098
180-182762-4	MW-5	Total/NA	Water	EPA 6020B	440098
180-182762-5	MW-5A	Total/NA	Water	EPA 6020B	440098
180-182762-6	MW-5AR	Total/NA	Water	EPA 6020B	440098
180-182762-7	MW-6	Total/NA	Water	EPA 6020B	440098
180-182762-8	MW-6A	Total/NA	Water	EPA 6020B	440098
180-182762-9	MW-7	Total/NA	Water	EPA 6020B	440099
180-182762-10	DUPLICATE (AT MW-)	Total/NA	Water	EPA 6020B	440099
180-182762-11	FIELD BLANK	Total/NA	Water	EPA 6020B	440099
MB 310-440098/1-A	Method Blank	Total/NA	Water	EPA 6020B	440098
MB 310-440099/1-A	Method Blank	Total/NA	Water	EPA 6020B	440099
LCS 310-440098/2-A	Lab Control Sample	Total/NA	Water	EPA 6020B	440098
LCS 310-440099/2-A	Lab Control Sample	Total/NA	Water	EPA 6020B	440099
310-295210-A-6-B MS	Matrix Spike	Total/NA	Water	EPA 6020B	440099
310-295210-A-6-C MSD	Matrix Spike Duplicate	Total/NA	Water	EPA 6020B	440099
310-295313-A-4-B MS	Matrix Spike	Total/NA	Water	EPA 6020B	440098
310-295313-A-4-C MSD	Matrix Spike Duplicate	Total/NA	Water	EPA 6020B	440098
310-295210-A-4-B DU	Duplicate	Total/NA	Water	EPA 6020B	440099
310-295290-B-21-B DU	Duplicate	Dissolved	Water	EPA 6020B	440098

Analysis Batch: 440399

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-182762-5	MW-5A	Total/NA	Water	EPA 6020B	440098
180-182762-9	MW-7	Total/NA	Water	EPA 6020B	440099

Metals

Prep Batch: 441704

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-182762-6	MW-5AR	Total/NA	Water	7470A	
MB 310-441704/1-A	Method Blank	Total/NA	Water	7470A	
LCS 310-441704/2-A	Lab Control Sample	Total/NA	Water	7470A	
310-295567-A-1-C MS	Matrix Spike	Dissolved	Water	7470A	
310-295567-A-1-D MSD	Matrix Spike Duplicate	Dissolved	Water	7470A	

Analysis Batch: 442141

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-182762-6	MW-5AR	Total/NA	Water	EPA 7470A	441704
MB 310-441704/1-A	Method Blank	Total/NA	Water	EPA 7470A	441704
LCS 310-441704/2-A	Lab Control Sample	Total/NA	Water	EPA 7470A	441704
310-295567-A-1-C MS	Matrix Spike	Dissolved	Water	EPA 7470A	441704
310-295567-A-1-D MSD	Matrix Spike Duplicate	Dissolved	Water	EPA 7470A	441704

General Chemistry

Analysis Batch: 484481

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-182762-1	MW-2	Total/NA	Water	SM 2540C	
180-182762-2	MW-3	Total/NA	Water	SM 2540C	
180-182762-3	MW-4	Total/NA	Water	SM 2540C	
180-182762-4	MW-5	Total/NA	Water	SM 2540C	
180-182762-6	MW-5AR	Total/NA	Water	SM 2540C	
180-182762-7	MW-6	Total/NA	Water	SM 2540C	
180-182762-8	MW-6A	Total/NA	Water	SM 2540C	
180-182762-10	DUPLICATE (AT MW-)	Total/NA	Water	SM 2540C	
180-182762-11	FIELD BLANK	Total/NA	Water	SM 2540C	
MB 180-484481/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 180-484481/2	Lab Control Sample	Total/NA	Water	SM 2540C	
180-182735-C-7 DU	Duplicate	Total/NA	Water	SM 2540C	
180-182735-C-12 DU	Duplicate	Total/NA	Water	SM 2540C	

Analysis Batch: 484482

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-182762-5	MW-5A	Total/NA	Water	SM 2540C	
180-182762-9	MW-7	Total/NA	Water	SM 2540C	
MB 180-484482/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 180-484482/2	Lab Control Sample	Total/NA	Water	SM 2540C	
180-182753-B-1 DU	Duplicate	Total/NA	Water	SM 2540C	

Rad

Prep Batch: 689539

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-182762-6	MW-5AR	Total/NA	Water	PrecSep-21	
MB 160-689539/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-689539/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
180-182762-E-8-C DU	Duplicate	Total/NA	Water	PrecSep-21	

Prep Batch: 689540

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-182762-6	MW-5AR	Total/NA	Water	PrecSep_0	

Rad (Continued)

Prep Batch: 689540 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 160-689540/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-689540/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
180-182762-E-8-D DU	Duplicate	Total/NA	Water	PrecSep_0	

Field Service / Mobile Lab

Analysis Batch: 484508

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-182762-1	MW-2	Total/NA	Water	Field Sampling	
180-182762-2	MW-3	Total/NA	Water	Field Sampling	
180-182762-3	MW-4	Total/NA	Water	Field Sampling	
180-182762-4	MW-5	Total/NA	Water	Field Sampling	
180-182762-5	MW-5A	Total/NA	Water	Field Sampling	
180-182762-6	MW-5AR	Total/NA	Water	Field Sampling	
180-182762-7	MW-6	Total/NA	Water	Field Sampling	
180-182762-8	MW-6A	Total/NA	Water	Field Sampling	
180-182762-9	MW-7	Total/NA	Water	Field Sampling	
180-182762-10	DUPLICATE (AT MW-)	Total/NA	Water	Field Sampling	

Eurofins Pittsburgh
301 Alpha Drive RIDC Park
Pittsburgh, PA 15238
Phone (412) 963-7058 Phone (412) 963-2468

Chain of Custody Record

180-182762 Chain of Custody

Testing

Client Information	Sampler: Rick Elgin	Lab PM: Johnson Andy	Carrier T	Page: Page __of__
Client Contact: Anika Careaga	Phone: 573-636-9454	E-Mail: Andy.Johnson@et.eurofinsus.com	State of C: MO	
Company: Midwest Environmental Consultants	PWSID:			Job #:
Address: 2009 East McCarty Street Suite 2	Due Date Requested:			
City: Jefferson City	TAT Requested (days):			
State, Zip: MO 65101	Compliance Project: Δ Yes Δ No			
Phone: 573-636-9454(Tel)	PO #: Purchase Order not required			
Email: acareaga@mecpc.com	WO #:			
Project Name: Asbury Pond CCR	Project #: 18023389			
Site:	SSOW#:			

Analysis Requested

Preservation Codes.

A HCL, B NaOH, C Zn Acetate, D Nitric Acid, E NaHSO4, F MeOH, G Amchlor, H Ascorbic Acid, I Ice, J DI Water, K EDTA, L EDA, M Hexane, N None, O AsNaO2, P Na2O4S, Q Na2SO3, R Na2S2O3, S H2SO4, T TSP Dodecahydrate, U Acetone, V MCAA, W pH 4-5, Y Trizma, Z other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water S=solid, O=waste/oil BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9056A_ORGFM_28D (MOD) Chloride, Fluoride & Sulfate	6020 Boron/Calcium	2540C_Calcd (MOD) TDS	6020/7470 CCR Appiii/iv metals (sample MW-5AR)	9315_Ra226 Standard Target List (sample MW-5AR)	9320_Ra228 Standard Target List (sample MW-5AR)	6020_CCR Apeendex IV metals sample MW5AR only)	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N	D	N	D	D	D	D		
MW-2	11/13/24	9 25	G	W			X	X	X						pH = 5.67 Spec Cond = 0.711
MW-3	11/13/24	10'10	G	W			X	X	X						pH 5.80 Spec Cond 1.322
MW-4	11/13/24	8 25	G	W			X	X	X						pH = 6.79 Spec Cond = 2.000
MW-5	11/12/24	4 05	G	W			X	X	X						pH = 7.25 Spec Cond .983
MW-5A	11/12/24	2 55	G	W			X	X	X						pH 6.71 Spec Cond 4.143
MW-5AR	11/12/24	3 30	G	W			X		X	X	X	X	X		pH = 7.72 Spec Cond 1.346
MW-6	11/12/24	2 20	G	W			X	X	X						pH = 7.01 Spec Cond 2.471
MW-6A	11/12/24	1 40	G	W			X	X	X						pH 6.16 Spec Cond = 2.337
MW-7	11/12/24	1 10	G	W			X	X	X						pH = 6.90 Spec Cond = 3.120
Duplicate (at MW-)	11/12/24	4 20	G	W			X	X	X						pH 7.25 Spec Cond .983
Field Blank	11/13/24	10 20	G	W			X	X	X						pH = X Spec Cond X

Possible Hazard Identification

☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return To Client ☒ Disposal By Lab ☐ Archive For ____ Months

Deliverable Requested: I, II, III IV Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	Ryan Orthals	11/13/24, 4.00 pm	MEC	FedEx	11/13/24, 4.00 pm	FedEX
2		Date/Time:	Company	Received by:	Date/Time: 11/14/24 0910	Company STL
3		Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Eurofins Pittsburgh
301 Alpha Drive RIDC Park
Pittsburgh PA 15238
Phone (412) 963-7058 Phone (412) 963-2468

Chain of Custody Record

eurofins | Environment Testing

Client Information	Sampler: Rick Elgin	Lab PM: Johnson Andy	Carrier Tracking No(s):	COC No: 180-91658-16873.1
Client Contact: Anika Careaga	Phone: 573-676-9454	E-Mail: Andy.Johnson@et.eurofinsus.com	State of Origin: MO	Page: Page __of __
Company: Midwest Environmental Consultants	PWSID:			Job #:
Address: 2009 East McCarty Street Suite 2	Due Date Requested:			
City: Jefferson City	TAT Requested (days):			
State, Zip: MO 65101	Compliance Project: Δ Yes Δ No			
Phone: 573-636-9454(Tel)	PO #: Purchase Order not required			
Email: acareaga@mecpc.com	WO #:			
Project Name: Asbury Pond CCR	Project #: 18023389			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A HCL, B NaOH, C Zn Acetate, D Nitric Acid, E NaHSO4, F MeOH, G Amchlor, H Ascorbic Acid, I Ice, J DI Water, K EDTA, L EDA, M Hexane, N None, O AsNaO2, P Na2O4S, Q Na2SO3, R Na2S2O3, S H2SO4, T TSP Dodecahydrate, U Acetone, V MCAA, W pH 4-5, Y Trizma, Z other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9056A_ORGFM_28D (MOD) Chloride, Fluoride & Sulfate	6020 Boron/Calcium	2540C_Calcd (MOD) TDS	6020/7470 CCR Appiii/IV metals (sample MW-5AR)	9315_Ra226 Standard Target List (sample MW-5AR)	9320_Ra228 Standard Target List (sample MW-5AR)	6020_CCR Appendex IV metals sample MW5AR only)	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N	D	N	D	D	D	D		
MW-2	11/13/24	9 25	G	W			X	X	X						pH = 5 67 Spec Cond = 0.711
MW-3	11/13/24	10:10	G	W			X	X	X						pH = 5.90 Spec Cond 1.322
MW-4	11/13/24	8:25	G	W			X	X	X						pH = 6.79 Spec Cond = 2,009
MW-5	11/12/24	4 05	G	W			X	X	X						pH = 7.25 Spec Cond = 0.983
MW-5A	11/12/24	2 55	G	W			X	X	X						pH 6.71 Spec Cond = 4143
MW-5AR	11/12/24	3:30	G	W			X		X	X	X	X	x		pH = 7 72 Spec Cond = 1.346
MW-6	11/12/24	2 20	G	W			X	X	X						pH = 7 01 Spec Cond = 2 471
MW-6A	11/12/24	1 40	G	W			X	X	X						pH = 6.16 Spec Cond = 2 837
MW-7	11/12/24	1 10	G	W			X	X	X						pH = 6 30 Spec Cond = 3 120
Duplicate (at MW-5)	11/12/24	4'20	G	W			X	X	X						pH = 7.25 Spec Cond = 0.983
Field Blank	11/13/24	10:30	G	W			X	X	X						pH X Spec Cond = X

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☑ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I II III IV Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	Ryan Ortbals	11/13/24, 4'00 pm	MEC	FedEX	11/13/24, 4.00pm	FedEX
2					11/14/24 0910	BTHNB
3						

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.

Cooler Temperature(s) °C and Other Remarks:

Ver 01/16/2019

ORIGIN ID AGCA (602) 859-7669
RICK ELGIN (ASBURY POND)
MIDWEST ENVIRONMENTAL CONSULTANTS
2009 EAST MCCARTY STREET
SUITE 2
JEFFERSON CITY, MO 65101
UNITED STATES US

SHIP DATE 25OCT24
ACTWGT 30.00 LB MAN
CAD 0522321/CAFE3855

TO SAMPLE RECEIVING DEPARTMENT
EUROFINS ENVIRO. TESTING PITT N.E.
301 ALPHA DRIVE

PITTSBURGH PA 15238
(412) 963-7630
REF: RETURN

RMA.

FedEx Express

E

FedEx

TRK# 0221 4059 5947 5226

THU - 14 NOV 10:30A
PRIORITY OVERNIGHT

XS AGCA

15238
A-US PIT

Uncorrected temp 15
Thermometer ID 13
CF TO 1 Initials
PT-WI-SR-001 effective 11/8/18

58CJ5/582E/C6C4

RT

FZ 197

180-182762 Waybill

B EXP 09/25


ORIGIN ID AGCA (602) 659-7669
RICK ELGIN (ASBURY POND)
MIDWEST ENVIRONMENTAL CONSULTANTS
2009 EAST MCCARTY STREET
SUITE 2
JEFFERSON CITY, MO 65101
UNITED STATES US
SHIP DATE 25OCT24
ACTWGT 30.00 LB MAN
CAD 0522321/CAFE3855
TO SAMPLE RECEIVING DEPARTMENT
EUROFINS ENVIRO. TESTING PITT N.E.
301 ALPHA DRIVE
PITTSBURGH PA 15238
(412) 963-7630
REF: RETURN
RMA.
FedEx Express
FedEx
TRK# 4059 5947 5215
0221
THU - 14 NOV 10:30A
PRIORITY OVERNIGHT
XS AGCA
15238
PA-US PIT
Uncorrected temp
Thermometer ID
CF 10.1
Initials
25
°C
PT-WI-SR-001 effective 11/8/18
58CJ5J592EJC6C4
RT 198
FZ 197
10-30 A
5215
11 14
1 166297-435 R0DB EXP 09/25

ORIGIN ID AGCA (602) 659-7669
RICK ELGIN (ASBURY POND)
MIDWEST ENVIRONMENTAL CONSULTANTS
2009 EAST MCCARTY STREET
SUITE 2
JEFFERSON CITY, MO 65101
UNITED STATES US

SHIP DATE 25OCT24
ACTWGT 30 00 LB MAN
CAD 0522321/CAFE3855

TO SAMPLE RECEIVING DEPARTMENT
EUROFINS ENVIRO. TESTING PIT N.E.
301 ALPHA DRIVE

PITTSBURGH PA 15238
(412) 963-7530
REF: RETURN

RMA.

FedEx Express

FedEx
TRK# 4059 5947 5237
0221

THU - 14 NOV 10:30A
PRIORITY OVERNIGHT

XS AGCA

15238
PA-US PIT

Uncorrected temp
Thermometer ID 3.6 17
CF -0.1 Initials SR

PT-WI-SR-001 effective 11/8/18

58CJ5/582E/C6C4

ORIGIN ID AGCA (602) 659-7669
RICK ELGIN (ASBURY POND)
MIDWEST ENVIRONMENTAL CONSULTANTS
2009 EAST MCCARTY STREET
SUITE 2
JEFFERSON CITY, MO 65101
UNITED STATES US

SHIP DATE 25OCT24
ACTWGT 30 00 LB MAN
CAD 0522321/CAFE3855

TO SAMPLE RECEIVING DEPARTMENT
EUROFINS ENVIRO. TESTING PIT N.E.
301 ALPHA DRIVE

PITTSBURGH PA 15238
(412) 963-7530
REF: RETURN

RMA.

FedEx Express

FedEx
TRK# 4059 5947 5248
0221

THU - 14 NOV 10:30A
PRIORITY OVERNIGHT

XS AGCA

15238
PA-US PIT

Uncorrected temp
Thermometer ID 4.2 17
CF -0.1 Initials SR

PT-WI-SR-001 effective 11/8/18

58CJ5/582E/C6C4

Eurofins Pittsburgh
301 Alpha Drive RIDC Park
Pittsburgh, PA 15238
Phone: 412-963-7058 Fax: 412-963-2468

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler: N/A	Lab PM: Lage, Gail	Carrier Tracking No(s): N/A	COC No: 180-528232.1
Client Contact: Shipping/Receiving	Phone: N/A	E-Mail: Gail.Lage@et.eurofinsus.com	State of Origin: Missouri	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): N/A		Job #: 180-182762-2
Address: 13715 Rider Trail North, ,	Due Date Requested: 11/24/2024			Preservation Codes: -
City: Earth City	TAT Requested (days): N/A			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #: N/A			
Email: N/A	WO #: N/A			
Project Name: Asbury Pond CCR	Project #: 18023389			
Site: N/A	SSOW#: N/A			Other: N/A

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9315_Ra226/PrecSep_21 Radium-226 (GFPC) - 21 day decay	9320_Ra228/PrecSep_0 Radium-228 (GFPC)	Ra226Ra228_GFPC/ Combined Radium-226 and Radium-228 (calc	Total Number of containers	Special Instructions/Note:
			Preservation Code:		X	X				X	
MW-5AR (180-182762-6)	11/12/24	03:30 Central	G	Water			X	X	X	2	Historical Review required; Run once, upload twice

Note: Since laboratory accreditations are subject to change, Eurofins Pittsburgh places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Pittsburgh laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Pittsburgh attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Pittsburgh.

Possible Hazard Identification Unconfirmed	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)* ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	11-18-24 1700	EPITME	M. Pinette	NOV 19 2024 0910	
Relinquished by:	Date/Time:	Company	Received by: Meadow Pinette	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 10/10/2024

12/19/2024

Eurofins Pittsburgh
301 Alpha Drive RIDC Park
Pittsburgh, PA 15238
Phone: 412-963-7058 Fax: 412-963-2468

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler: N/A	Lab PM: Lage, Gail	Carrier Tracking No(s): N/A	COC No: 180-528232.1
Client Contact: Shipping/Receiving	Phone: N/A	E-Mail: Gail.Lage@et.eurofinsus.com	State of Origin: Missouri	Page: Page 1 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): N/A		Job #: 180-182762-1
Address: 13715 Rider Trail North, ,	Due Date Requested: 12/2/2024			
City: Earth City	TAT Requested (days): N/A			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #: N/A			
Email: N/A	WO #: N/A			
Project Name: Asbury Pond NPDES	Project #: 18023389			
Site: N/A	SSOW#: N/A			

Analysis Requested

Preservation Codes: -

Other: N/A

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9315_Ra226/PrecSep_21 Standard Target List	9320_Ra228/PrecSep_0 Standard Target List	Ra226Ra228_GFPC	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
MW-2 (180-182762-1)	11/13/24	09:25 Central	G	Water			X	X	X	2	Historical Review required, Historical Review required;
MW-3 (180-182762-2)	11/13/24	10:10 Central	G	Water			X	X	X	2	Historical Review required, Historical Review required;
MW-4 (180-182762-3)	11/13/24	08:25 Central	G	Water			X	X	X	2	Historical Review required, Historical Review required;
MW-5 (180-182762-4)	11/12/24	04:05 Central	G	Water			X	X	X	1	Historical Review required, Historical Review required;
MW-5A (180-182762-5)	11/12/24	02:55 Central	G	Water			X	X	X	2	Historical Review required, Historical Review required;
MW-5AR (180-182762-6)	11/12/24	03:30 Central	G	Water			X	X	X	2	Historical Review required; Run once, upload twice
MW-6 (180-182762-7)	11/12/24	02:20 Central	G	Water			X	X	X	2	Historical Review required, Historical Review required;
MW-6A (180-182762-8)	11/12/24	01:40 Central	G	Water			X	X	X	2	Historical Review required, Historical Review required;
MW-7 (180-182762-9)	11/12/24	01:10 Central	G	Water			X	X	X	2	Historical Review required, Historical Review required;

Note: Since laboratory accreditations are subject to change, Eurofins Pittsburgh places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Pittsburgh laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Pittsburgh attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Pittsburgh.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
JMcm	11-18-24 1700	EPITNE	M. Pinette	NOV 19 2024 0910	
Relinquished by:	Date/Time:	Company	Received by: Meadow Pinette	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 10/10/2024

Eurofins Pittsburgh
301 Alpha Drive RIDC Park
Pittsburgh, PA 15238
Phone: 412-963-7058 Fax: 412-963-2468

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler: N/A	Lab PM: Lage, Gail	Carrier Tracking No(s): N/A	COC No: 180-528232.2
Client Contact: Shipping/Receiving	Phone: N/A	E-Mail: Gail.Lage@et.eurofinsus.com	State of Origin: Missouri	Page: Page 2 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): N/A		Job #: 180-182762-1
Address: 13715 Rider Trail North, ,	Due Date Requested: 12/2/2024			Preservation Codes: -
City: Earth City	TAT Requested (days): N/A			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #: N/A			
Email: N/A	WO #: N/A			
Project Name: Asbury Pond NPDES	Project #: 18023389			
Site: N/A	SSOW#: N/A			Other: N/A

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9315_Ra226/PrecSep_21 Standard Target List	9320_Ra228/PrecSep_0 Standard Target List	Ra226Ra228_GFPC	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
DUPLICATE (AT MW-) (180-182762-10)	11/12/24	04:20 Central	G	Water			X	X	X	2	Historical Review required, Historical Review required;
FIELD BLANK (180-182762-11)	11/13/24	10:20 Central	G	Water			X	X	X	2	Historical Review required, Historical Review required;

Note: Since laboratory accreditations are subject to change, Eurofins Pittsburgh places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Pittsburgh laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Pittsburgh attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Pittsburgh.

Possible Hazard Identification Unconfirmed	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)* ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
JMen	11-18-24 1700	EPITNE	M. Pinette	NOV 19 2024 0910	
Relinquished by:	Date/Time:	Company	Received by: Meadow Pinette	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 10/10/2024

eurofins | Environment Testing America

180-182762 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: Eurofins

City/State: CITY | STATE | Project:

Receipt Information

Date/Time Received: DATE 11.16.24 | TIME 0905 | Received By: CGC

Delivery Type: ☐ UPS ☑ FedEx SAT ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee ☐ Lab Courier ☐ Lab Field Services ☐ Client Drop-off ☐ Other:_____

Condition of Cooler/Containers

Sample(s) received in Cooler? ☑ Yes ☐ No *If yes:* Cooler ID:

Multiple Coolers? ☐ Yes ☑ No *If yes:* Cooler # _____ of _____

Cooler Custody Seals Present? ☐ Yes ☑ No *If yes:* Cooler custody seals intact? ☐ Yes ☐ No

Sample Custody Seals Present? ☐ Yes ☑ No *If yes:* Sample custody seals intact? ☐ Yes ☐ No

Trip Blank Present? ☐ Yes ☑ No *If yes:* Which VOA samples are in cooler? ↓

Temperature Record

Coolant: ☐ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☑ NONE

Thermometer ID: P | Correction Factor (°C): 0

• **Temp Blank Temperature** – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): 12.1 | Corrected Temp (°C): 12.1

• **Sample Container Temperature**

	CONTAINER 1	CONTAINER 2
Container(s) used:		
Uncorrected Temp (°C)		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE. If yes, contact PM before proceeding. If no, proceed with login

Additional Comments

Eurofins Pittsburgh
301 Alpha Drive RIDC Park
Pittsburgh, PA 15238
Phone: 412-963-7058 Fax: 412-963-2468

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler: N/A	Lab PM: Lage, Gail	Carrier Tracking No(s): N/A	COC No: 180-528064 1
Client Contact: Shipping/Receiving	Phone: N/A	E-Mail: Gail.Lage@et.eurofinsus.com	State of Origin: Missouri	Page: Page 1 of 2
Company: Eurofins Environment Testing North Centr		Accreditations Required (See note): N/A		Job #: 180-182762-2
Address: 3019 Venture Way, ,	Due Date Requested: 12/2/2024			Preservation Codes: -
City: Cedar Falls	TAT Requested (days): N/A			
State, Zip: IA, 50613				
Phone: 319-277-2401(Tel) 319-277-2425(Fax)	PO #: N/A			
Email: N/A	WO #: N/A			
Project Name: Asbury Pond CCR	Project #: 18023389			
Site: N/A	SSOW#: N/A			Other: N/A

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020B/3005A_TOT (MOD) B/Ca by 6020B	6020B/3005A_TOT (MOD) Custom Metals List	7470A/7470A_Prep Mercury	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
MW-2 (180-182762-1)	11/13/24	09:25 Central	G	Water			X			2	
MW-3 (180-182762-2)	11/13/24	10 10 Central	G	Water			X			2	
MW-4 (180-182762-3)	11/13/24	08.25 Central	G	Water			X			2	
MW-5 (180-182762-4)	11/12/24	04.05 Central	G	Water			X			2	
MW-5A (180-182762-5)	11/12/24	02 55 Central	G	Water			X			2	
MW-5AR (180-182762-6)	11/12/24	03.30 Central	G	Water				X	X	2	run once - report twice
MW-6 (180-182762-7)	11/12/24	02:20 Central	G	Water			X			2	
MW-6A (180-182762-8)	11/12/24	01 40 Central	G	Water			X			2	
MW-7 (180-182762-9)	11/12/24	01 10 Central	G	Water			X			2	

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Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	11-15-24 1700	FEDEX	C&C	11-16-24 0905	Eurofins
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver: 10/10/2024

Eurofins Pittsburgh
301 Alpha Drive RIDC Park
Pittsburgh, PA 15238
Phone: 412-963-7058 Fax: 412-963-2468

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler: N/A	Lab PM: Lage, Gail	Carrier Tracking No(s): N/A	COC No: 180-528064.2
Client Contact: Shipping/Receiving	Phone: N/A	E-Mail: Gail.Lage@et.eurofinsus.com	State of Origin: Missouri	Page: Page 2 of 2
Company: Eurofins Environment Testing North Centr		Accreditations Required (See note): N/A		Job #: 180-182762-2
Address: 3019 Venture Way, ,	Due Date Requested: 12/2/2024	Analysis Requested		Preservation Codes: -
City: Cedar Falls	TAT Requested (days): N/A			
State, Zip: IA, 50613				
Phone: 319-277-2401(Tel) 319-277-2425(Fax)	PO #: N/A			
Email: N/A	WO #: N/A			
Project Name: Asbury Pond CCR	Project #: 18023389			Other: N/A
Site: N/A	SSOW#: N/A			

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020B/3005A_TOT (MOD) B/Ca by 6020B	6020B/3005A_TOT (MOD) Custom Metals List	7470A/7470A_Prep Mercury	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
DUPLICATE (AT MW-) (180-182762-10)	11/12/24	04:20 Central	G	Water			X			2	
FIELD BLANK (180-182762-11)	11/13/24	10:20 Central	G	Water			X			2	

Note: Since laboratory accreditations are subject to change, Eurofins Pittsburgh places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Pittsburgh laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Pittsburgh attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Pittsburgh.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For ____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:		Method of Shipment:	
Relinquished by: [signature]	Date/Time: 11-15-24 1700	Company: EA/AMF	Received by: CGL	Date/Time: 11-16-24 0905	Company: Eurofins
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:		

Ver: 10/10/2024

Login Sample Receipt Checklist

Client: Midwest Environmental Consultants

Job Number: 180-182762-2

Login Number: 182762
List Number: 1
Creator: Abernathy, Eric L

List Source: Eurofins Pittsburgh

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

This receipt checklist is generated for all samples received in this Login. It may not be applicable to all Jobs associated with this Login.

Login Sample Receipt Checklist

Client: Midwest Environmental Consultants

Job Number: 180-182762-2

Login Number: 182762
List Number: 2
Creator: Hirsch, Preston

List Source: Eurofins Cedar Falls
List Creation: 11/16/24 11:21 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

This receipt checklist is generated for all samples received in this Login. It may not be applicable to all Jobs associated with this Login.

Login Sample Receipt Checklist

Client: Midwest Environmental Consultants

Job Number: 180-182762-2

Login Number: 182762
List Number: 3
Creator: Pinette, Meadow L

List Source: Eurofins St. Louis
List Creation: 11/19/24 01:44 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

This receipt checklist is generated for all samples received in this Login. It may not be applicable to all Jobs associated with this Login.

APPENDIX 4

Statistical Analysis

JETT ENVIRONMENTAL CONSULTING

January 16, 2025 ***Submitted via Email***

Mr. Lindsey R. Henry, PE
Midwest Environmental Consultants
2009 E. McCarty St., Suite 2
Jefferson City, MO 65101

Re: Groundwater Statistical Analysis Results
Asbury Power Plant – Coal Combustion Residuals (CCR) Impoundment
United States Environmental Protection Agency Program

Dear Mr. Henry:

Jett Environmental Consulting is providing the results of the groundwater statistical analysis for the November 2024 event at the Asbury Power Plant – CCR Impoundment.

If you have any questions or comments, please contact me at steve.jett@jettenviro.com or 314-496-4654.

Sincerely,

Steve Jett, P.G.
Owner

Ciara Childers Beavers
Project Geologist

Attachments:
Table 1 – SSIs Observed During November 2024 Sampling Event
1 - Time Series Graphs – Inorganics
2 - Trend Testing – Inorganics
3 - Inter-Well Prediction Limits
4 - Statistical Power Curves

Inorganics – Times Series & Trend Testing

Time Series graphs were generated for each of the inorganic constituents. The time series graphs are included in **Attachment 1**.

The inorganic constituents with results above the laboratory reporting limits were analyzed with Sanitas™ to determine if statistically significant increasing or decreasing trends exist within the background data range (January 2016 through May 2023) utilizing the Sen's Slope / Mann-Kendall trend test. Trends were based on a 98% confidence level (two tailed). The following constituents exhibited statistically significant increasing trends: boron (MW-5A), calcium (MW-5A, MW-6A), chloride (MW-5, MW-5A, MW-6), fluoride (MW-7), sulfate (MW-5A, MW-6A), and total dissolved solids (MW-5A, MW-6A). Of the increasing trends, only one instance was for an upgradient well (fluoride at MW-7); however, fluoride was reported as non-detect over the last eight rounds of background sampling. All other constituents were either not trending or had a statistically significant decreasing trend. The trending data have only been reviewed at this time. No trending data was removed before performing the inter-well prediction interval analysis. The trend testing results are included in **Attachment 2**.

Inorganics – Inter-Well Prediction Limits

Statistical Analysis was performed on the inorganic constituents and metals. Prediction interval analyses compare one or more observations to a limit set by background data. Background data consists of semi-annual groundwater tests from the upgradient wells (MW-2, MW-3, and MW-7) between January 2016 and May 2023 (20 events). Inter-well analyses compare observations from upgradient background wells and their relation to the observations for the downgradient wells. Intra-well analyses compare background observations to current observations of the same well.

Sanitas™ was used to perform the statistical analyses. For most constituents, non-parametric inter-well prediction intervals were performed due to non-detectable levels in more than 50 percent of the background samples or if data were not normally distributed. The Sanitas™ inter-well prediction limit outputs are included in **Attachment 3**.

Table 1 lists the parameters that exhibited a statistically significant increase (SSI) during the November 2024 sampling event, the associated monitoring wells, inter-well prediction limit, and the measured concentration. Also included on the table is a comparison to any established USEPA National Primary Drinking Water Standard - Maximum Contaminant Level (MCL).

Statistical Power Curves

A statistical power curve graph has been prepared to allow comparisons between the current monitoring program and USEPA-recommended standards. Under the USEPA's *Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance* (March 2009), inter-well prediction limits are constructed to have a site-wide false positive rate (SWFPR) of 10% annually, or 5% per event for a semi-annually sampled facility. **Attachment 4** presents the power curves for the facility's monitoring program.

Results Summary

Boron (MW-5A) and total dissolved solids (MW-5A) exhibited confirmed SSIs during the November 2024 event.

pH (MW-5 and MW-6) exhibited an initial SSI during the November 2024 event.

Of the SSIs, none have an established MCL.

Table 1 SSIs Observed During November 2024 Sampling Event					
Constituent (units)	**Well**	**Initial vs. Confirmed**	**Statistical Limit**	**Result**	**MCL**
Boron (mg/L)	MW-5A	Confirmed	0.9	2.0	NE
pH (SU)	MW-5	Initial	5.22-6.98	7.25	NE
pH (SU)	MW-6	Initial	5.22-6.98	7.01	NE
Total Dissolved Solids (mg/L)	MW-5A	Confirmed	3100	3200	NE

NE = Not Established.

MCL = USEPA National Primary Drinking Water Standard - Maximum Contaminant Level

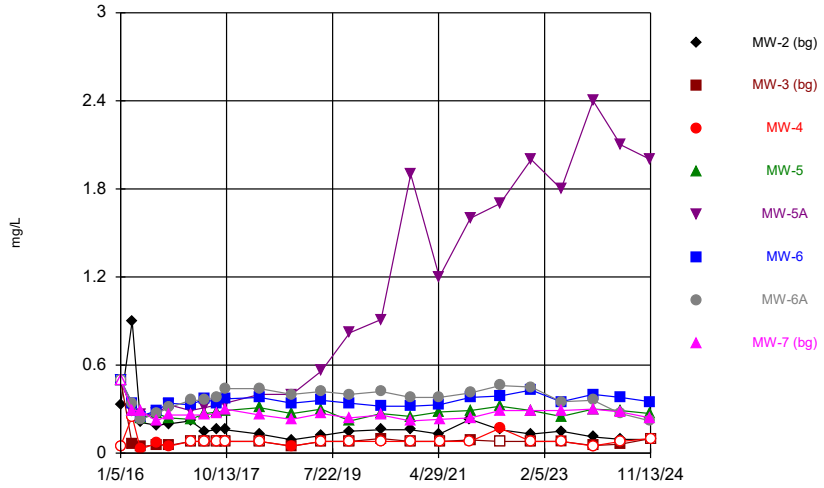
ATTACHMENTS

ATTACHMENT 1

TIME SERIES GRAPHS
INORGANICS

Sanitas™ v.10.0.24 Software licensed to Jett Environmental Consulting. UG
Hollow symbols indicate censored values.

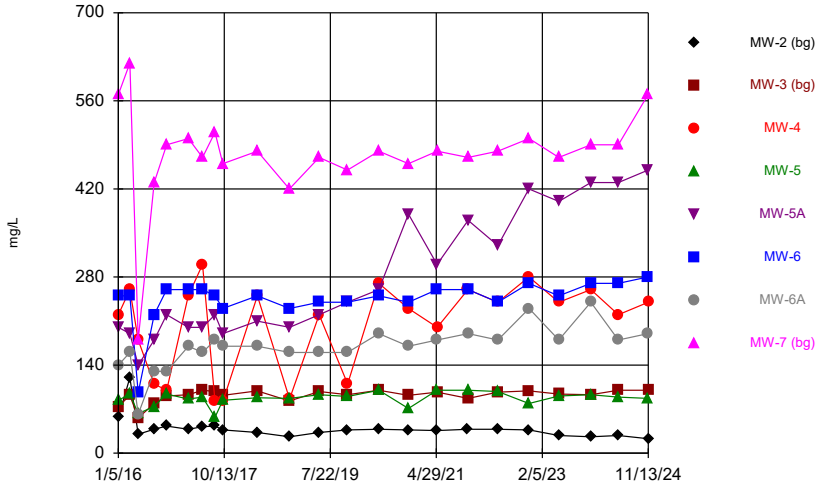
Boron



Time Series Analysis Run 1/16/2025 9:00 AM
Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

Sanitas™ v.10.0.24 Software licensed to Jett Environmental Consulting. UG

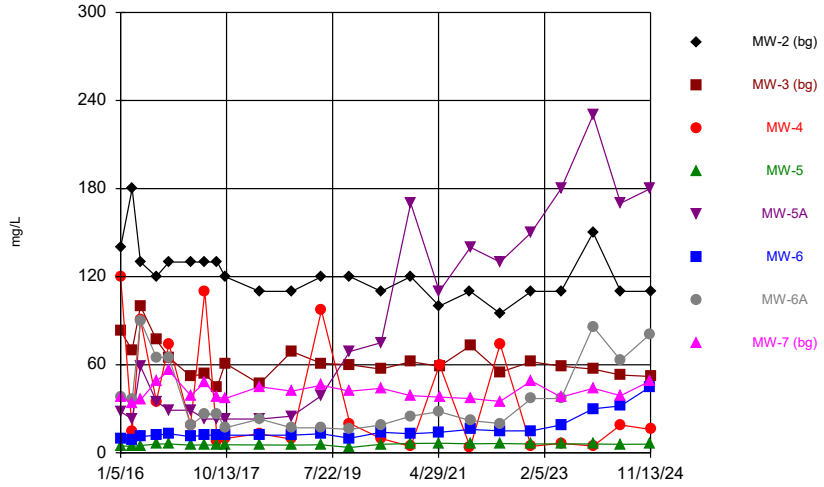
Calcium



Time Series Analysis Run 1/16/2025 9:00 AM
Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

Sanitas™ v.10.0.24 Software licensed to Jett Environmental Consulting. UG

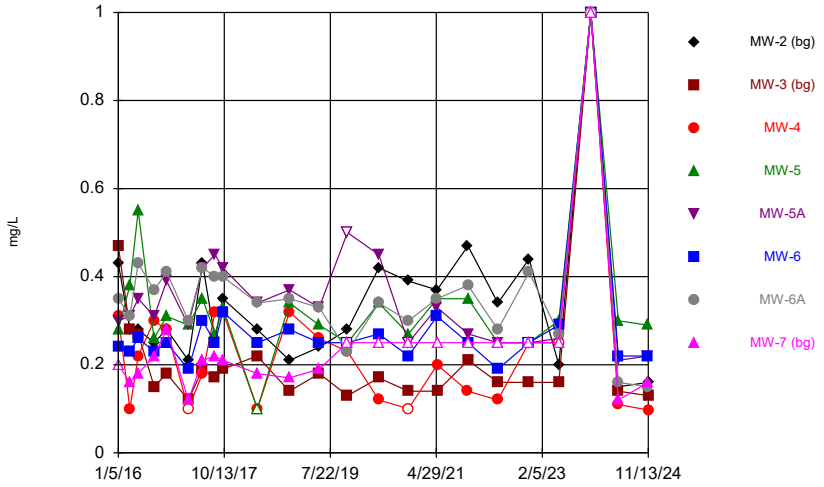
Chloride



Time Series Analysis Run 1/16/2025 9:00 AM
Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

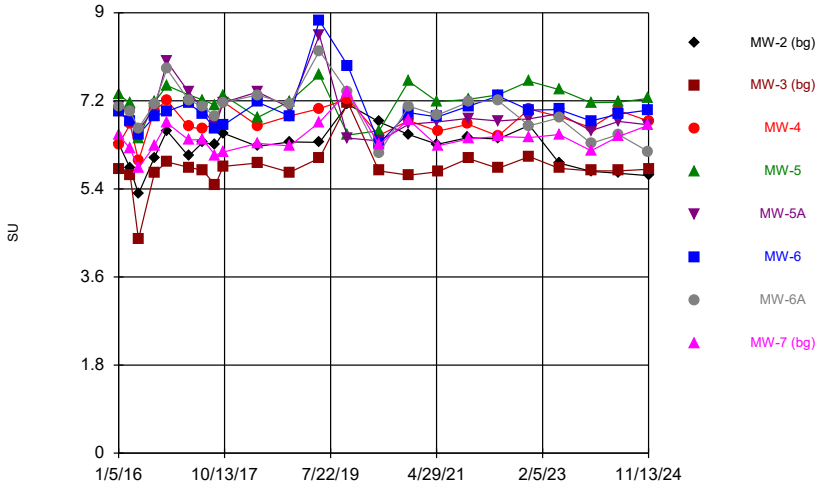
Sanitas™ v.10.0.24 Software licensed to Jett Environmental Consulting. UG
Hollow symbols indicate censored values.

Fluoride



Time Series Analysis Run 1/16/2025 9:00 AM
Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

pH

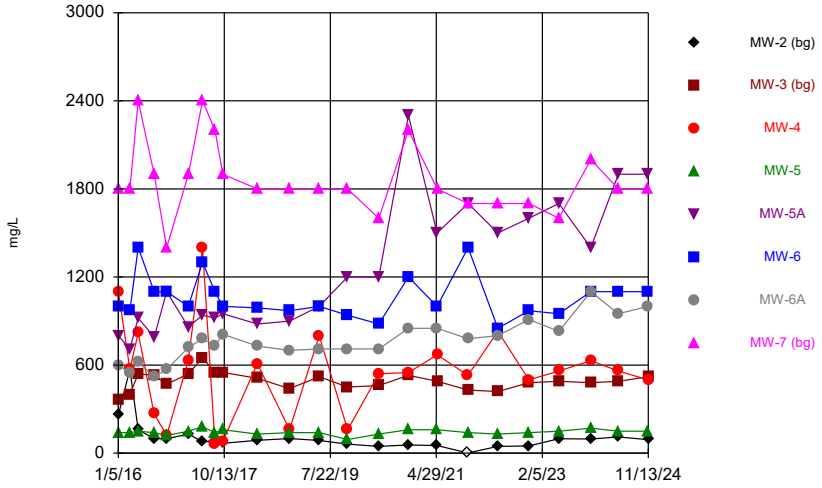


Time Series Analysis Run 1/16/2025 9:00 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

Hollow symbols indicate censored values.

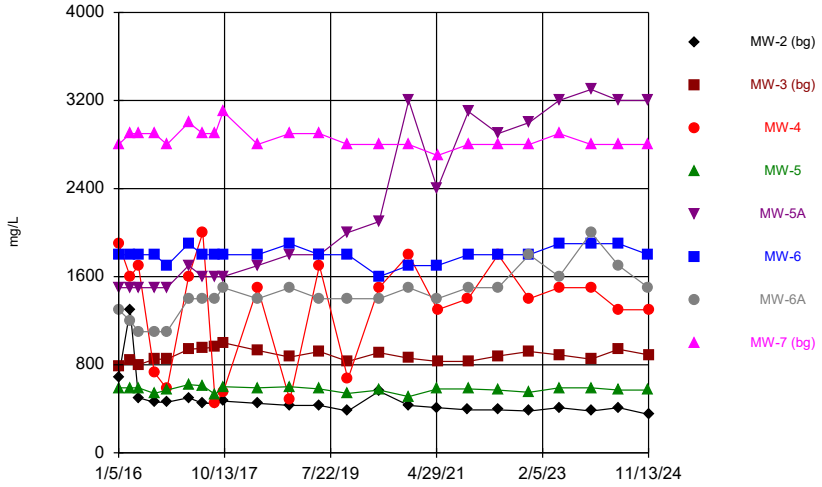
Sulfate



Time Series Analysis Run 1/16/2025 9:00 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

Total Dissolved Solids



Time Series Analysis Run 1/16/2025 9:00 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

ATTACHMENT 2

TREND TESTING
INORGANICS

Trend Test

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant Printed 7/3/2024, 8:47 AM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
Boron (mg/L)	**MW-2 (bg)**	**-0.01157**	**-74**	**-73**	**Yes**	**20**	**0**	**n/a**	**n/a**	**0.02**	**NP**
Boron (mg/L)	MW-3 (bg)	1.4e-10	44	73	No	20	60	n/a	n/a	0.02	NP
Boron (mg/L)	MW-4	0	52	73	No	20	75	n/a	n/a	0.02	NP
Boron (mg/L)	MW-5	0	13	73	No	20	5	n/a	n/a	0.02	NP
Boron (mg/L)	**MW-5A**	**0.2069**	**149**	**73**	**Yes**	**20**	**5**	**n/a**	**n/a**	**0.02**	**NP**
Boron (mg/L)	MW-6	0.004198	36	73	No	20	5	n/a	n/a	0.02	NP
Boron (mg/L)	MW-6A	0.014	59	73	No	20	5	n/a	n/a	0.02	NP
Boron (mg/L)	MW-7 (bg)	0	-22	-73	No	20	5	n/a	n/a	0.02	NP
Calcium (mg/L)	MW-2 (bg)	-1.025	-60	-73	No	20	0	n/a	n/a	0.02	NP
Calcium (mg/L)	MW-3 (bg)	1.323	60	73	No	20	0	n/a	n/a	0.02	NP
Calcium (mg/L)	MW-4	5.128	33	73	No	20	0	n/a	n/a	0.02	NP
Calcium (mg/L)	MW-5	1.7	51	73	No	20	0	n/a	n/a	0.02	NP
Calcium (mg/L)	**MW-5A**	**29.17**	**136**	**73**	**Yes**	**20**	**0**	**n/a**	**n/a**	**0.02**	**NP**
Calcium (mg/L)	MW-6	0	30	73	No	20	0	n/a	n/a	0.02	NP
Calcium (mg/L)	**MW-6A**	**7.097**	**108**	**73**	**Yes**	**20**	**0**	**n/a**	**n/a**	**0.02**	**NP**
Calcium (mg/L)	MW-7 (bg)	0	-12	-73	No	20	0	n/a	n/a	0.02	NP
Chloride (mg/L)	**MW-2 (bg)**	**-4.251**	**-121**	**-73**	**Yes**	**20**	**0**	**n/a**	**n/a**	**0.02**	**NP**
Chloride (mg/L)	MW-3 (bg)	-1.609	-43	-73	No	20	0	n/a	n/a	0.02	NP
Chloride (mg/L)	**MW-4**	**-3.614**	**-74**	**-73**	**Yes**	**20**	**0**	**n/a**	**n/a**	**0.02**	**NP**
Chloride (mg/L)	**MW-5**	**0.1787**	**93**	**73**	**Yes**	**20**	**0**	**n/a**	**n/a**	**0.02**	**NP**
Chloride (mg/L)	**MW-5A**	**17.84**	**105**	**73**	**Yes**	**20**	**0**	**n/a**	**n/a**	**0.02**	**NP**
Chloride (mg/L)	**MW-6**	**0.7246**	**126**	**73**	**Yes**	**20**	**0**	**n/a**	**n/a**	**0.02**	**NP**
Chloride (mg/L)	MW-6A	-1.923	-41	-73	No	20	0	n/a	n/a	0.02	NP
Chloride (mg/L)	MW-7 (bg)	-0.08072	-10	-73	No	20	0	n/a	n/a	0.02	NP
Fluoride (mg/L)	MW-2 (bg)	0.008487	22	73	No	20	0	n/a	n/a	0.02	NP
Fluoride (mg/L)	MW-3 (bg)	-0.006744	-61	-73	No	20	0	n/a	n/a	0.02	NP
Fluoride (mg/L)	MW-4	-0.006169	-21	-73	No	20	20	n/a	n/a	0.02	NP
Fluoride (mg/L)	MW-5	-0.004548	-27	-73	No	20	5	n/a	n/a	0.02	NP
Fluoride (mg/L)	MW-5A	-0.007672	-37	-73	No	20	15	n/a	n/a	0.02	NP
Fluoride (mg/L)	MW-6	0.0007283	23	73	No	20	10	n/a	n/a	0.02	NP
Fluoride (mg/L)	MW-6A	-0.009747	-49	-73	No	20	0	n/a	n/a	0.02	NP
Fluoride (mg/L)	**MW-7 (bg)**	**0.008083**	**77**	**73**	**Yes**	**20**	**45**	**n/a**	**n/a**	**0.02**	**NP**
pH (SU)	MW-2 (bg)	0.05735	59	73	No	20	0	n/a	n/a	0.02	NP
pH (SU)	MW-3 (bg)	0.02709	52	73	No	20	0	n/a	n/a	0.02	NP
pH (SU)	MW-4	0.0217	19	73	No	20	0	n/a	n/a	0.02	NP
pH (SU)	MW-5	0.02125	34	73	No	20	0	n/a	n/a	0.02	NP
pH (SU)	MW-5A	-0.03798	-29	-73	No	20	0	n/a	n/a	0.02	NP
pH (SU)	MW-6	0.03219	46	73	No	20	0	n/a	n/a	0.02	NP
pH (SU)	MW-6A	-0.008695	-9	-73	No	20	0	n/a	n/a	0.02	NP
pH (SU)	MW-7 (bg)	0.03464	52	73	No	20	0	n/a	n/a	0.02	NP
Sulfate (mg/L)	**MW-2 (bg)**	**-16.16**	**-122**	**-73**	**Yes**	**20**	**5**	**n/a**	**n/a**	**0.02**	**NP**
Sulfate (mg/L)	MW-3 (bg)	-6.48	-24	-73	No	20	0	n/a	n/a	0.02	NP
Sulfate (mg/L)	MW-4	-6.658	-7	-73	No	20	0	n/a	n/a	0.02	NP
Sulfate (mg/L)	MW-5	0	-3	-73	No	20	0	n/a	n/a	0.02	NP
Sulfate (mg/L)	**MW-5A**	**127.3**	**132**	**73**	**Yes**	**20**	**0**	**n/a**	**n/a**	**0.02**	**NP**
Sulfate (mg/L)	MW-6	-18.61	-57	-73	No	20	0	n/a	n/a	0.02	NP
Sulfate (mg/L)	**MW-6A**	**34.49**	**108**	**73**	**Yes**	**20**	**0**	**n/a**	**n/a**	**0.02**	**NP**
Sulfate (mg/L)	MW-7 (bg)	-33.2	-70	-73	No	20	0	n/a	n/a	0.02	NP
Total Dissolved Solids (mg/L)	**MW-2 (bg)**	**-16.07**	**-127**	**-73**	**Yes**	**20**	**0**	**n/a**	**n/a**	**0.02**	**NP**
Total Dissolved Solids (mg/L)	MW-3 (bg)	5.317	19	73	No	20	0	n/a	n/a	0.02	NP

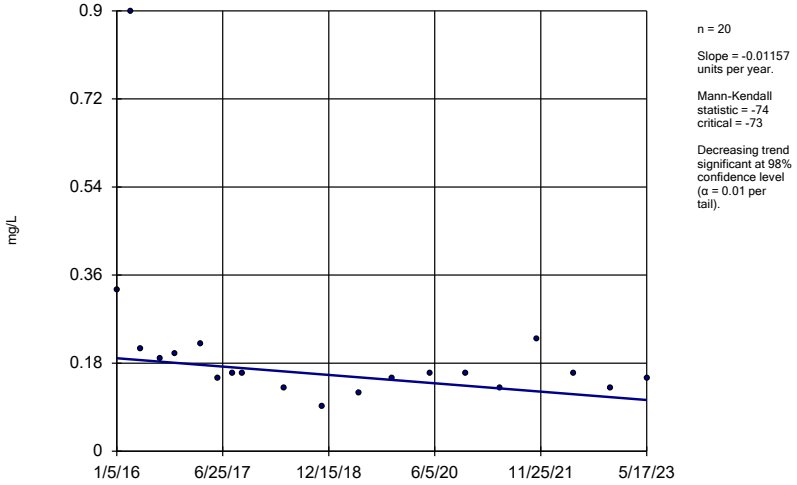
Trend Test

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant Printed 7/3/2024, 8:47 AM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
Total Dissolved Solids (mg/L)	MW-4	-6.971	-7	-73	No	20	0	n/a	n/a	0.02	NP
Total Dissolved Solids (mg/L)	MW-5	-3.205	-42	-73	No	20	0	n/a	n/a	0.02	NP
Total Dissolved Solids (mg/L)	**MW-5A**	**195.1**	**156**	**73**	**Yes**	**20**	**0**	**n/a**	**n/a**	**0.02**	**NP**
Total Dissolved Solids (mg/L)	MW-6	0	-4	-73	No	20	0	n/a	n/a	0.02	NP
Total Dissolved Solids (mg/L)	**MW-6A**	**50.05**	**113**	**73**	**Yes**	**20**	**0**	**n/a**	**n/a**	**0.02**	**NP**
Total Dissolved Solids (mg/L)	MW-7 (bg)	0	-48	-73	No	20	0	n/a	n/a	0.02	NP

Boron

MW-2 (bg)



n = 20

Slope = -0.01157 units per year.

Mann-Kendall statistic = -74
critical = -73

Decreasing trend significant at 98% confidence level (α = 0.01 per tail).

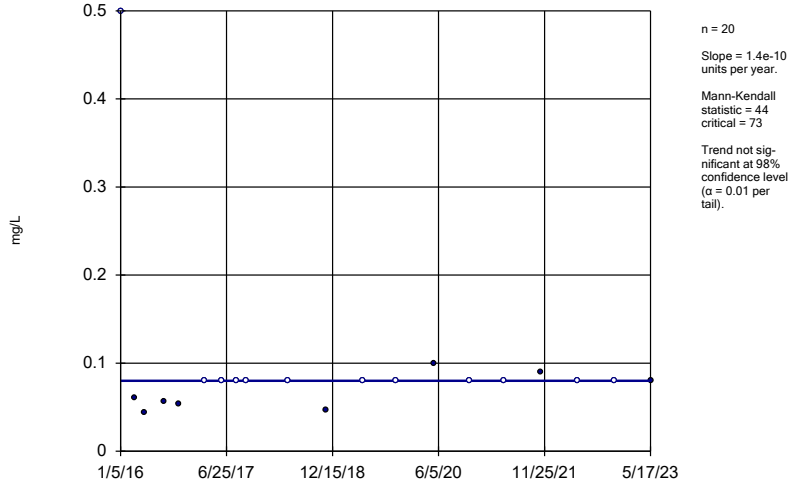
Sen's Slope Estimator Analysis Run 7/3/2024 8:45 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

Hollow symbols indicate censored values.

Boron

MW-3 (bg)



n = 20

Slope = 1.4e-10 units per year.

Mann-Kendall statistic = 44
critical = 73

Trend not significant at 98% confidence level (α = 0.01 per tail).

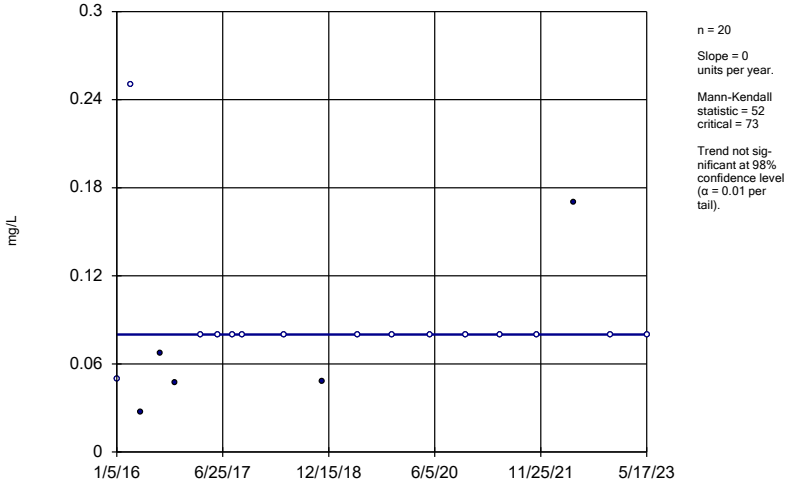
Sen's Slope Estimator Analysis Run 7/3/2024 8:45 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

Hollow symbols indicate censored values.

Boron

MW-4



n = 20

Slope = 0 units per year.

Mann-Kendall statistic = 52
critical = 73

Trend not significant at 98% confidence level (α = 0.01 per tail).

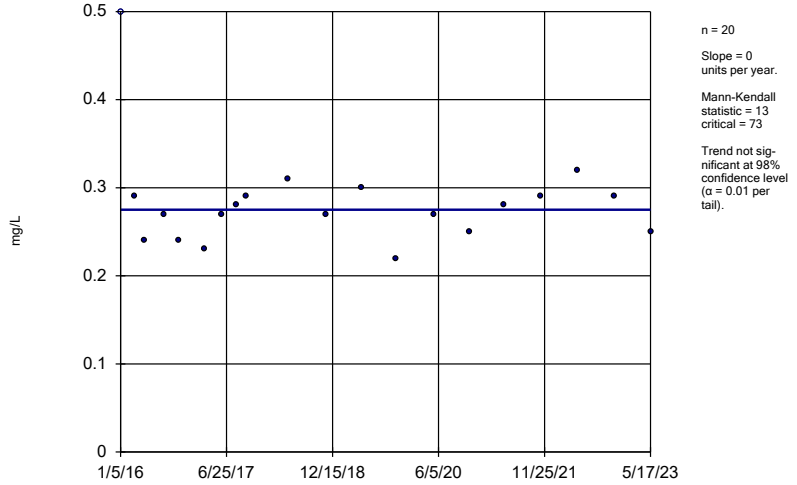
Sen's Slope Estimator Analysis Run 7/3/2024 8:45 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

Hollow symbols indicate censored values.

Boron

MW-5



n = 20

Slope = 0 units per year.

Mann-Kendall statistic = 13
critical = 73

Trend not significant at 98% confidence level (α = 0.01 per tail).

Sen's Slope Estimator Analysis Run 7/3/2024 8:45 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

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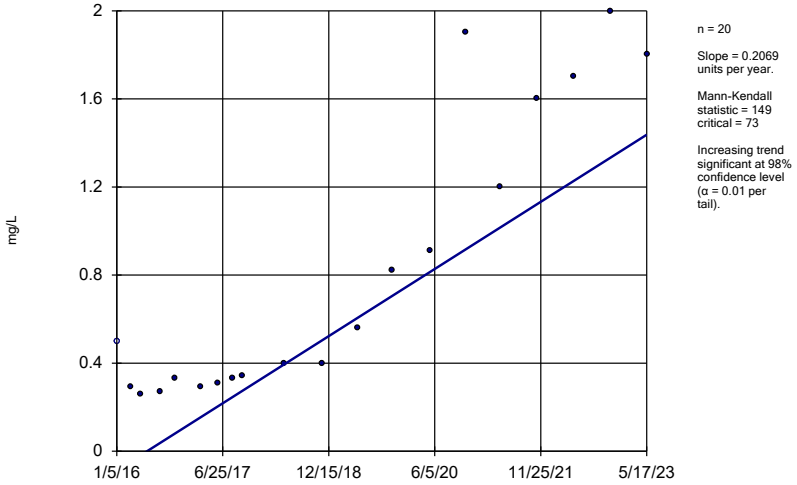
Hollow symbols indicate censored values.

Boron

MW-5A



n = 20

Slope = 0.2069 units per year.

Mann-Kendall statistic = 149
critical = 73

Increasing trend significant at 98% confidence level (α = 0.01 per tail).

Sen's Slope Estimator Analysis Run 7/3/2024 8:45 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

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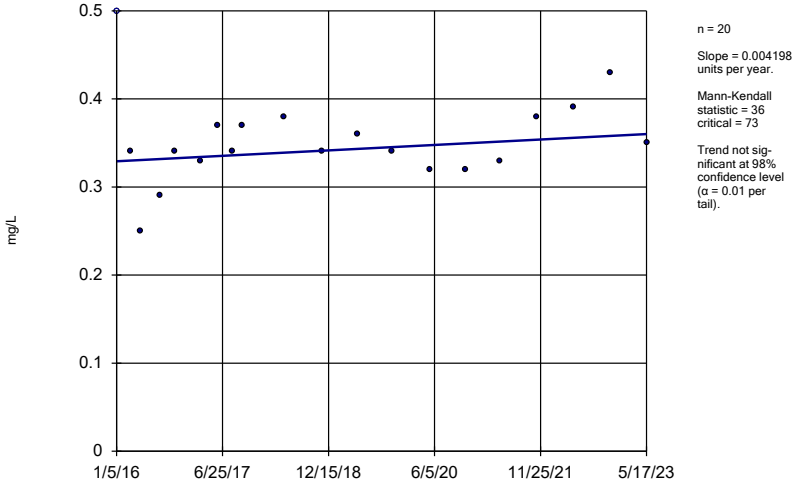
Hollow symbols indicate censored values.

Boron

MW-6



n = 20

Slope = 0.004198 units per year.

Mann-Kendall statistic = 36
critical = 73

Trend not significant at 98% confidence level (α = 0.01 per tail).

Sen's Slope Estimator Analysis Run 7/3/2024 8:45 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

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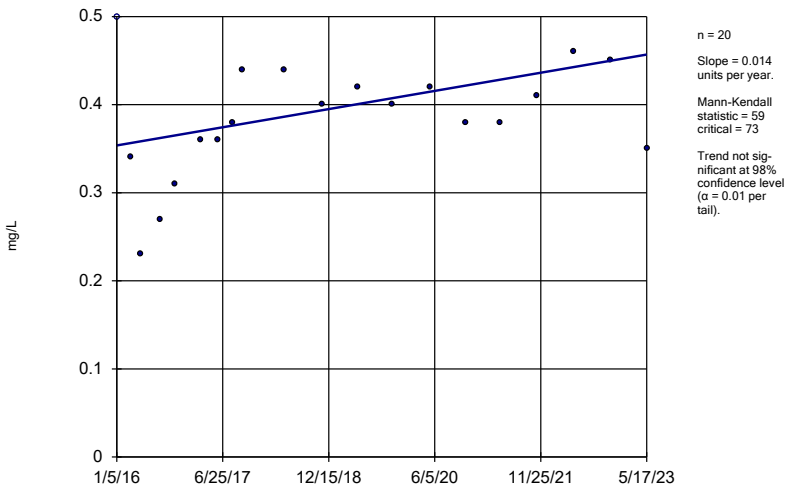
Hollow symbols indicate censored values.

Boron

MW-6A



n = 20

Slope = 0.014 units per year.

Mann-Kendall statistic = 59
critical = 73

Trend not significant at 98% confidence level (α = 0.01 per tail).

Sen's Slope Estimator Analysis Run 7/3/2024 8:45 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

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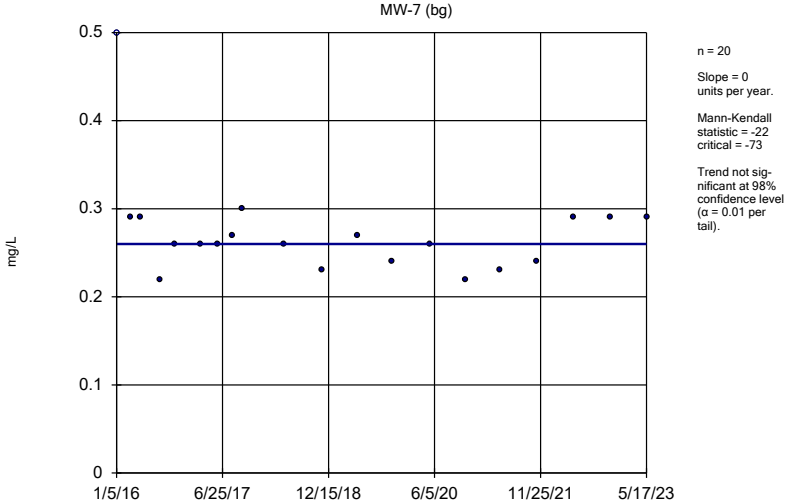
Hollow symbols indicate censored values.

Boron

MW-7 (bg)



n = 20

Slope = 0 units per year.

Mann-Kendall statistic = -22
critical = -73

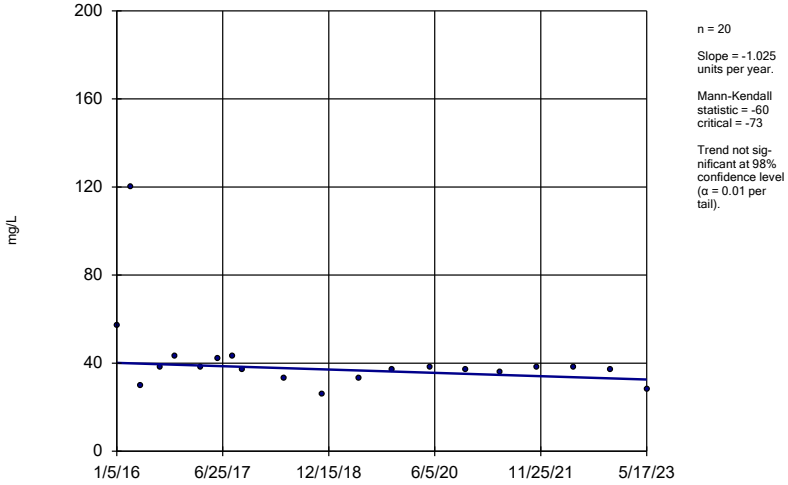
Trend not significant at 98% confidence level (α = 0.01 per tail).

Sen's Slope Estimator Analysis Run 7/3/2024 8:45 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

Calcium

MW-2 (bg)



n = 20

Slope = -1.025 units per year.

Mann-Kendall statistic = -60 critical = -73

Trend not significant at 98% confidence level (α = 0.01 per tail).

Sen's Slope Estimator Analysis Run 7/3/2024 8:45 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

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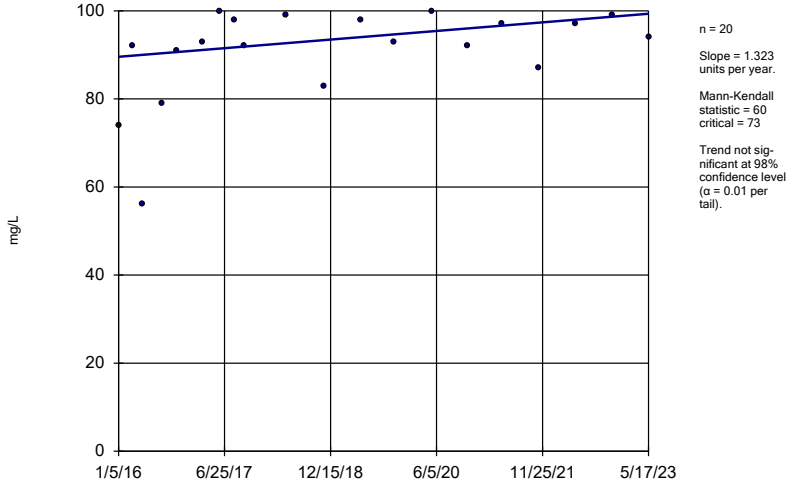
Calcium

MW-3 (bg)



n = 20

Slope = 1.323 units per year.

Mann-Kendall statistic = 60 critical = 73

Trend not significant at 98% confidence level (α = 0.01 per tail).

Sen's Slope Estimator Analysis Run 7/3/2024 8:45 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

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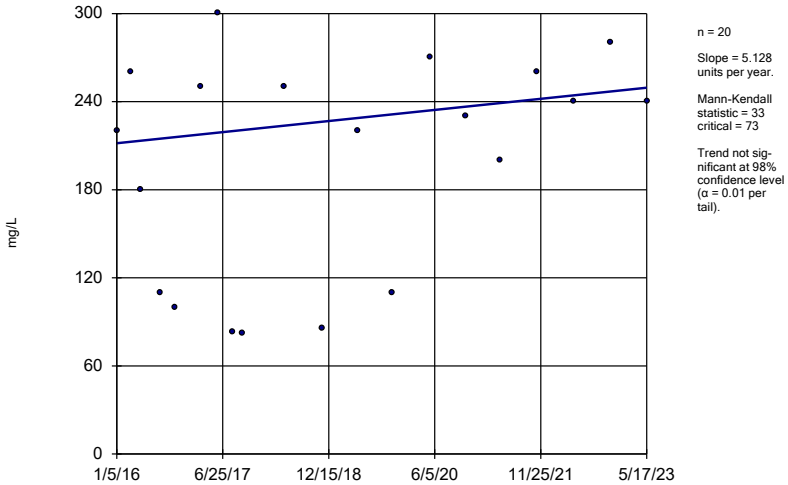
Calcium

MW-4



n = 20

Slope = 5.128 units per year.

Mann-Kendall statistic = 33 critical = 73

Trend not significant at 98% confidence level (α = 0.01 per tail).

Sen's Slope Estimator Analysis Run 7/3/2024 8:45 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

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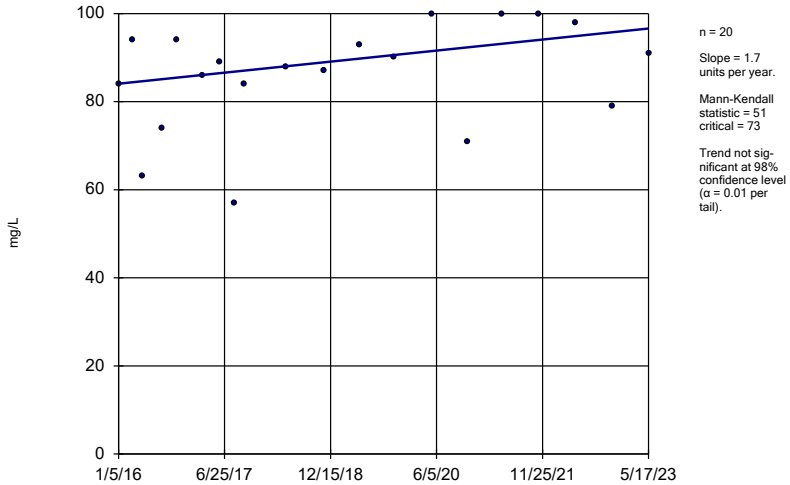
Calcium

MW-5



n = 20

Slope = 1.7 units per year.

Mann-Kendall statistic = 51 critical = 73

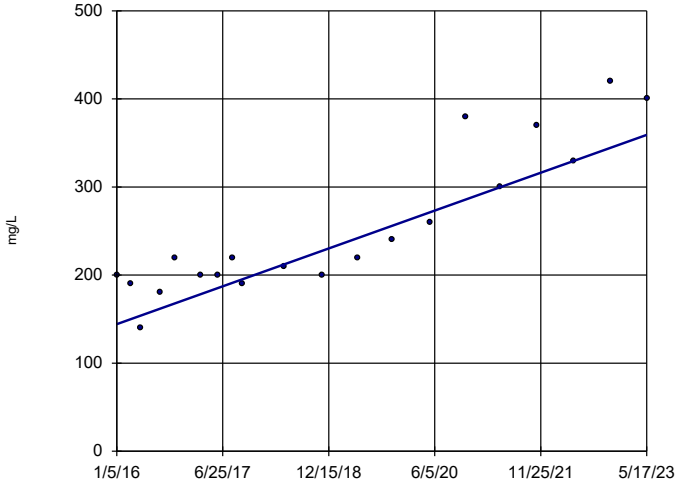
Trend not significant at 98% confidence level (α = 0.01 per tail).

Sen's Slope Estimator Analysis Run 7/3/2024 8:45 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

Calcium

MW-5A



n = 20

Slope = 29.17 units per year.

Mann-Kendall statistic = 136 critical = 73

Increasing trend significant at 98% confidence level (α = 0.01 per tail).

Sen's Slope Estimator Analysis Run 7/3/2024 8:45 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

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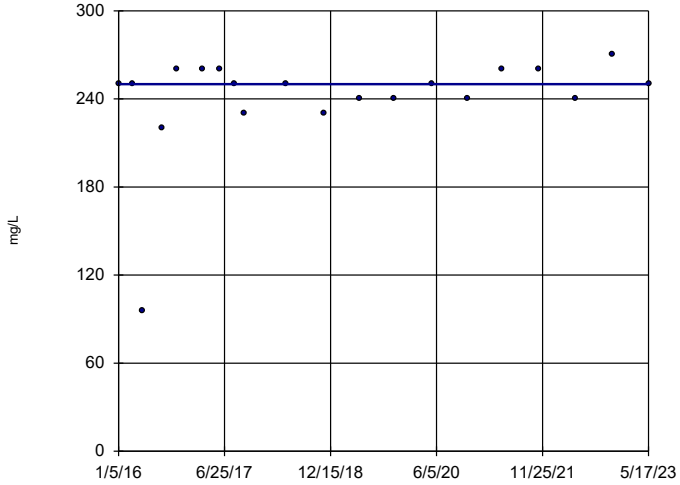
Calcium

MW-6



n = 20

Slope = 0 units per year.

Mann-Kendall statistic = 30 critical = 73

Trend not significant at 98% confidence level (α = 0.01 per tail).

Sen's Slope Estimator Analysis Run 7/3/2024 8:45 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

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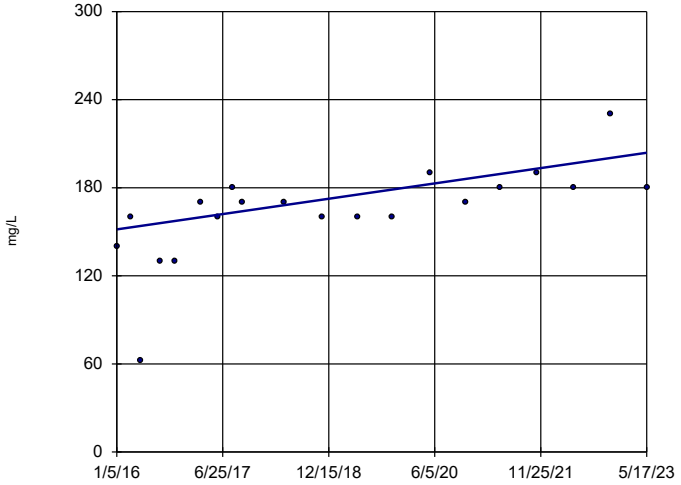
Calcium

MW-6A



n = 20

Slope = 7.097 units per year.

Mann-Kendall statistic = 108 critical = 73

Increasing trend significant at 98% confidence level (α = 0.01 per tail).

Sen's Slope Estimator Analysis Run 7/3/2024 8:45 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

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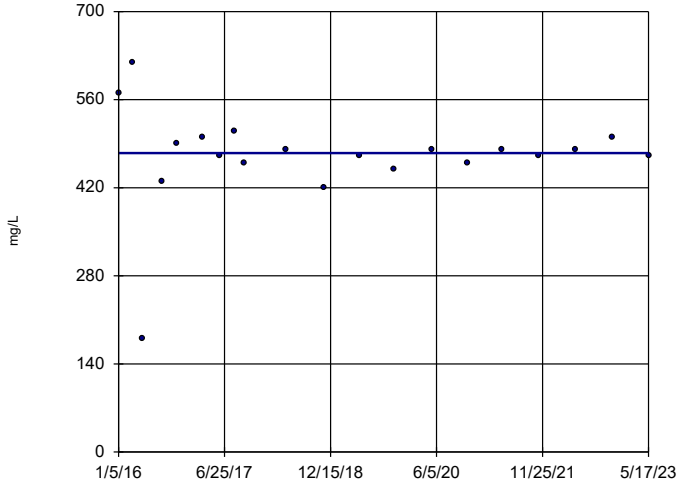
Calcium

MW-7 (bg)



n = 20

Slope = 0 units per year.

Mann-Kendall statistic = -12 critical = -73

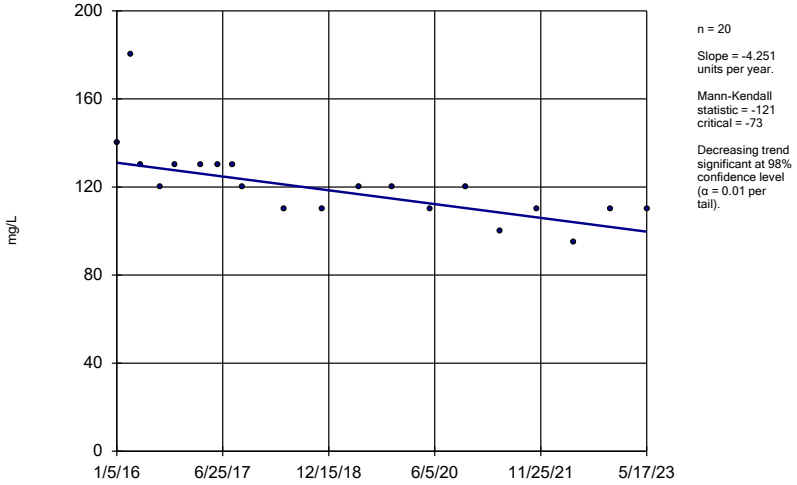
Trend not significant at 98% confidence level (α = 0.01 per tail).

Sen's Slope Estimator Analysis Run 7/3/2024 8:45 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

Chloride

MW-2 (bg)



n = 20

Slope = -4.251 units per year.

Mann-Kendall statistic = -121 critical = -73

Decreasing trend significant at 98% confidence level (α = 0.01 per tail).

Sen's Slope Estimator Analysis Run 7/3/2024 8:45 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

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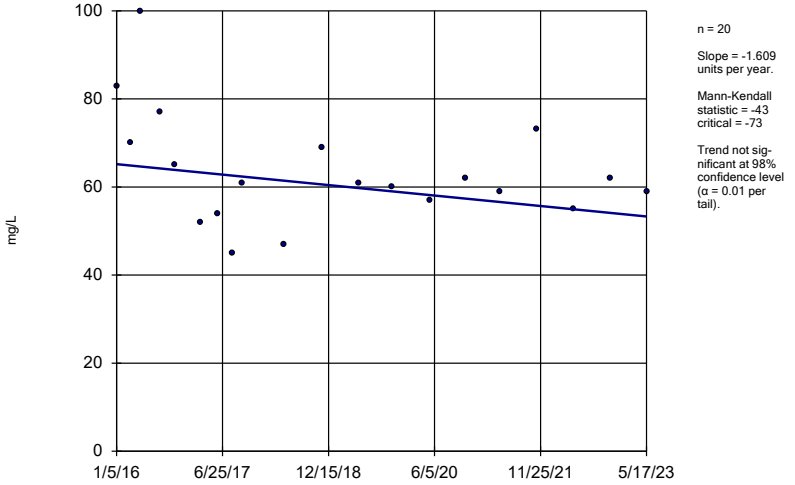
Chloride

MW-3 (bg)



n = 20

Slope = -1.609 units per year.

Mann-Kendall statistic = -43 critical = -73

Trend not significant at 98% confidence level (α = 0.01 per tail).

Sen's Slope Estimator Analysis Run 7/3/2024 8:45 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

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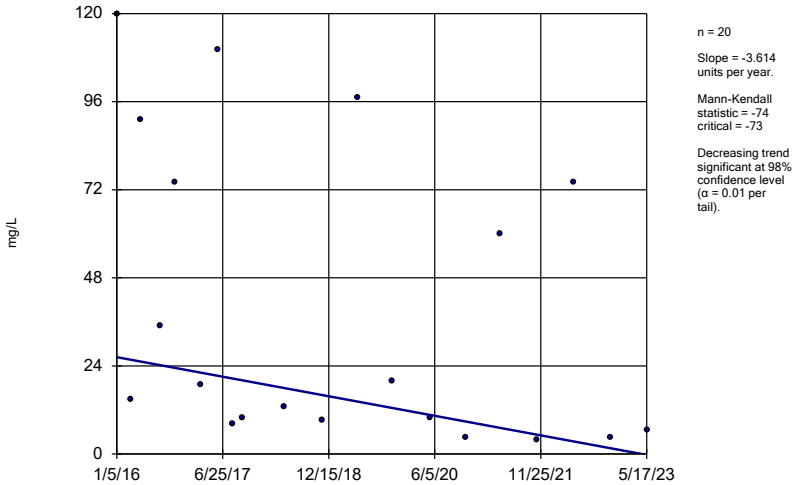
Chloride

MW-4



n = 20

Slope = -3.614 units per year.

Mann-Kendall statistic = -74 critical = -73

Decreasing trend significant at 98% confidence level (α = 0.01 per tail).

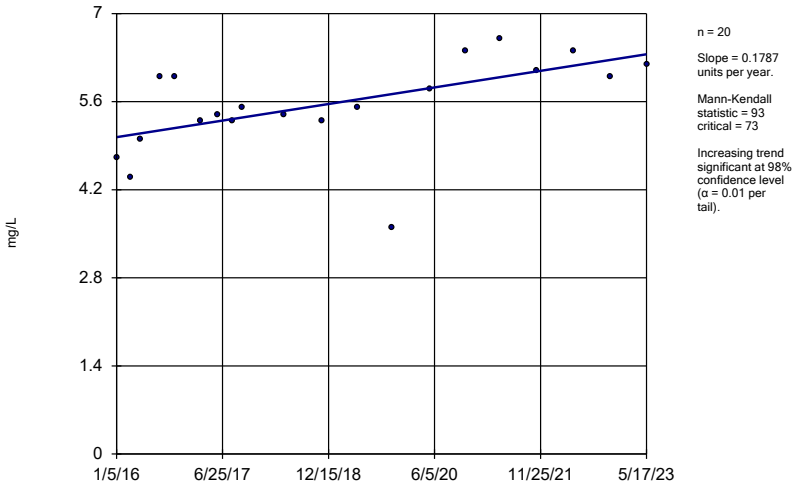
Sen's Slope Estimator Analysis Run 7/3/2024 8:45 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

Sanitas™ v.10.0.19 Software licensed to Jett Environmental Consulting. UG

Chloride

MW-5



n = 20

Slope = 0.1787 units per year.

Mann-Kendall statistic = 93 critical = 73

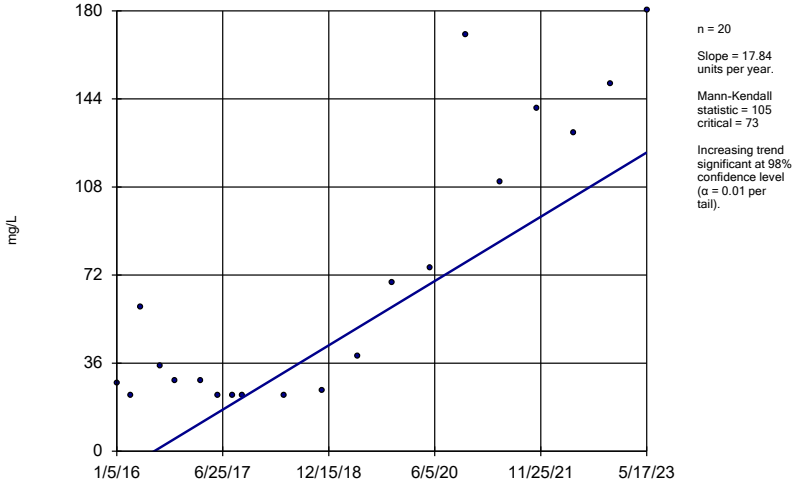
Increasing trend significant at 98% confidence level (α = 0.01 per tail).

Sen's Slope Estimator Analysis Run 7/3/2024 8:45 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

Chloride

MW-5A



n = 20

Slope = 17.84 units per year.

Mann-Kendall statistic = 105 critical = 73

Increasing trend significant at 98% confidence level (α = 0.01 per tail).

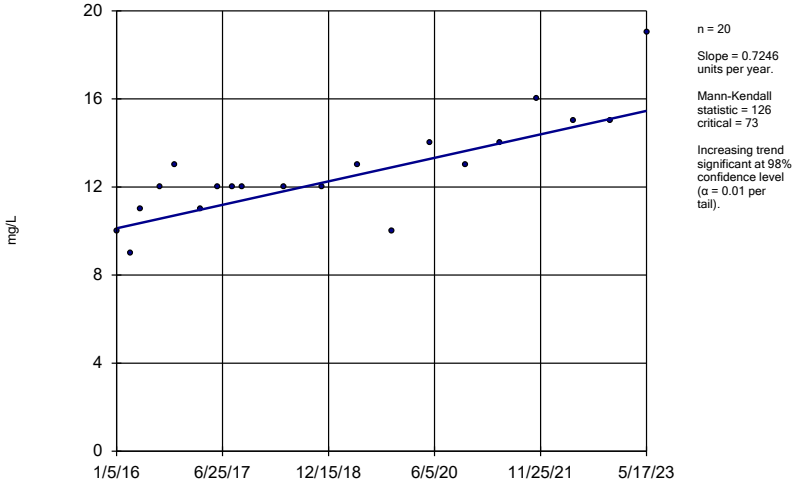
Sen's Slope Estimator Analysis Run 7/3/2024 8:45 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

Sanitas™ v.10.0.19 Software licensed to Jett Environmental Consulting. UG

Chloride

MW-6



n = 20

Slope = 0.7246 units per year.

Mann-Kendall statistic = 126 critical = 73

Increasing trend significant at 98% confidence level (α = 0.01 per tail).

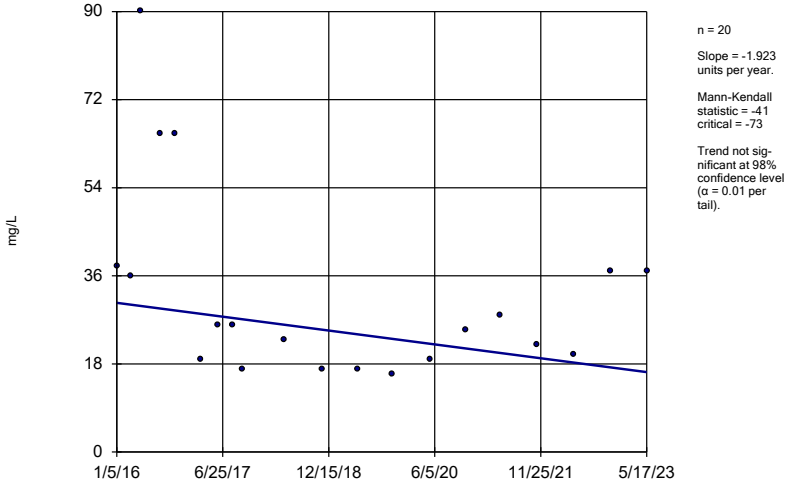
Sen's Slope Estimator Analysis Run 7/3/2024 8:45 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

Sanitas™ v.10.0.19 Software licensed to Jett Environmental Consulting. UG

Chloride

MW-6A



n = 20

Slope = -1.923 units per year.

Mann-Kendall statistic = -41 critical = -73

Trend not sig-nificant at 98% confidence level (α = 0.01 per tail).

Sen's Slope Estimator Analysis Run 7/3/2024 8:45 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

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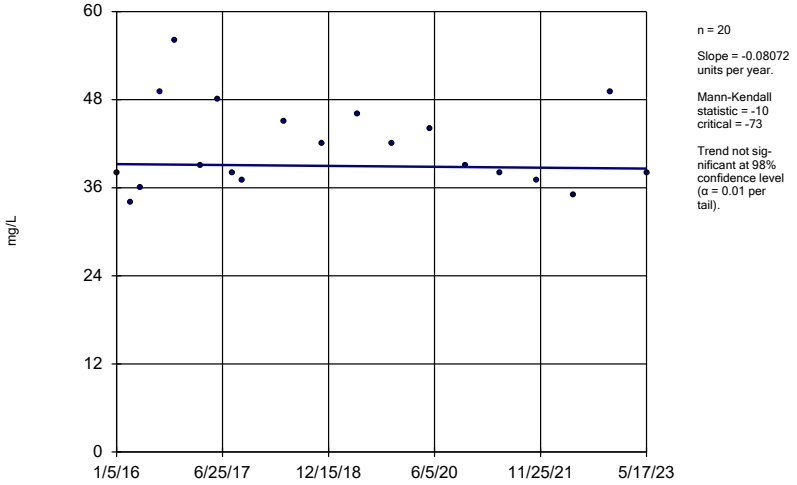
Chloride

MW-7 (bg)



n = 20

Slope = -0.08072 units per year.

Mann-Kendall statistic = -10 critical = -73

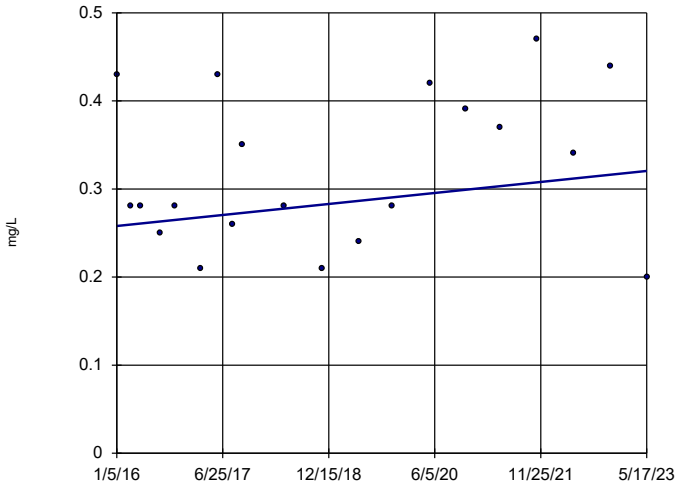
Trend not sig-nificant at 98% confidence level (α = 0.01 per tail).

Sen's Slope Estimator Analysis Run 7/3/2024 8:45 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

Fluoride

MW-2 (bg)



n = 20

Slope = 0.008487 units per year.

Mann-Kendall statistic = 22
critical = 73

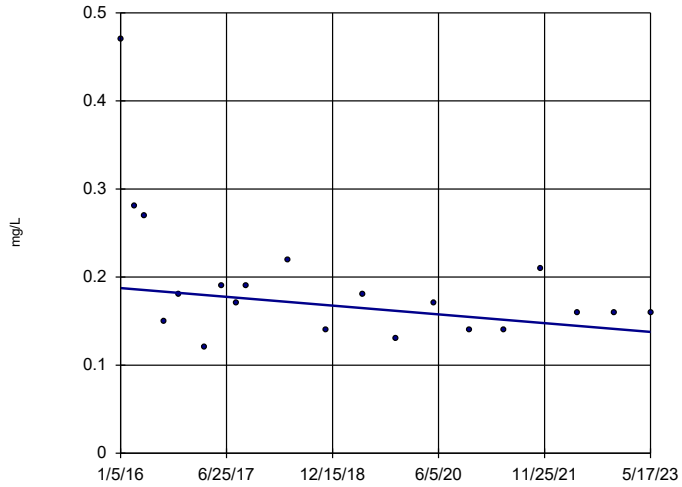
Trend not significant at 98% confidence level (α = 0.01 per tail).

Sen's Slope Estimator Analysis Run 7/3/2024 8:45 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

Fluoride

MW-3 (bg)



n = 20

Slope = -0.006744 units per year.

Mann-Kendall statistic = -61
critical = -73

Trend not significant at 98% confidence level (α = 0.01 per tail).

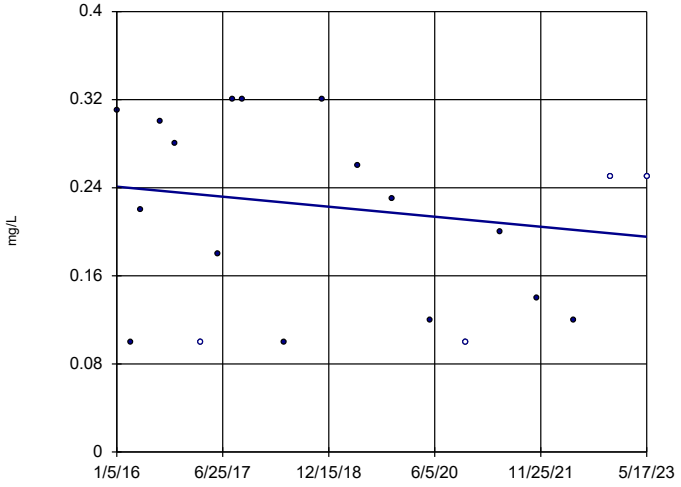
Sen's Slope Estimator Analysis Run 7/3/2024 8:45 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

Hollow symbols indicate censored values.

Fluoride

MW-4



n = 20

Slope = -0.006169 units per year.

Mann-Kendall statistic = -21
critical = -73

Trend not significant at 98% confidence level (α = 0.01 per tail).

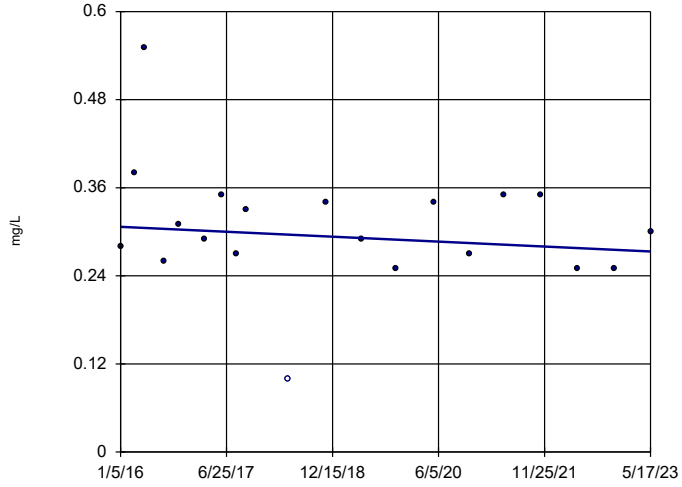
Sen's Slope Estimator Analysis Run 7/3/2024 8:45 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

Hollow symbols indicate censored values.

Fluoride

MW-5



n = 20

Slope = -0.004548 units per year.

Mann-Kendall statistic = -27
critical = -73

Trend not significant at 98% confidence level (α = 0.01 per tail).

Sen's Slope Estimator Analysis Run 7/3/2024 8:45 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

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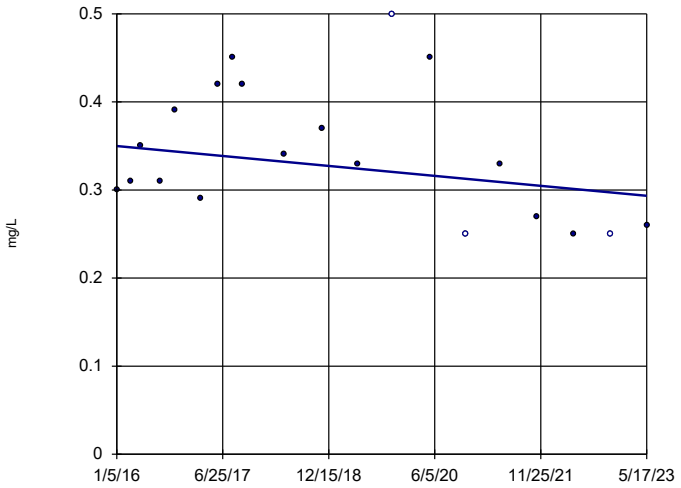
Hollow symbols indicate censored values.

Fluoride

MW-5A



n = 20

Slope = -0.007672 units per year.

Mann-Kendall statistic = -37
critical = -73

Trend not significant at 98% confidence level (α = 0.01 per tail).

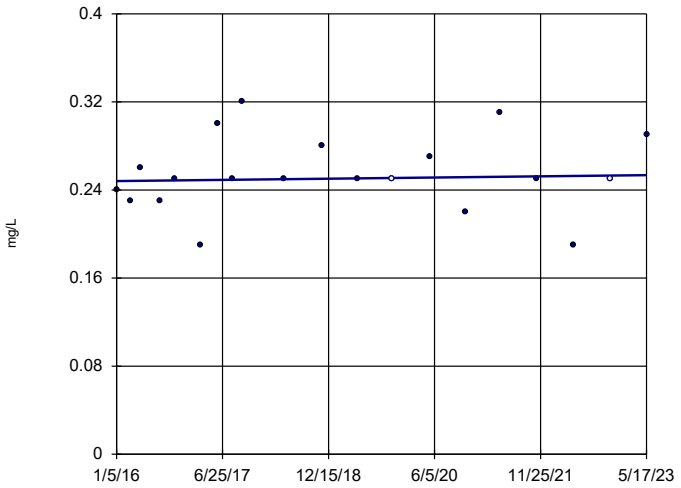
Sen's Slope Estimator Analysis Run 7/3/2024 8:45 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

Sanitas™ v.10.0.19 Software licensed to Jett Environmental Consulting. UG
Hollow symbols indicate censored values.

Fluoride

MW-6



n = 20

Slope = 0.0007283 units per year.

Mann-Kendall statistic = 23
critical = 73

Trend not significant at 98% confidence level (α = 0.01 per tail).

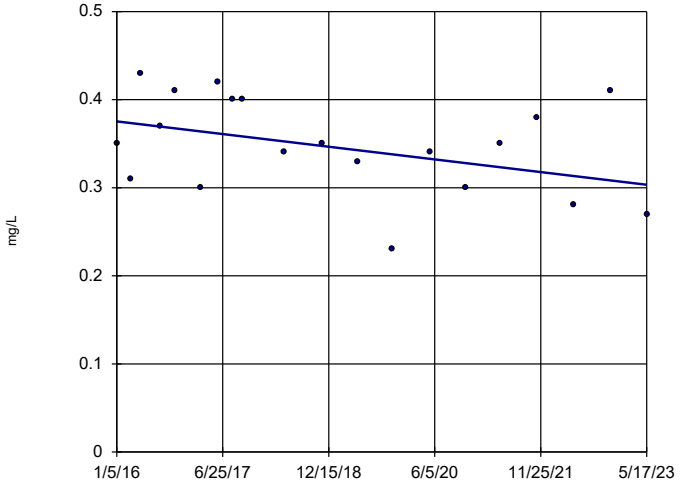
Sen's Slope Estimator Analysis Run 7/3/2024 8:45 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

Sanitas™ v.10.0.19 Software licensed to Jett Environmental Consulting. UG

Fluoride

MW-6A



n = 20

Slope = -0.009747 units per year.

Mann-Kendall statistic = -49
critical = -73

Trend not significant at 98% confidence level (α = 0.01 per tail).

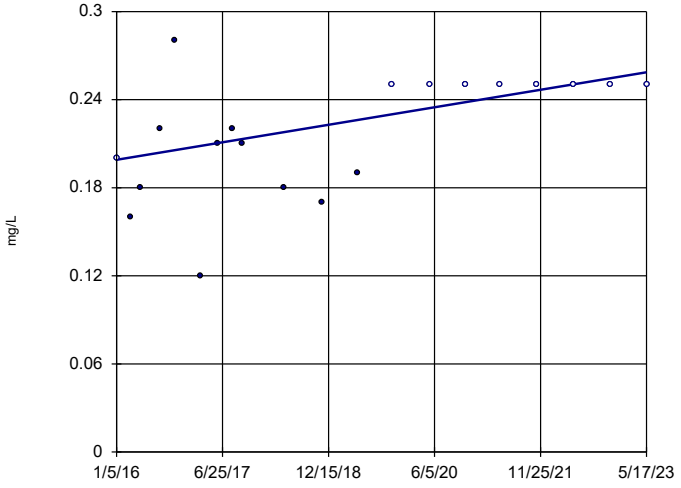
Sen's Slope Estimator Analysis Run 7/3/2024 8:45 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

Sanitas™ v.10.0.19 Software licensed to Jett Environmental Consulting. UG
Hollow symbols indicate censored values.

Fluoride

MW-7 (bg)



n = 20

Slope = 0.008083 units per year.

Mann-Kendall statistic = 77
critical = 73

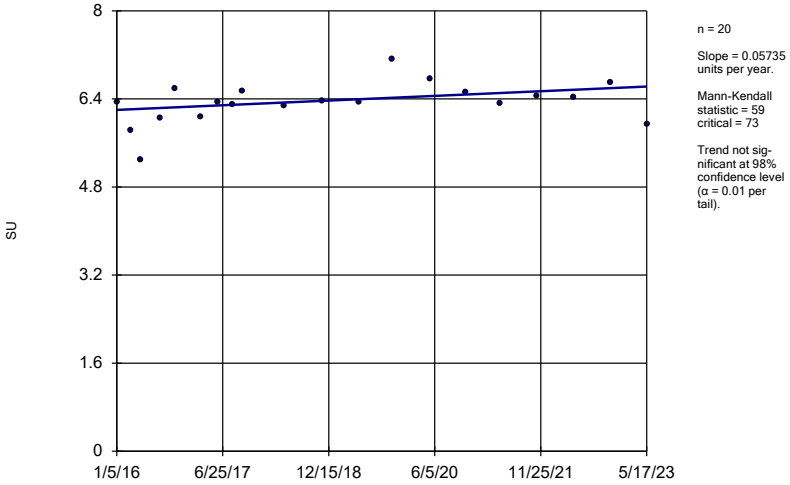
Increasing trend significant at 98% confidence level (α = 0.01 per tail).

Sen's Slope Estimator Analysis Run 7/3/2024 8:45 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

pH

MW-2 (bg)



n = 20

Slope = 0.05735 units per year.

Mann-Kendall statistic = 59 critical = 73

Trend not significant at 98% confidence level (α = 0.01 per tail).

Sen's Slope Estimator Analysis Run 7/3/2024 8:45 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

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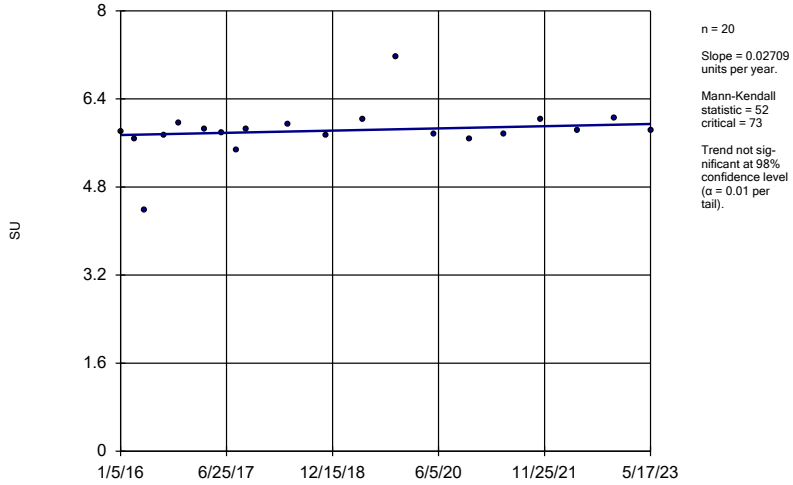
pH

MW-3 (bg)



n = 20

Slope = 0.02709 units per year.

Mann-Kendall statistic = 52 critical = 73

Trend not significant at 98% confidence level (α = 0.01 per tail).

Sen's Slope Estimator Analysis Run 7/3/2024 8:46 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

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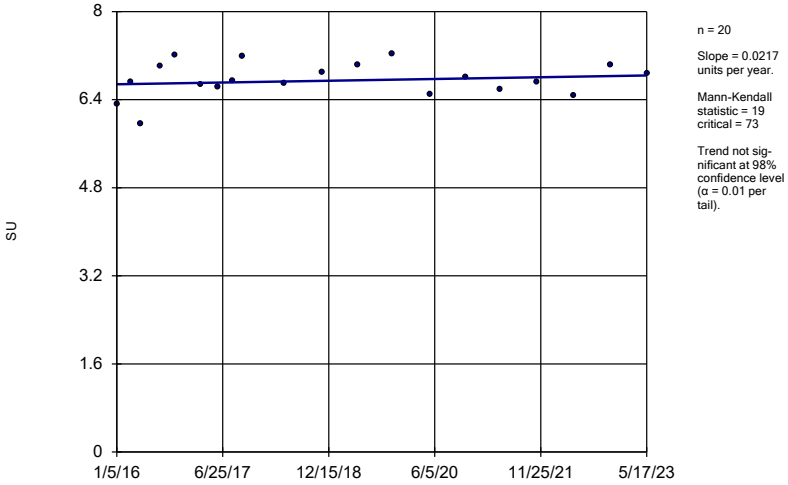
pH

MW-4



n = 20

Slope = 0.0217 units per year.

Mann-Kendall statistic = 19 critical = 73

Trend not significant at 98% confidence level (α = 0.01 per tail).

Sen's Slope Estimator Analysis Run 7/3/2024 8:46 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

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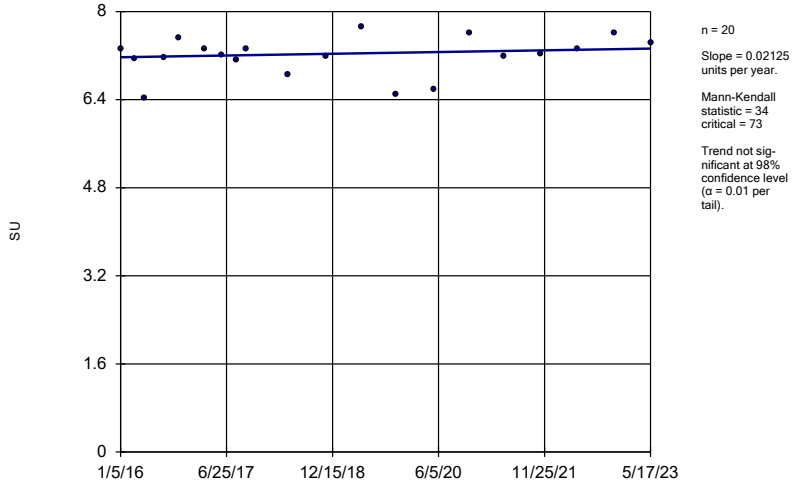
pH

MW-5



n = 20

Slope = 0.02125 units per year.

Mann-Kendall statistic = 34 critical = 73

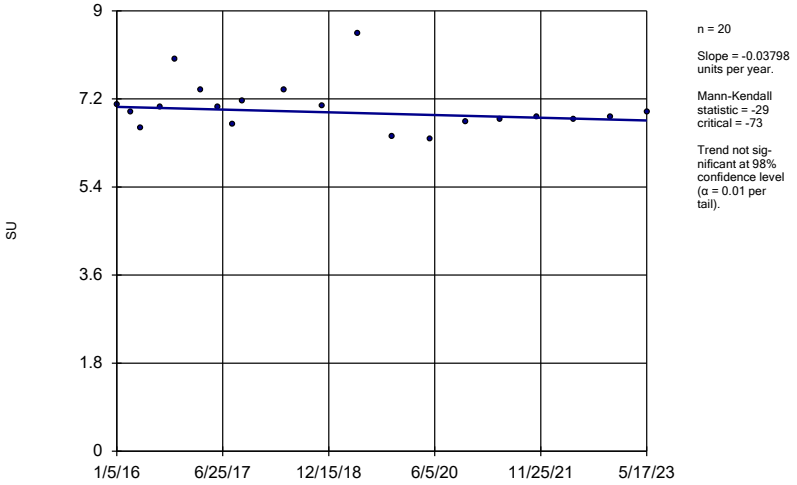
Trend not significant at 98% confidence level (α = 0.01 per tail).

Sen's Slope Estimator Analysis Run 7/3/2024 8:46 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

pH

MW-5A



n = 20

Slope = -0.03798 units per year.

Mann-Kendall statistic = -29 critical = -73

Trend not significant at 98% confidence level (α = 0.01 per tail).

Sen's Slope Estimator Analysis Run 7/3/2024 8:46 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

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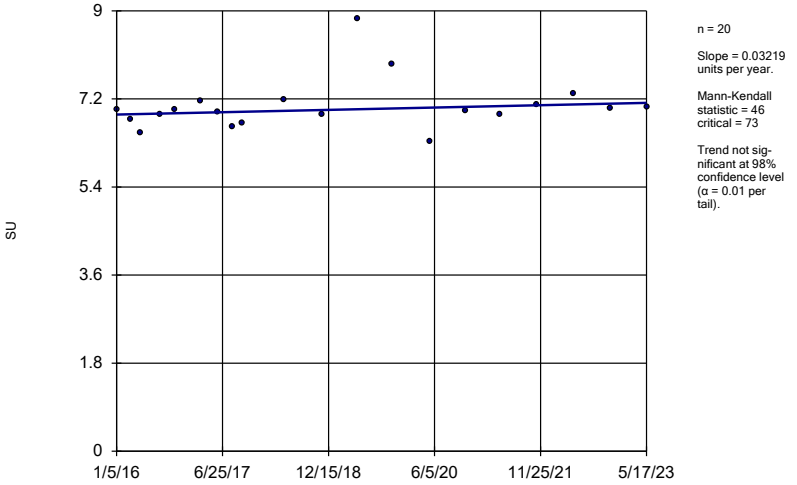
pH

MW-6



n = 20

Slope = 0.03219 units per year.

Mann-Kendall statistic = 46 critical = 73

Trend not significant at 98% confidence level (α = 0.01 per tail).

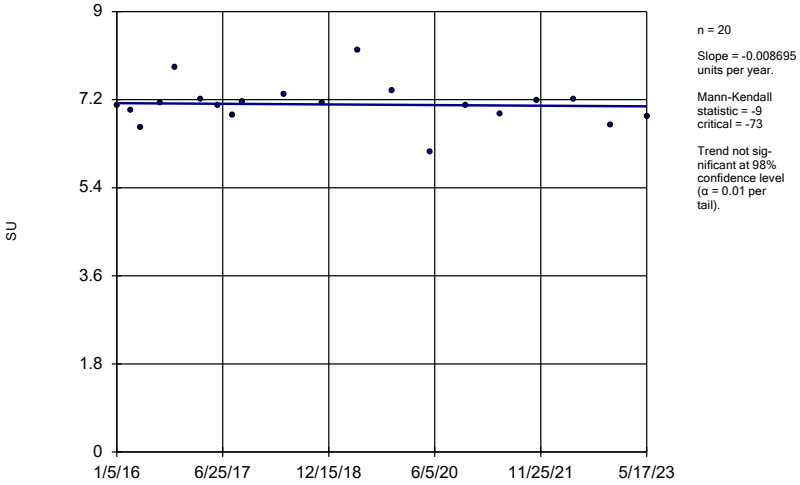
Sen's Slope Estimator Analysis Run 7/3/2024 8:46 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

Sanitas™ v.10.0.19 Software licensed to Jett Environmental Consulting. UG

pH

MW-6A



n = 20

Slope = -0.008695 units per year.

Mann-Kendall statistic = -9 critical = -73

Trend not significant at 98% confidence level (α = 0.01 per tail).

Sen's Slope Estimator Analysis Run 7/3/2024 8:46 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

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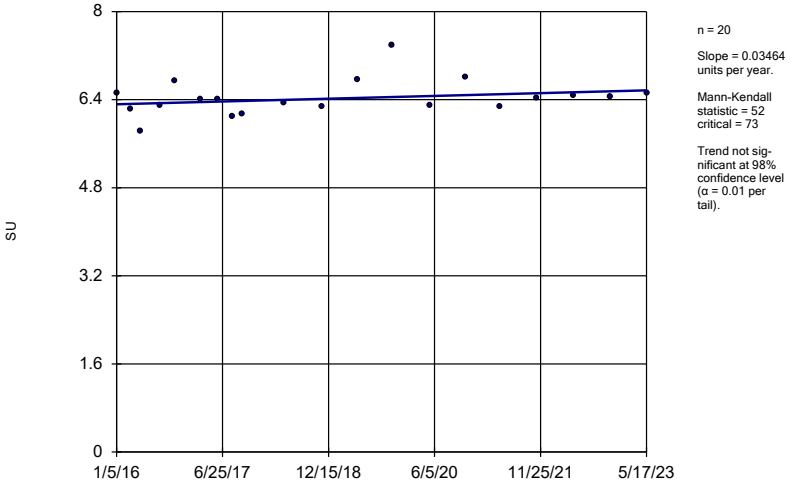
pH

MW-7 (bg)



n = 20

Slope = 0.03464 units per year.

Mann-Kendall statistic = 52 critical = 73

Trend not significant at 98% confidence level (α = 0.01 per tail).

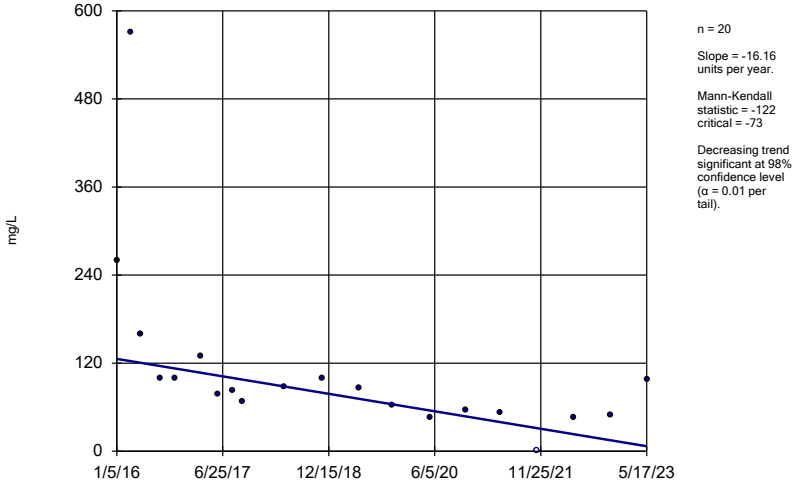
Sen's Slope Estimator Analysis Run 7/3/2024 8:46 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

Hollow symbols indicate censored values.

Sulfate

MW-2 (bg)



n = 20

Slope = -16.16 units per year.

Mann-Kendall statistic = -122 critical = -73

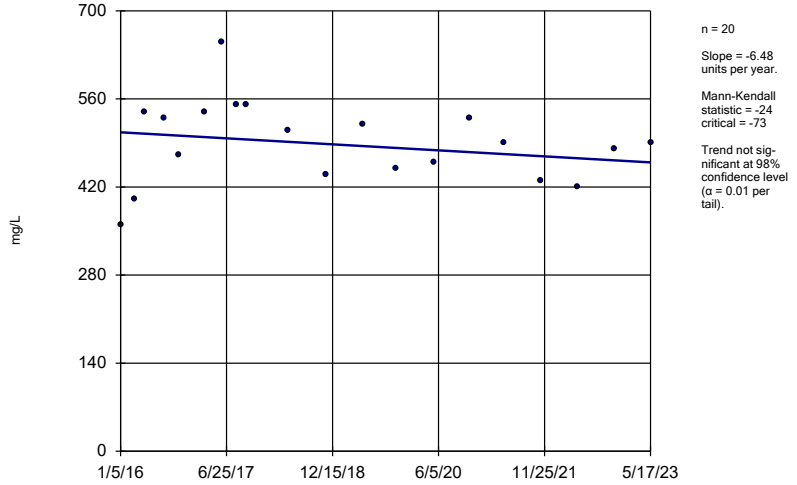
Decreasing trend significant at 98% confidence level (α = 0.01 per tail).

Sen's Slope Estimator Analysis Run 7/3/2024 8:46 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

Sulfate

MW-3 (bg)



n = 20

Slope = -6.48 units per year.

Mann-Kendall statistic = -24 critical = -73

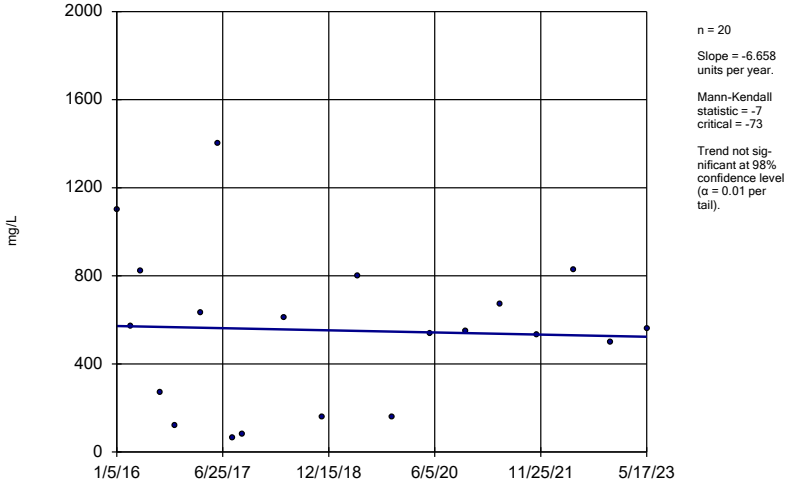
Trend not significant at 98% confidence level (α = 0.01 per tail).

Sen's Slope Estimator Analysis Run 7/3/2024 8:46 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

Sulfate

MW-4



n = 20

Slope = -6.658 units per year.

Mann-Kendall statistic = -7 critical = -73

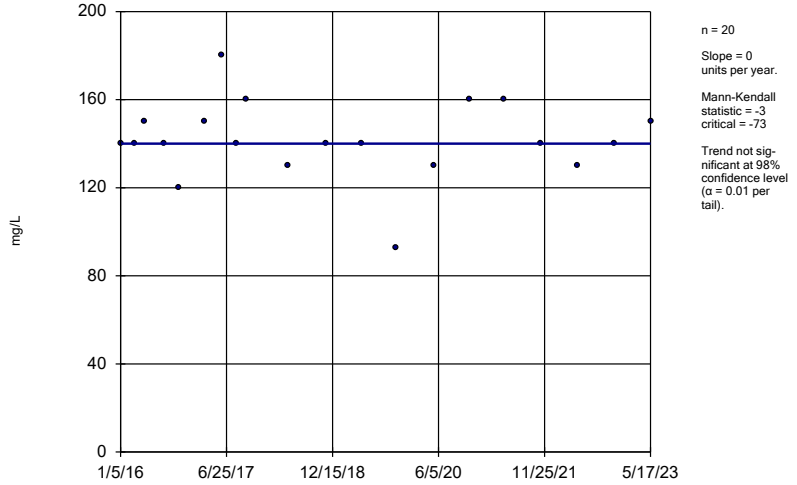
Trend not significant at 98% confidence level (α = 0.01 per tail).

Sen's Slope Estimator Analysis Run 7/3/2024 8:46 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

Sulfate

MW-5



n = 20

Slope = 0 units per year.

Mann-Kendall statistic = -3 critical = -73

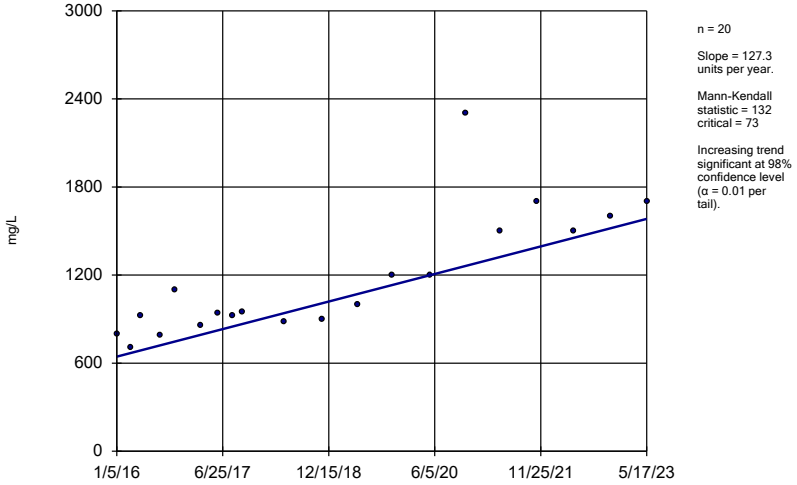
Trend not significant at 98% confidence level (α = 0.01 per tail).

Sen's Slope Estimator Analysis Run 7/3/2024 8:46 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

Sulfate

MW-5A



n = 20

Slope = 127.3 units per year.

Mann-Kendall statistic = 132
critical = 73

Increasing trend significant at 98% confidence level (α = 0.01 per tail).

Sen's Slope Estimator Analysis Run 7/3/2024 8:46 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

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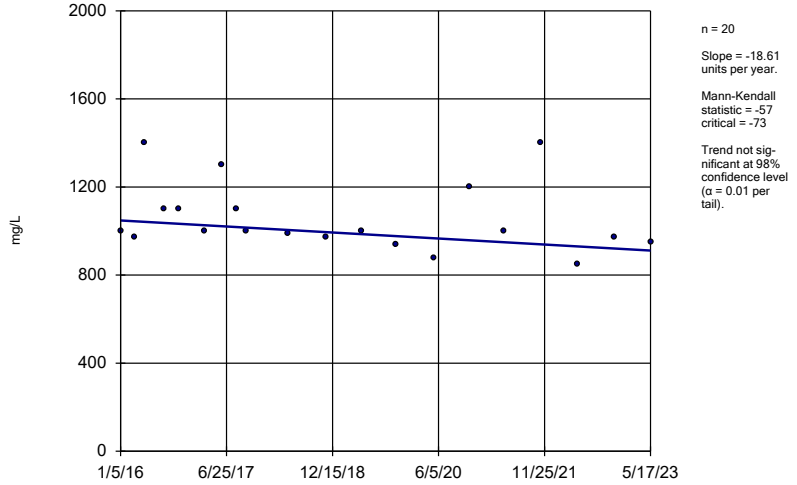
Sulfate

MW-6



n = 20

Slope = -18.61 units per year.

Mann-Kendall statistic = -57
critical = -73

Trend not significant at 98% confidence level (α = 0.01 per tail).

Sen's Slope Estimator Analysis Run 7/3/2024 8:46 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

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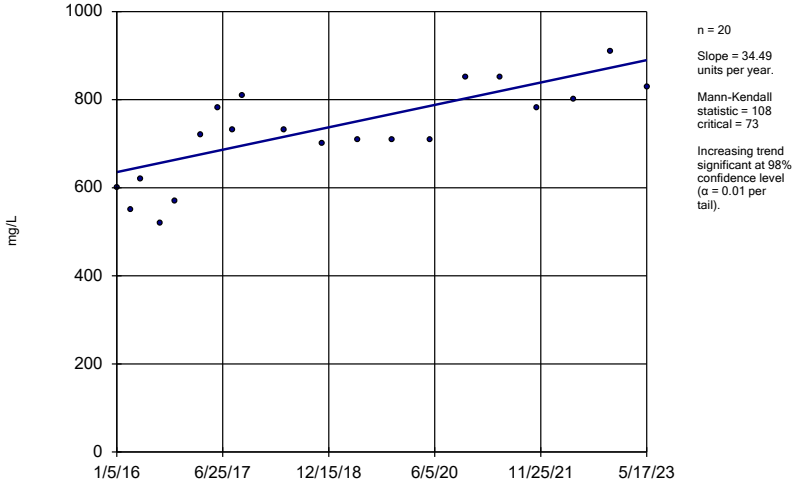
Sulfate

MW-6A



n = 20

Slope = 34.49 units per year.

Mann-Kendall statistic = 108
critical = 73

Increasing trend significant at 98% confidence level (α = 0.01 per tail).

Sen's Slope Estimator Analysis Run 7/3/2024 8:46 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

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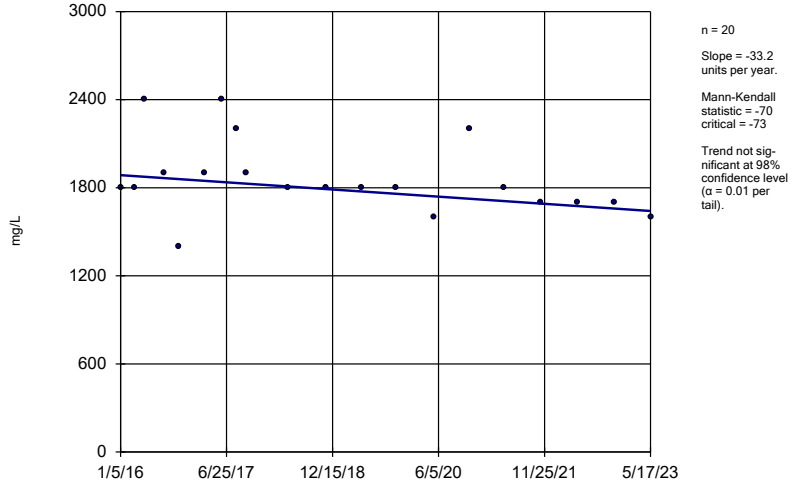
Sulfate

MW-7 (bg)



n = 20

Slope = -33.2 units per year.

Mann-Kendall statistic = -70
critical = -73

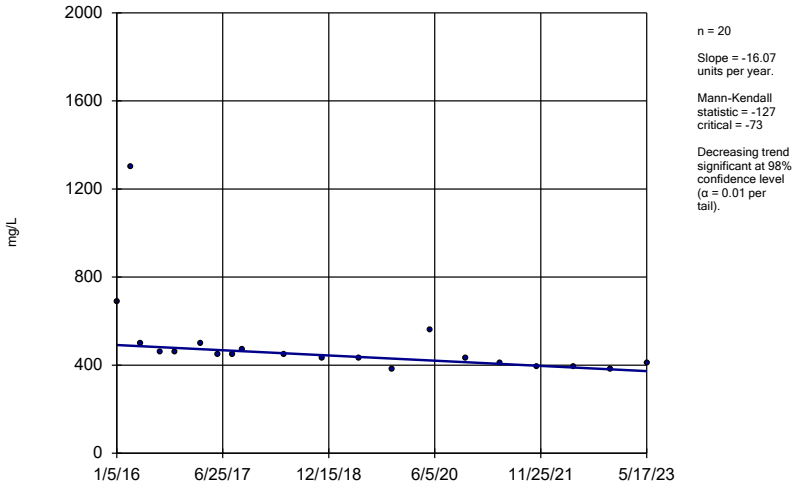
Trend not significant at 98% confidence level (α = 0.01 per tail).

Sen's Slope Estimator Analysis Run 7/3/2024 8:46 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

Total Dissolved Solids

MW-2 (bg)



n = 20

Slope = -16.07 units per year.

Mann-Kendall statistic = -127 critical = -73

Decreasing trend significant at 98% confidence level (α = 0.01 per tail).

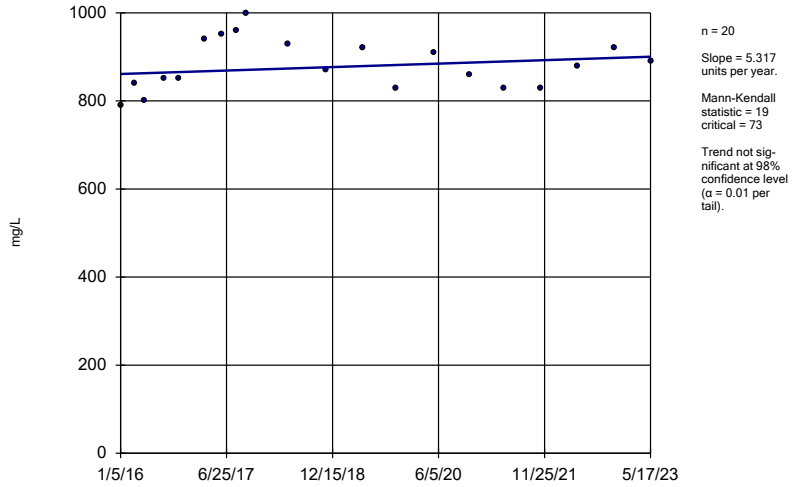
Sen's Slope Estimator Analysis Run 7/3/2024 8:46 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

Sanitas™ v.10.0.19 Software licensed to Jett Environmental Consulting. UG

Total Dissolved Solids

MW-3 (bg)



n = 20

Slope = 5.317 units per year.

Mann-Kendall statistic = 19 critical = 73

Trend not significant at 98% confidence level (α = 0.01 per tail).

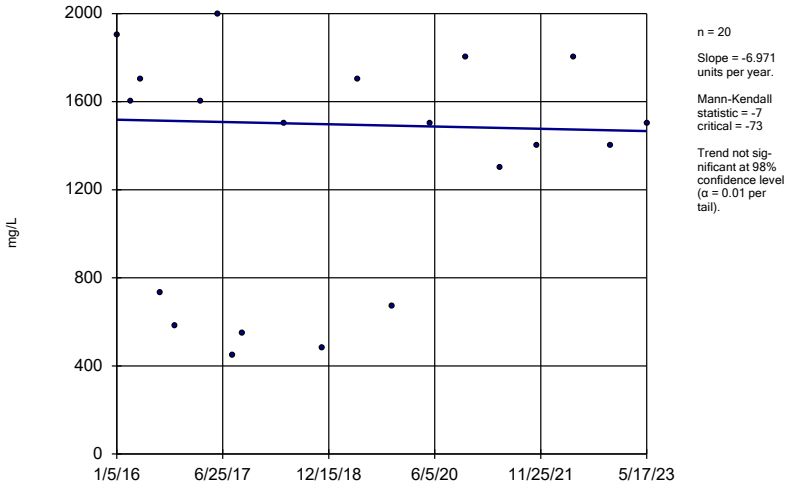
Sen's Slope Estimator Analysis Run 7/3/2024 8:46 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

Sanitas™ v.10.0.19 Software licensed to Jett Environmental Consulting. UG

Total Dissolved Solids

MW-4



n = 20

Slope = -6.971 units per year.

Mann-Kendall statistic = -7 critical = -73

Trend not significant at 98% confidence level (α = 0.01 per tail).

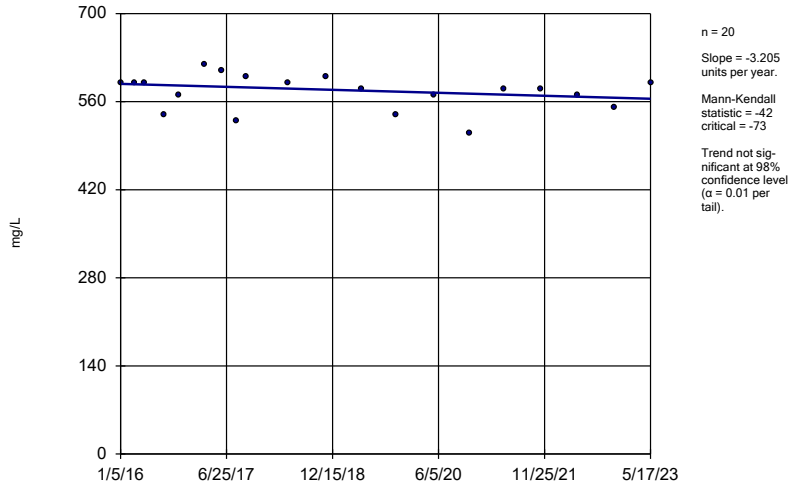
Sen's Slope Estimator Analysis Run 7/3/2024 8:46 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

Sanitas™ v.10.0.19 Software licensed to Jett Environmental Consulting. UG

Total Dissolved Solids

MW-5



n = 20

Slope = -3.205 units per year.

Mann-Kendall statistic = -42 critical = -73

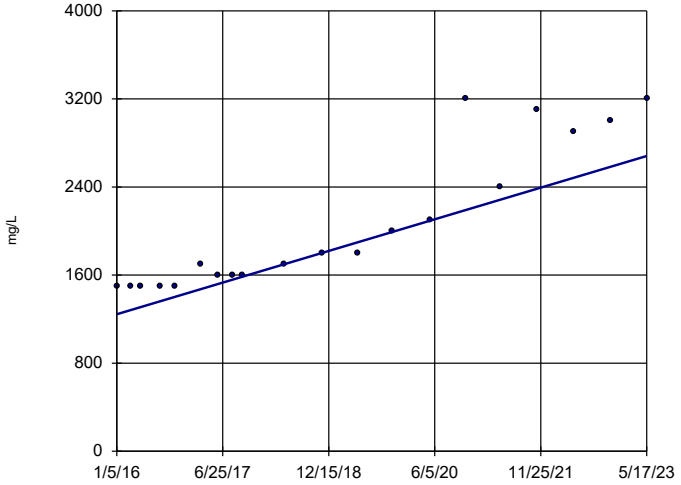
Trend not significant at 98% confidence level (α = 0.01 per tail).

Sen's Slope Estimator Analysis Run 7/3/2024 8:46 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

Total Dissolved Solids

MW-5A



n = 20

Slope = 195.1 units per year.

Mann-Kendall statistic = 156 critical = 73

Increasing trend significant at 98% confidence level (α = 0.01 per tail).

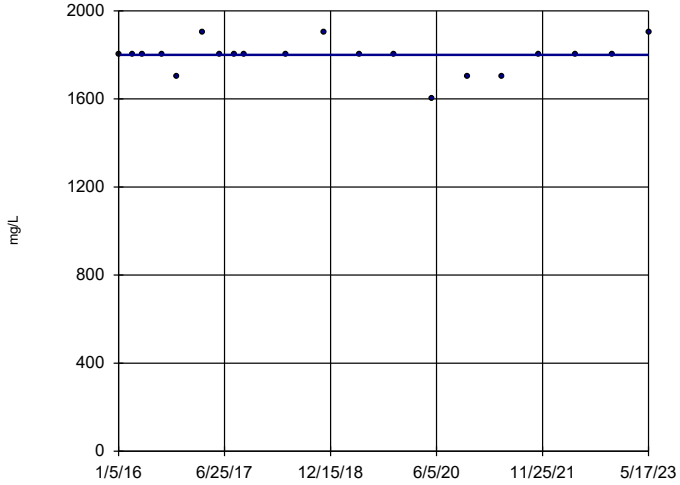
Sen's Slope Estimator Analysis Run 7/3/2024 8:46 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

Sanitas™ v.10.0.19 Software licensed to Jett Environmental Consulting. UG

Total Dissolved Solids

MW-6



n = 20

Slope = 0 units per year.

Mann-Kendall statistic = -4 critical = -73

Trend not significant at 98% confidence level (α = 0.01 per tail).

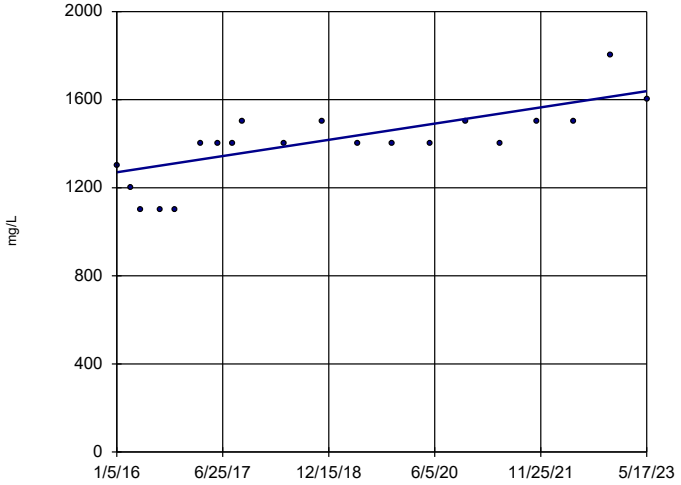
Sen's Slope Estimator Analysis Run 7/3/2024 8:46 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

Sanitas™ v.10.0.19 Software licensed to Jett Environmental Consulting. UG

Total Dissolved Solids

MW-6A



n = 20

Slope = 50.05 units per year.

Mann-Kendall statistic = 113 critical = 73

Increasing trend significant at 98% confidence level (α = 0.01 per tail).

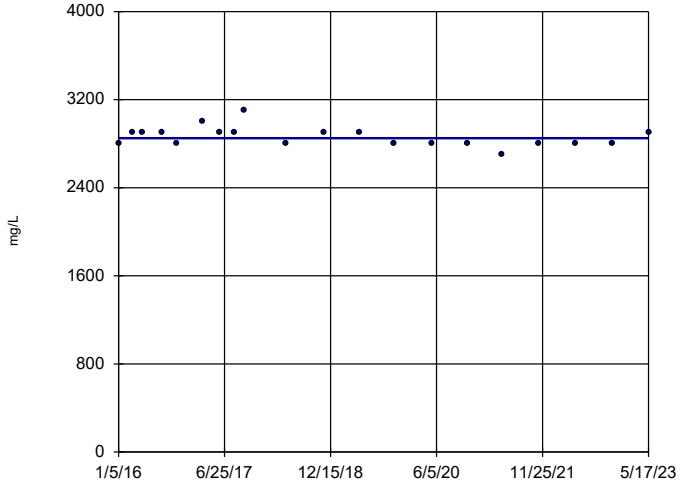
Sen's Slope Estimator Analysis Run 7/3/2024 8:46 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

Sanitas™ v.10.0.19 Software licensed to Jett Environmental Consulting. UG

Total Dissolved Solids

MW-7 (bg)



n = 20

Slope = 0 units per year.

Mann-Kendall statistic = -48 critical = -73

Trend not significant at 98% confidence level (α = 0.01 per tail).

Sen's Slope Estimator Analysis Run 7/3/2024 8:46 AM

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

ATTACHMENT 3

INTER-WELL PREDICTION LIMITS

Prediction Limit

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant Printed 1/16/2025, 9:28 AM

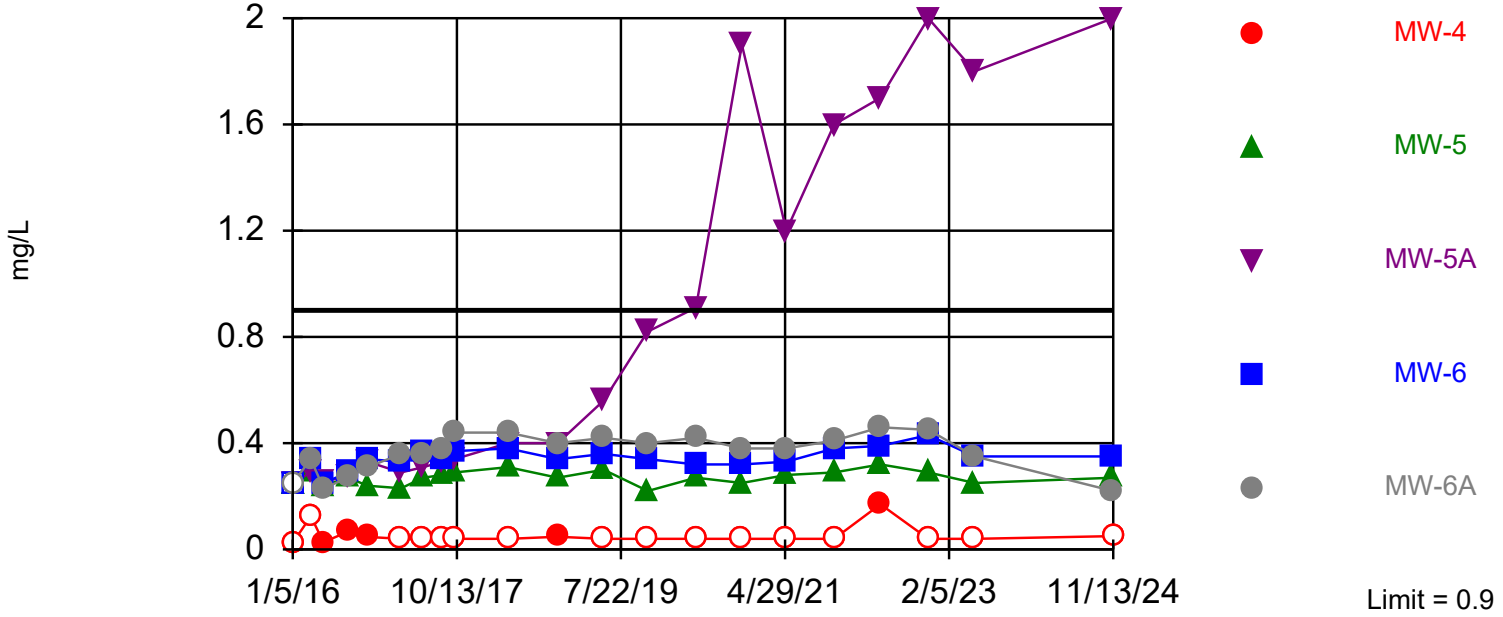
Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Boron (mg/L)	MW-4	0.9	n/a	11/13/2024	0.05ND	No	60	n/a	n/a	21.67	n/a	n/a	0.0005231	NP Inter (normality) 1 of 2
Boron (mg/L)	MW-5	0.9	n/a	11/12/2024	0.27	No	60	n/a	n/a	21.67	n/a	n/a	0.0005231	NP Inter (normality) 1 of 2
Boron (mg/L)	**MW-5A**	**0.9**	**n/a**	**11/12/2024**	**2**	**Yes**	**60**	**n/a**	**n/a**	**21.67**	**n/a**	**n/a**	**0.0005231**	**NP Inter (normality) 1 of 2**
Boron (mg/L)	MW-6	0.9	n/a	11/12/2024	0.35	No	60	n/a	n/a	21.67	n/a	n/a	0.0005231	NP Inter (normality) 1 of 2
Boron (mg/L)	MW-6A	0.9	n/a	11/12/2024	0.22	No	60	n/a	n/a	21.67	n/a	n/a	0.0005231	NP Inter (normality) 1 of 2
Calcium (mg/L)	MW-4	620	n/a	11/13/2024	240	No	60	n/a	n/a	0	n/a	n/a	0.0005231	NP Inter (normality) 1 of 2
Calcium (mg/L)	MW-5	620	n/a	11/12/2024	87	No	60	n/a	n/a	0	n/a	n/a	0.0005231	NP Inter (normality) 1 of 2
Calcium (mg/L)	MW-5A	620	n/a	11/12/2024	450	No	60	n/a	n/a	0	n/a	n/a	0.0005231	NP Inter (normality) 1 of 2
Calcium (mg/L)	MW-6	620	n/a	11/12/2024	280	No	60	n/a	n/a	0	n/a	n/a	0.0005231	NP Inter (normality) 1 of 2
Calcium (mg/L)	MW-6A	620	n/a	11/12/2024	190	No	60	n/a	n/a	0	n/a	n/a	0.0005231	NP Inter (normality) 1 of 2
Chloride (mg/L)	MW-4	180	n/a	11/13/2024	16	No	60	n/a	n/a	0	n/a	n/a	0.0005231	NP Inter (normality) 1 of 2
Chloride (mg/L)	MW-5	180	n/a	11/12/2024	5.9	No	60	n/a	n/a	0	n/a	n/a	0.0005231	NP Inter (normality) 1 of 2
Chloride (mg/L)	MW-5A	180	n/a	11/12/2024	180	No	60	n/a	n/a	0	n/a	n/a	0.0005231	NP Inter (normality) 1 of 2
Chloride (mg/L)	MW-6	180	n/a	11/12/2024	45	No	60	n/a	n/a	0	n/a	n/a	0.0005231	NP Inter (normality) 1 of 2
Chloride (mg/L)	MW-6A	180	n/a	11/12/2024	81	No	60	n/a	n/a	0	n/a	n/a	0.0005231	NP Inter (normality) 1 of 2
Fluoride (mg/L)	MW-4	0.4397	n/a	11/13/2024	0.097J	No	60	-1.58	0.4116	15	None	ln(x)	0.001504	Param Inter 1 of 2
Fluoride (mg/L)	MW-5	0.4397	n/a	11/12/2024	0.29	No	60	-1.58	0.4116	15	None	ln(x)	0.001504	Param Inter 1 of 2
Fluoride (mg/L)	MW-5A	0.4397	n/a	11/12/2024	0.22	No	60	-1.58	0.4116	15	None	ln(x)	0.001504	Param Inter 1 of 2
Fluoride (mg/L)	MW-6	0.4397	n/a	11/12/2024	0.22	No	60	-1.58	0.4116	15	None	ln(x)	0.001504	Param Inter 1 of 2
Fluoride (mg/L)	MW-6A	0.4397	n/a	11/12/2024	0.15	No	60	-1.58	0.4116	15	None	ln(x)	0.001504	Param Inter 1 of 2
pH (SU)	MW-4	6.982	5.222	11/13/2024	6.79	No	60	241.4	53.74	0	None	x^3	0.000752	Param Inter 1 of 2
pH (SU)	**MW-5**	**6.982**	**5.222**	**11/12/2024**	**7.25**	**Yes**	**60**	**241.4**	**53.74**	**0**	**None**	**x^3**	**0.000752**	**Param Inter 1 of 2**
pH (SU)	MW-5A	6.982	5.222	11/12/2024	6.71	No	60	241.4	53.74	0	None	x^3	0.000752	Param Inter 1 of 2
pH (SU)	**MW-6**	**6.982**	**5.222**	**11/12/2024**	**7.01**	**Yes**	**60**	**241.4**	**53.74**	**0**	**None**	**x^3**	**0.000752**	**Param Inter 1 of 2**
pH (SU)	MW-6A	6.982	5.222	11/12/2024	6.16	No	60	241.4	53.74	0	None	x^3	0.000752	Param Inter 1 of 2
Sulfate (mg/L)	MW-4	2400	n/a	11/13/2024	500	No	60	n/a	n/a	1.667	n/a	n/a	0.0005231	NP Inter (normality) 1 of 2
Sulfate (mg/L)	MW-5	2400	n/a	11/12/2024	150	No	60	n/a	n/a	1.667	n/a	n/a	0.0005231	NP Inter (normality) 1 of 2
Sulfate (mg/L)	MW-5A	2400	n/a	11/12/2024	1900	No	60	n/a	n/a	1.667	n/a	n/a	0.0005231	NP Inter (normality) 1 of 2
Sulfate (mg/L)	MW-6	2400	n/a	11/12/2024	1100	No	60	n/a	n/a	1.667	n/a	n/a	0.0005231	NP Inter (normality) 1 of 2
Sulfate (mg/L)	MW-6A	2400	n/a	11/12/2024	1000	No	60	n/a	n/a	1.667	n/a	n/a	0.0005231	NP Inter (normality) 1 of 2
Total Dissolved Solids (mg/L)	MW-4	3100	n/a	11/13/2024	1300	No	60	n/a	n/a	0	n/a	n/a	0.0005231	NP Inter (normality) 1 of 2
Total Dissolved Solids (mg/L)	MW-5	3100	n/a	11/12/2024	570	No	60	n/a	n/a	0	n/a	n/a	0.0005231	NP Inter (normality) 1 of 2
Total Dissolved Solids (mg/L)	**MW-5A**	**3100**	**n/a**	**11/12/2024**	**3200**	**Yes**	**60**	**n/a**	**n/a**	**0**	**n/a**	**n/a**	**0.0005231**	**NP Inter (normality) 1 of 2**
Total Dissolved Solids (mg/L)	MW-6	3100	n/a	11/12/2024	1800	No	60	n/a	n/a	0	n/a	n/a	0.0005231	NP Inter (normality) 1 of 2
Total Dissolved Solids (mg/L)	MW-6A	3100	n/a	11/12/2024	1500	No	60	n/a	n/a	0	n/a	n/a	0.0005231	NP Inter (normality) 1 of 2

Hollow symbols indicate censored values.

Exceeds Limit: MW-5A

Boron

Interwell Non-parametric

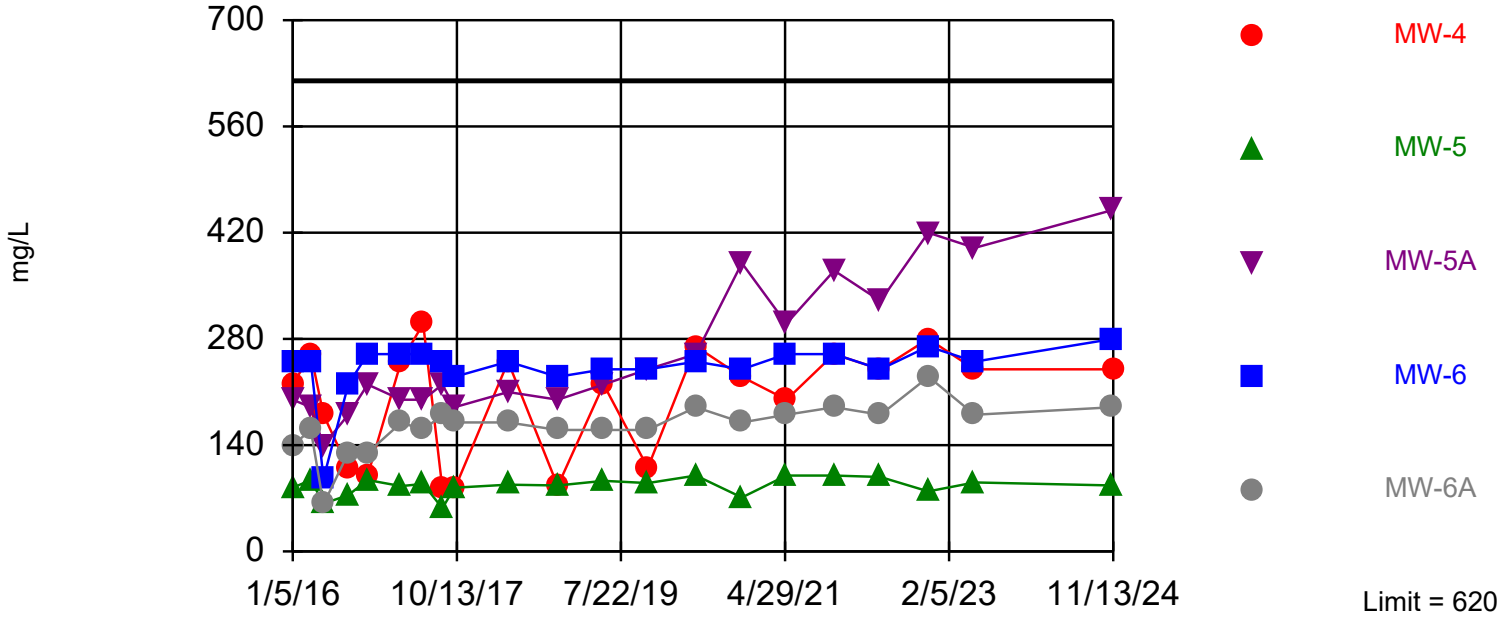


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 60 background values. 21.67% NDs. Annual per-constituent alpha = 0.005219. Individual comparison alpha = 0.0005231 (1 of 2). Comparing 5 points to limit. Seasonality was not detected with 95% confidence.

Within Limit

Calcium

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 60 background values. Annual per-constituent alpha = 0.005219. Individual comparison alpha = 0.0005231 (1 of 2). Comparing 5 points to limit. Seasonality was not detected with 95% confidence.

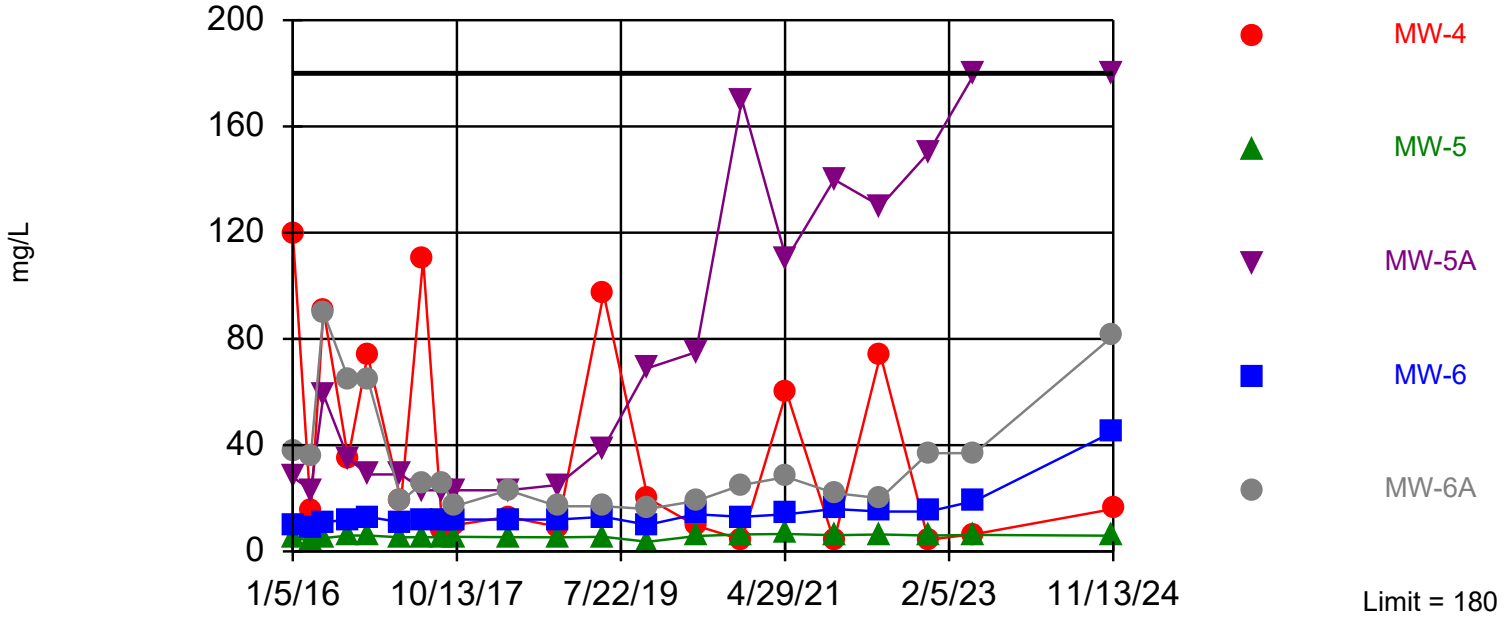
Prediction Limit Analysis Run 1/16/2025 9:23 AM View: Inter-Well PLs

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

Within Limit

Chloride

Interwell Non-parametric



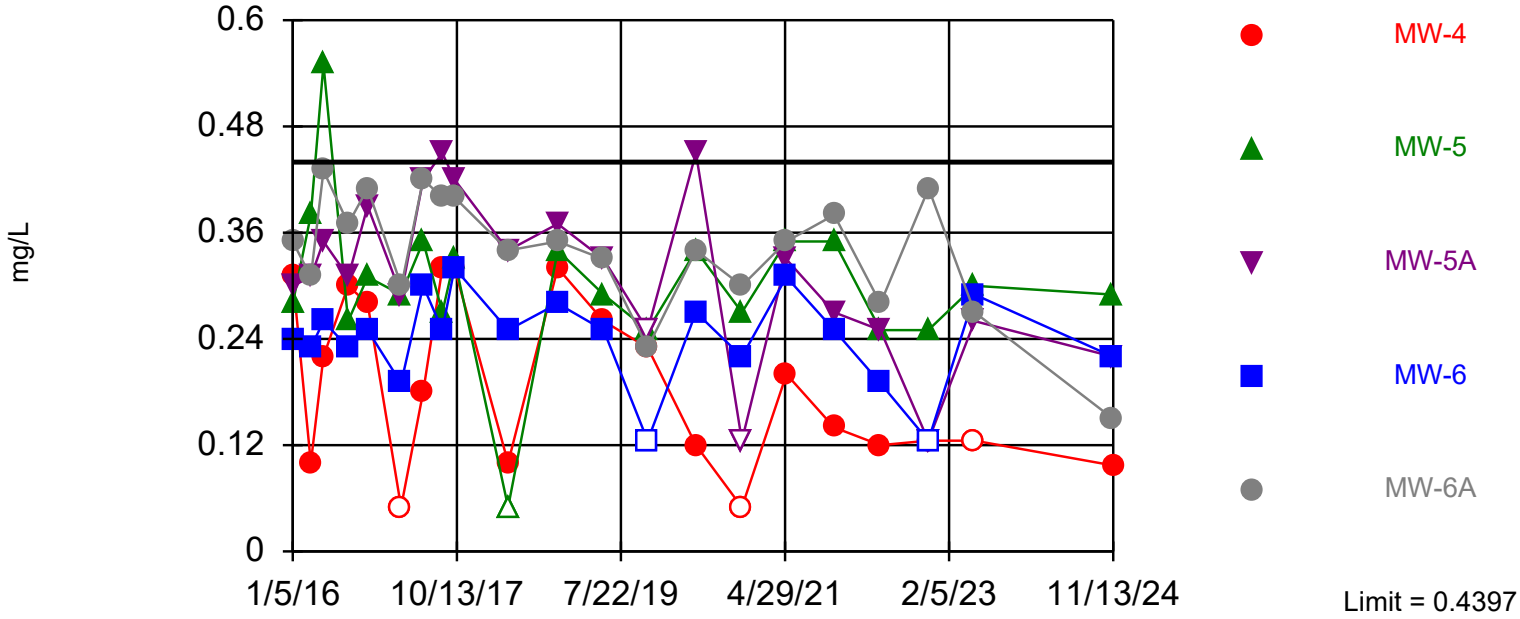
Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 60 background values. Annual per-constituent alpha = 0.005219. Individual comparison alpha = 0.0005231 (1 of 2). Comparing 5 points to limit. Seasonality was not detected with 95% confidence.

Hollow symbols indicate censored values.

Within Limit

Fluoride

Interwell Parametric



Background Data Summary (based on natural log transformation): Mean=-1.58, Std. Dev.=0.4116, n=60, 15% NDs. Seasonality was not detected with 95% confidence. Normality test: Shapiro Francia @alpha = 0.01, calculated = 0.9605, critical = 0.945. Kappa = 1.842 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.001504. Comparing 5 points to limit.

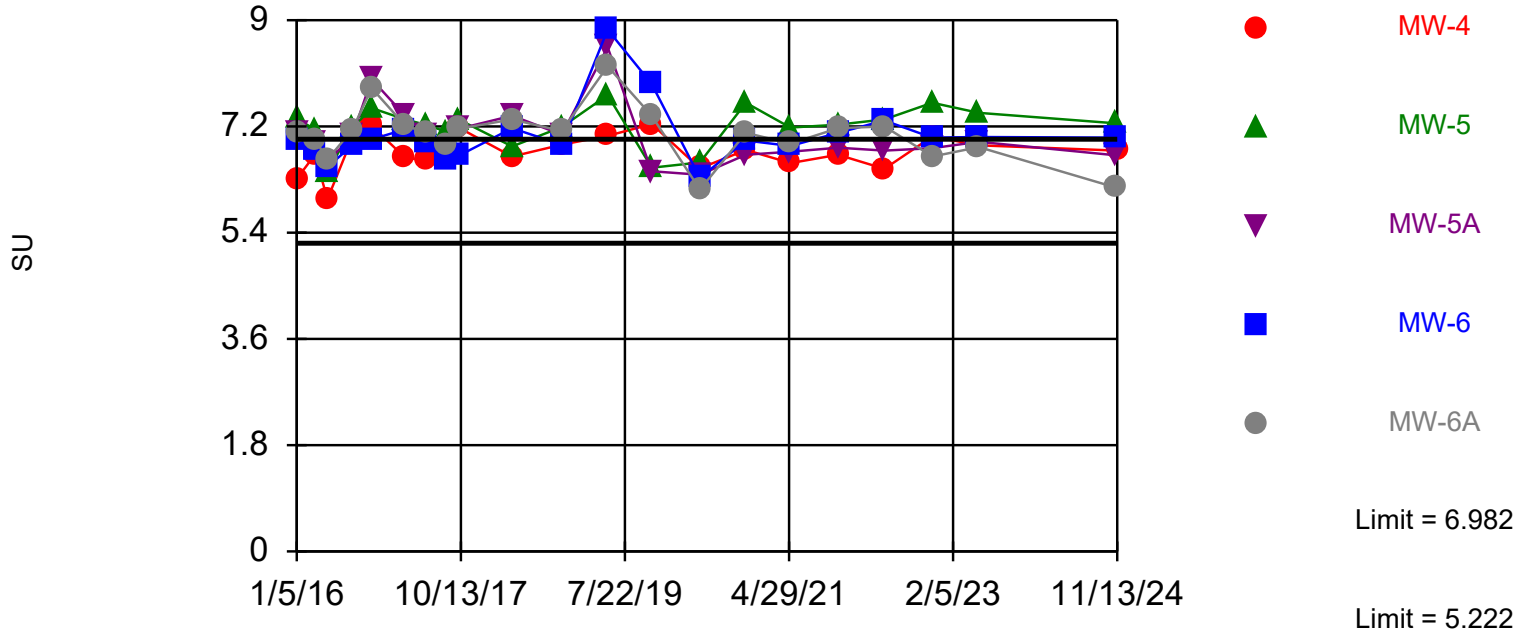
Prediction Limit Analysis Run 1/16/2025 9:24 AM View: Inter-Well PLs

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant

Exceeds Limits: MW-5, MW-6

pH

Interwell Parametric

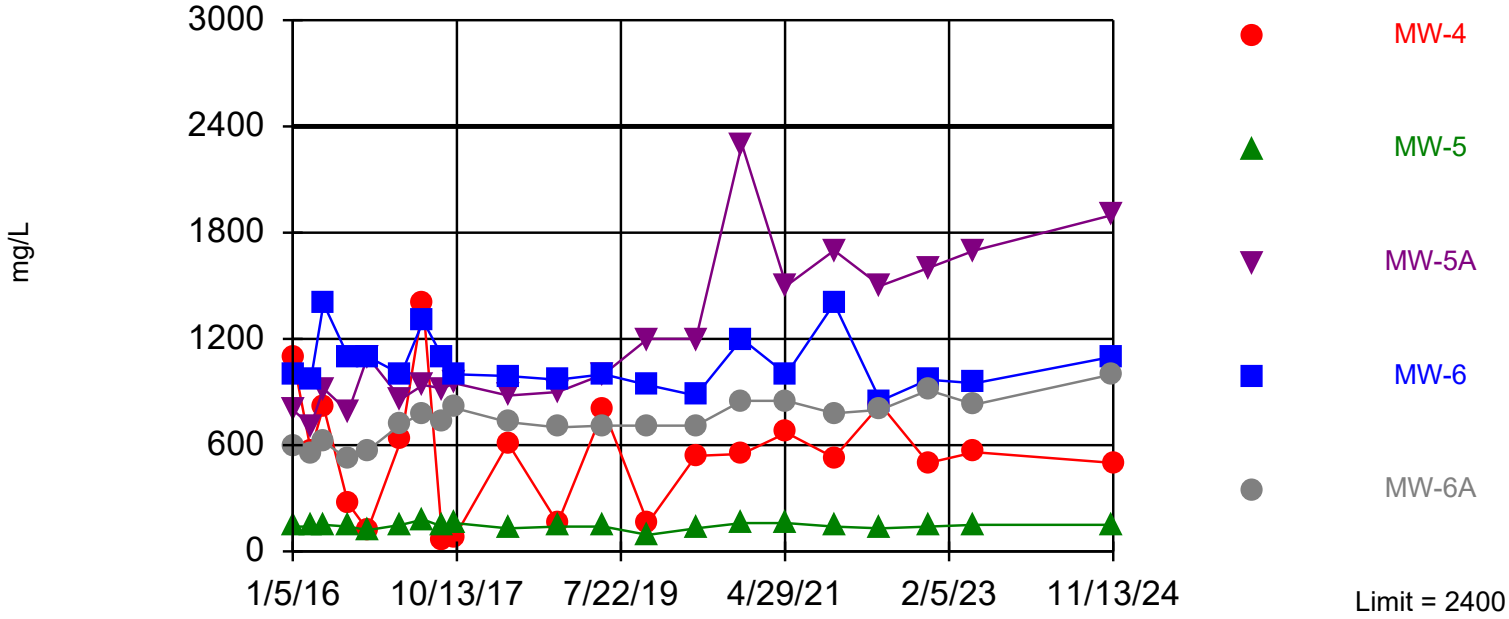


Background Data Summary (based on cube transformation): Mean=241.4, Std. Dev.=53.74, n=60. Seasonality was not detected with 95% confidence. Normality test: Shapiro Francia @alpha = 0.01, calculated = 0.9466, critical = 0.945. Kappa = 1.842 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.000752. Comparing 5 points to limit.

Within Limit

Sulfate

Interwell Non-parametric

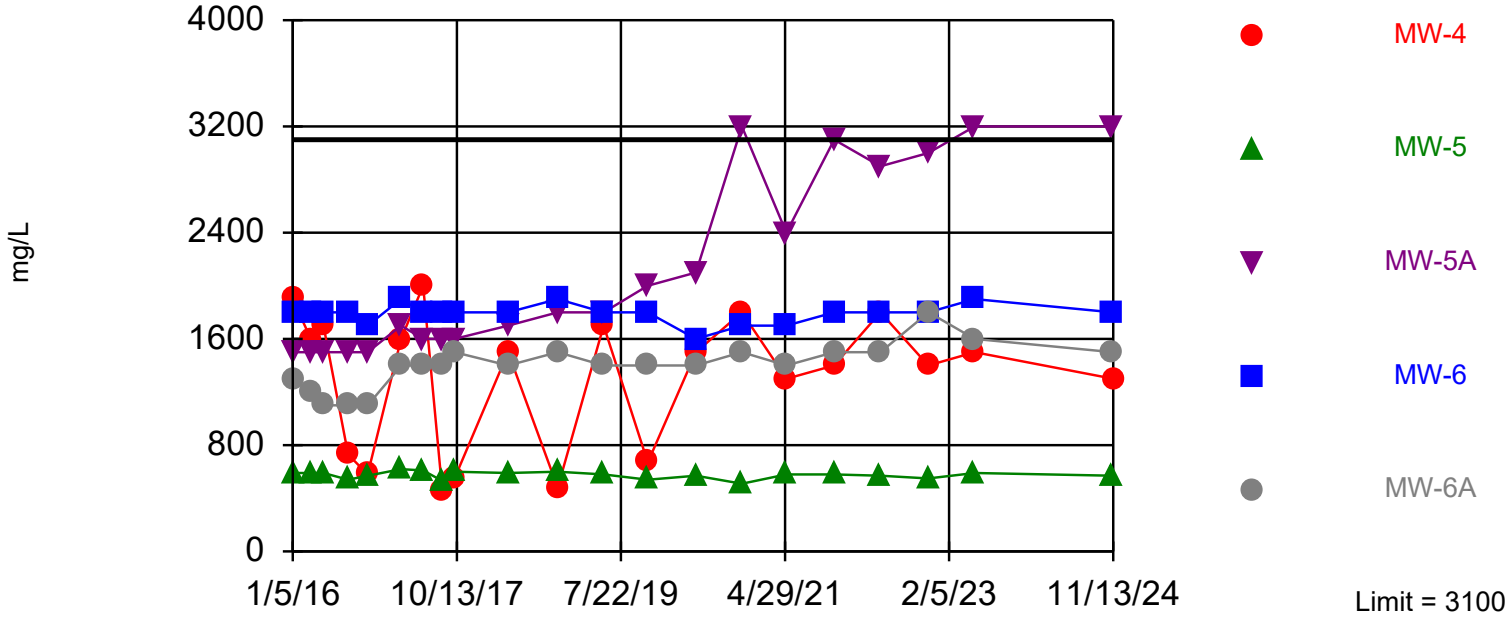


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 60 background values. 1.667% NDs. Annual per-constituent alpha = 0.005219. Individual comparison alpha = 0.0005231 (1 of 2). Comparing 5 points to limit. Seasonality was not detected with 95% confidence.

Exceeds Limit: MW-5A

Total Dissolved Solids

Interwell Non-parametric

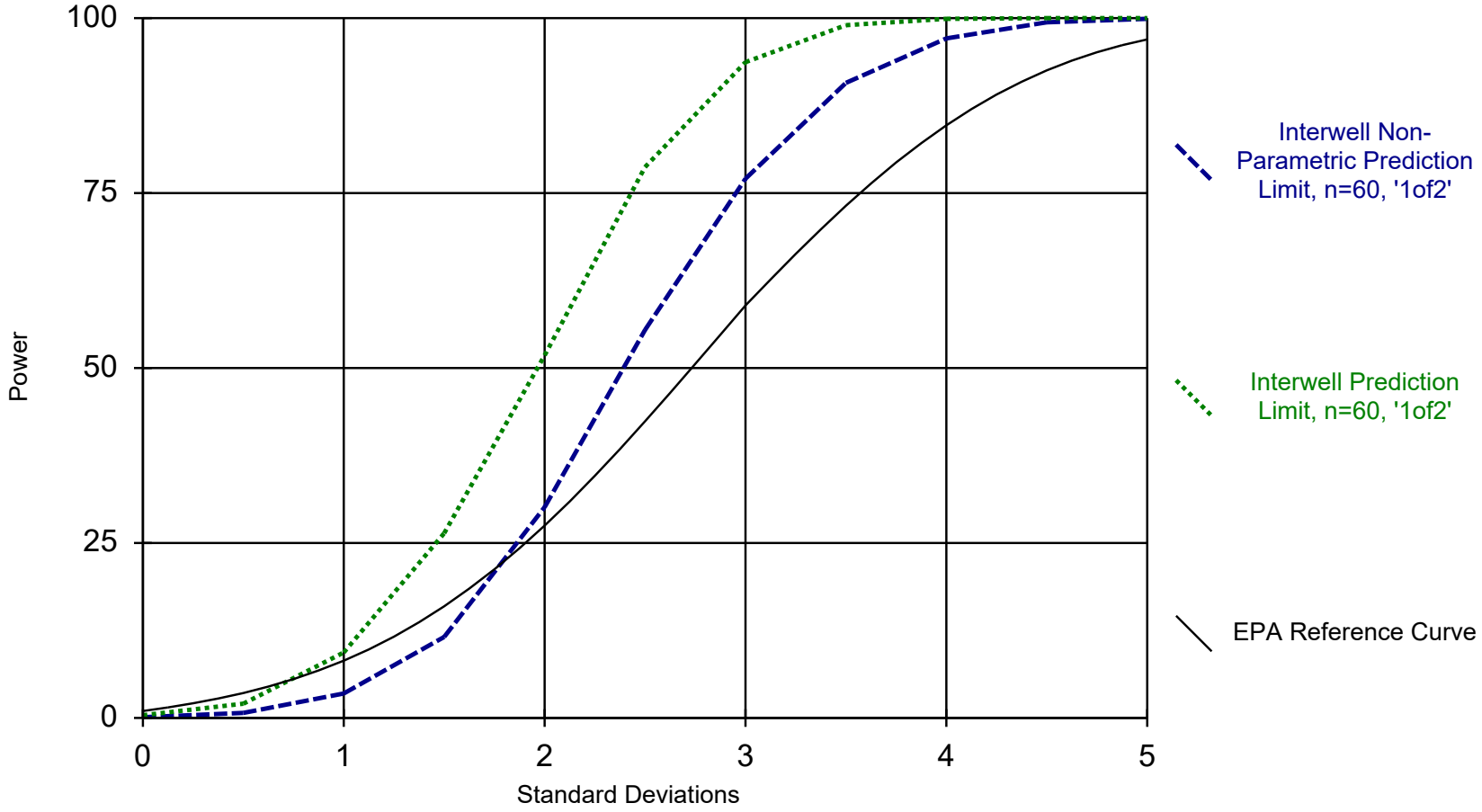


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 60 background values. Annual per-constituent alpha = 0.005219. Individual comparison alpha = 0.0005231 (1 of 2). Comparing 5 points to limit. Seasonality was not detected with 95% confidence.

ATTACHMENT 4

STATISTICAL POWER CURVES

Power Curve



Analysis Run 1/16/2025 1:37 PM View: Inter-Well PLs

Asbury Power Plant CCR facility Client: The Empire District Data: Asbury Power Plant