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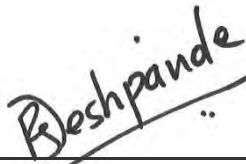
FORMER HUTSONVILLE POWER STATION - ASH POND D

**2023 ANNUAL REPORT
FORMER HUTSONVILLE POWER STATION - ASH POND D**

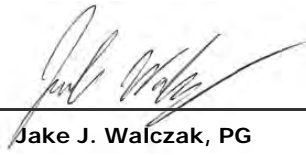
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CONTENTS

1.	Introduction	4
1.1	Background	4
1.2	Groundwater Quality Overview – 2013 to 2023	5
1.2.1	Summary of Cover System Construction and Maintenance	5
1.2.2	Summary of 2013 to 2023 Groundwater Quality Data Review	5
1.2.3	Conclusion	6
2.	Groundwater Monitoring Plan Compliance	7
2.1	Applicable Groundwater Quality Standards	7
2.1.1	On-Site Groundwater Standards	7
2.1.2	Off-Site Groundwater Standards	7
2.2	Demonstration of Compliance	7
2.2.1	On-Site Groundwater Compliance	7
2.2.2	Off-Site Groundwater Compliance	8
2.2.3	Compliance Determination	8
3.	Data Analysis	10
3.1	Groundwater Flow	10
3.2	Review of Analytical Data (2022-2023)	10
3.3	Statistical Analyses	11
3.3.1	Outlier Analysis	11
3.3.2	Sen’s Estimate of Slope	11
3.3.3	Mann-Kendall Trend Analysis	12
3.4	Site Inspection	12
4.	Evaluation of Compliance	13
5.	Conclusions	14
6.	References	15

TABLES

Table 1-1	Groundwater Monitoring Program Schedule
Table 1-2	Groundwater Monitoring System Wells
Table 1-3	Groundwater Monitoring Program Parameters
Table 3-1	Trend Analysis Results
Table 3-2	Summary of Trend Analyses

FIGURES

Figure 1-1	Site Location Map
Figure 1-2	Monitoring Well Location Map
Figure 1-3	Boron concentrations over time since closure completion (2013) at compliance wells MW-6 and MW-8
Figure 1-4	Boron concentrations over time since closure completion (2013) at compliance wells MW-7 and MW-7D
Figure 1-5	Boron concentrations over time since closure completion (2013) at compliance wells MW-11R
Figure 1-6	Boron concentrations over time since closure completion (2013) at compliance wells MW-121 and MW-14
Figure 1-7	Boron concentrations over time since closure completion (2013) at background wells MW-23S and MW-23D

Figure 1-8	Boron concentrations over time since closure completion (2013) at compliance wells MW-115S and MW-115D
Figure 1-9	Sulfate concentrations over time since closure completion (2013) at compliance wells MW-6 and MW-8
Figure 1-10	Sulfate concentrations over time since closure completion (2013) at compliance wells MW-7 and MW-7D
Figure 1-11	Sulfate concentrations over time since closure completion (2013) at compliance well MW-11R
Figure 1-12	Sulfate concentrations over time since closure completion (2013) at compliance wells MW-121 and MW-14
Figure 1-13	Sulfate concentrations over time since closure completion (2013) at background wells MW-23S and MW-23D
Figure 1-14	Sulfate concentrations over time since closure completion (2013) at compliance wells MW-115S and MW-115D
Figure 3-1	Q1 Upper Migration Zone Groundwater Elevation Contour Map – February 20, 2023
Figure 3-2	Q2 Upper Migration Zone Groundwater Elevation Contour Map – June 5, 2023
Figure 3-3	Q3 Upper Migration Zone Groundwater Elevation Contour Map – August 28, 2023
Figure 3-4	Q4 Upper Migration Zone Groundwater Elevation Contour Map – October 23, 2023
Figure 3-5	Groundwater Elevations Near Groundwater Collection Trench
Figure 3-6	Box-whisker plot showing distribution of boron concentration by monitoring well for data collected in 2022 and 2023
Figure 3-7	Boron concentrations during the reporting period (2022 – 2023) at all background and compliance wells
Figure 3-8	Box-whisker plot showing distribution of sulfate concentration by monitoring well for data collected in 2022 and 2023
Figure 3-9	Sulfate concentrations during the reporting period (2022 – 2023) at all background and compliance wells
Figure 3-10	Box-whisker plot showing distribution of manganese concentration by monitoring well for data collected in 2022 and 2023
Figure 3-11	Manganese concentrations during the reporting period (2022 – 2023) at all background and compliance wells
Figure 3-12	Box-whisker plot showing distribution of total dissolved solids concentration by monitoring well for data collected in 2022 to 2023
Figure 3-13	Total dissolved solids concentrations during the reporting period (2022 – 2023) at all background and compliance wells

APPENDICES

Appendix A	Groundwater Monitoring Results 2022-2023
Appendix B	Site Inspection Reports
Appendix C	Statistical Output (on CD)
C1	Test Descriptions
C2	Outlier Test
C3	Sen Slope and Mann Kendall Test Results – Short Term
C4	Sen Slope and Mann Kendall Test Results – Long Term

ACRONYMS AND ABBREVIATIONS

Ameren	AmerenEnergy Medina Valley Cogen, LLC
CCW	Coal Combustion Waste
Collection Trench	Groundwater Collection System
EPA	Environmental Protection Agency
GMZ	Groundwater Management Zone
Hanson	Hanson Professional Services, Inc.
HDPE	High Density Polyethylene
Hutsonville	Former Hutsonville Power Station
IAC	Illinois Administrative Code
IEPA	Illinois Environmental Protection Agency
ILCS	Illinois Compiled Statutes
NRT	Natural Resource Technology, Inc.
TDS	Total Dissolved Solids

1. INTRODUCTION

1.1 Background

This report has been prepared for AmerenEnergy Medina Valley Cogen, LLC (Ameren) to summarize 2023 groundwater monitoring results for closed Ash Pond D at the former Hutsonville Power Station (Hutsonville). Ash Pond D is located near the southeast portion of the former power station (**Figure 1-1**) and received coal combustion waste (CCW) between 1968 and 2000.

Ameren completed closure activities for Ash Pond D in January 2013 in accordance with the site-specific closure requirements of Part 840 of Title 35 of the Illinois Administrative Code (35 IAC 840). Closure activities for Ash Pond D included placement of a 40-mil high density polyethylene (HDPE) cap covered with a three-foot thick vegetative soil layer, construction of surface water control structures, and construction of a groundwater collection system (i.e., Collection Trench). Operation of the Collection Trench was not initiated until April 2015 when discharge authorization was received under Hutsonville's renewed National Pollutant Discharge Elimination System (NPDES) permit (IL0004120) with an effective date of March 1, 2015 and renewed June 1, 2020.

Hutsonville Ash Pond D post-closure care requirements were established in the Post-Closure Care Plan (Hanson Professional Services, Inc. [Hanson], Natural Resource Technology, Inc. [NRT], 2011a) and the Groundwater Monitoring Plan (Hanson, NRT, 2011b), both dated July 26, 2011. The Groundwater Monitoring Plan was prepared in accordance with 35 IAC 840.114 and 35 IAC 840.116 and outlines groundwater monitoring and sampling procedures, establishes the parameters and methods to be used for analyzing the groundwater samples, and describes evaluation methods to assess post-closure groundwater quality and trends to demonstrate compliance with the applicable groundwater standards. The Groundwater Monitoring Program Schedule is provided in **Table 1-1**. Monitoring well locations, installation dates, construction information, and the groundwater zone they monitor are provided in **Table 1-2**. Field and laboratory parameters for evaluating groundwater quality are shown in **Table 1-3**.

The groundwater monitoring system for Ash Pond D (**Figure 1-2**), as defined by the Groundwater Monitoring Plan, originally consisted of two background monitoring wells, MW-10 and MW-10D, and nine down-gradient compliance monitoring wells¹, MW-6, MW-7, MW-7D, MW-8, MW-11R, MW-14, MW-115S, MW-115D, and MW-121. Background wells MW-10 and MW-10D were destroyed due to construction unrelated to Ameren operations after the first quarter, 2016 monitoring period. No trace of the former background wells was found using a metal detector, probes, or digging. As a result, these wells were replaced with new background monitoring wells, MW-23S and MW-23D, in November 2017. In addition, several other monitoring wells and piezometers located at Hutsonville are measured for groundwater level so that groundwater elevation contour maps can be created for the entire site.

Closure activities for Ash Ponds A, B, C, and the Bottom Ash Sluice Pond were subsequently completed in June 2016 in accordance with the Closure Plan (Hanson, NRT, 2014a), and 35 IAC 840 to the extent feasible. Ash Ponds B, C, and the Bottom Ash Sluice Pond were clean-closed by relocating accumulated ash to Ash Pond A. Closure activities for Ash Pond A included grading

¹ Note that in the 2017 Annual Report, Section 1.1, well MW-7D was mistakenly left off the list of compliance wells.

according to the Closure Plan and capping with a low permeability (40-mil HDPE) membrane covered with protective soil.

Post-closure groundwater monitoring and annual reporting for Ash Pond D according to the Groundwater Monitoring Plan and the Post-Closure Care Plan began in 2013. This tenth annual report includes the following elements:

- A summary of groundwater monitoring data collected in 2022 and 2023 and used for annual trend and statistical analysis; data tables are included in **Appendix A**.
- Quarterly Site Inspection Forms, including observations and descriptions of any maintenance activities performed on the pond cap, embankment, and groundwater collection trench and discharge system (**Appendix B**).
- Methodology for the outlier and trend analyses, per Section 5.2 of the Groundwater Monitoring Plan, along with results for these analyses including an assessment of any statistically significant increasing trends (**Appendix C**).

1.2 Groundwater Quality Overview – 2013 to 2023

1.2.1 Summary of Cover System Construction and Maintenance

The closure activities for Ash Pond D included placement of a cover system, which included a 40-mil HDPE geomembrane covered with a three-foot thick vegetative soil layer, construction of surface water control structures, and construction of the Collection Trench.

Inspections of the cover system are performed on a quarterly schedule. Routine maintenance activities are performed at Ash Pond D as needed and as soon as practicable after issues are identified. These activities include recontouring the ground surface, repairing drainage channels, repairing and replacing channel lining material, revegetating areas, and removing woody vegetation. Maintenance activities are described in more detail in the Post-Closure Plan.

1.2.2 Summary of 2013 to 2023 Groundwater Quality Data Review

Groundwater quality data collected since Ameren completed closure activities for Ash Pond D in 2013 have been reviewed to assess the overall condition of the groundwater and the performance of the cover system. This review has been performed independently from the compliance evaluations required by the Groundwater Monitoring Plan, which are focused on specific compliance criteria and proposed mitigation actions. This review is intended as a holistic view of groundwater quality over time since closure.

Dissolved Boron was identified as the primary indicator parameter for coal ash leachate impacts to groundwater in the Pond D Closure Alternatives Report (NRT, 2009). As such, dissolved boron was selected for this groundwater quality data review. Dissolved Boron concentrations observed since 2013 are presented in **Figures 1-3 through 1-8**. On the figures, the lines through the concentration data represent the best fit linear regressions for boron concentrations in each well. Best fit linear regression lines are included in the figures to provide a convenient means of evaluating general concentration patterns since closure. It should be noted that the regression lines are not equivalent to the statistical trends discussed in the groundwater compliance section (**Section 3.2**) of this report. Dissolved boron concentrations in most compliance monitoring wells have been stable or decreasing since 2013 and are currently below the 35 IAC 620.410 Class I Groundwater Standard, with the exceptions of MW-8 and MW-11R, which have dissolved boron

concentrations above the Class I standard. As illustrated in **Figure 1-5**, periodic high dissolved boron concentrations were recently observed at MW-11R (2019-2023). This monitoring well is located on the south side of the Collection Trench from Pond D. The fluctuations in dissolved boron concentrations at this well may be due to the influence of the Collection Trench and an irrigation pumping well located adjacent to the site to the south. Increasing trends in dissolved boron concentrations at MW-11R are anticipated due to the influence of the Collection Trench and are not an indication of non-compliance with the Groundwater Monitoring Plan. Boron concentration at MW-11R will continue to be monitored and evaluated in 2024.

Dissolved sulfate was also identified as an indicator parameter for coal ash in the Pond D Closure Alternatives Report; however, dissolved sulfate can have other anthropogenic sources for elevated concentrations in groundwater, and dissolved sulfate concentrations can decrease in groundwater under strongly reducing conditions. These caveats make dissolved sulfate a less reliable indicator for coal ash impacts than dissolved boron. Dissolved sulfate concentrations observed since 2013 are presented in **Figures 1-9 through 1-14** along with best fit linear regression lines indicating general concentration patterns since closure. Similar to dissolved boron, dissolved sulfate concentrations have been stable or decreasing since the closure completion. As illustrated in **Figure 1-11**, dissolved sulfate concentrations at MW-11R were recently observed (2019-2023) to fluctuate in a similar manner as dissolved boron concentrations. Dissolved sulfate concentrations at MW-11R will continue to be monitored and evaluated in 2024.

In addition, since completion of closure in 2013, several decreasing trends for various analytical parameters were identified and are discussed in **Section 3.3**, summarized on **Tables 3-1 and 3-2** and detailed in **Appendix C4**.

1.2.3 Conclusion

The stable or decreasing dissolved boron and sulfate concentrations in the majority of compliance monitoring wells across the site are a strong indication that the cover system is functioning to improve overall groundwater quality beneath the pond.

2. GROUNDWATER MONITORING PLAN COMPLIANCE

2.1 Applicable Groundwater Quality Standards

2.1.1 On-Site Groundwater Standards

As described in Section 5.1.1 of the Groundwater Monitoring Plan and pursuant to 35 IAC 840.16(a):

- Prior to the completion of the post-closure care period, the on-site applicable groundwater quality standards at Ash Pond D are the greater of either the actual groundwater monitoring result, or the Class I Potable Resource Groundwater standard set forth in 35 IAC 620.410.
- After completion of the post-closure care period, if the on-site concentrations of contaminants from Ash Pond D, as determined by groundwater monitoring, exceed the numeric standards for Class I Potable Resource Groundwater set forth in 35 IAC 620.410, the observed concentrations are the applicable groundwater standards at Ash Pond D if the following criteria are addressed to the satisfaction of the Illinois Environmental Protection Agency (IEPA):
 - To the extent practicable, the exceedance has been minimized and beneficial use, as appropriate for the class of groundwater, has been returned on-site.
 - Any threat to public health or the environment on-site has been minimized.
 - An institutional control prohibiting potable uses of groundwater is placed on Ash Pond D in accordance with the Uniform Environmental Covenants Act (765 Illinois Compiled Statutes (ILCS) 122) or an alternative instrument authorized for environmental uses under Illinois law and approved by the IEPA. Existing potable uses of groundwater may be preserved as long as such uses remain fit for human consumption in accordance with accepted water supply principles.

2.1.2 Off-Site Groundwater Standards

As described in Section 5.1.2 of the Groundwater Monitoring Plan and pursuant to 35 IAC 840.116(b):

- Off-site groundwater quality standards are the 35 IAC 620.410 Class I Potable Resource standards for the upper zone (defined during rulemaking as the fine-grained sediments directly beneath Ash Pond D) and the 35 IAC 620 Subpart C non-degradation standards for the lower zone, unless a groundwater management zone (GMZ) has been established as provided in 35 IAC 620.250. Currently, no GMZ is established for Pond D. However, a GMZ is established for Ash Pond A (**Figure 1-2**). In conjunction with Ameren's request for approval of the Closure Plan for Ash Pond A, Ameren submitted a request to establish a GMZ at Ash Pond A pursuant to 35 IAC 620.250(a)(2): Ash Ponds Closure, Groundwater Management Zone Application, dated September 8, 2014 (Hanson, NRT, 2014b), which was approved along with the Closure Plan.

2.2 Demonstration of Compliance

2.2.1 On-Site Groundwater Compliance

As described in Section 5.2.1 of the Groundwater Monitoring Plan:

- Compliance with on-site groundwater quality standards will be achieved when no statistically significant increasing trend that can be attributed to Ash Pond D is detected in the

concentrations of all constituents monitored at the compliance (down-gradient) boundary of the site for four consecutive years after changing to an annual monitoring frequency (**Table 1-1**).

2.2.2 Off-Site Groundwater Compliance

As described in Section 5.2.1 of the Groundwater Monitoring Plan:

- For off-site groundwater, the following compliance criteria must be met:
 - Statistically significant decreasing trends in concentrations for all constituents monitored in accordance with 35 IAC 840.114 in the upper zone of the aquifer at the compliance boundary are detected for a period of four consecutive years after changing to annual monitoring (**Table 1-1**).
 - No statistically significant increasing trend that can be attributed to Ash Pond D is detected in the concentrations of all constituents monitored in accordance with 35 IAC 840.114 in the lower zone of the aquifer at the compliance boundary for a period of four consecutive years after changing to an annual monitoring frequency.
 - All concentrations of constituents monitored in accordance with 35 IAC 840.114 are at or below the applicable groundwater quality standard as provided in 35 IAC 840.116(b) at the down-gradient boundaries of Ash Pond D.

2.2.3 Compliance Determination

As described in Section 5.2.3 of the Groundwater Monitoring Plan:

- Compliance is demonstrated by performing an annual trend analysis for each monitoring well located at the down-gradient boundaries of Ash Pond D for all constituents monitored in accordance with 35 IAC 840.114. The analysis shall use Sen's Estimate of Slope and be performed on a minimum of four consecutive samples.
- If a GMZ is established for off-site groundwater in the future, the demonstration of compliance will remain consistent with the approved closure and post-closure care plan.
- If the results of sampling and analysis show a positive slope at any compliance monitoring well located at the down-gradient boundaries of Ash Pond D, a Mann-Kendall test will be performed at 95 percent confidence to determine whether or not the increasing slope represents a statistically significant increasing trend. Ameren will investigate the cause of a statistically significant increasing trend as described below. If the statistically significant increasing trend occurs during post-closure care, the investigation will include more frequent inspection of the surface of the cover system and evaluation of background concentrations.
 - If the investigation attributes a statistically significant increasing trend to a superseding cause, Ameren will notify IEPA in writing, stating the cause of the increasing trend and providing the rationale used in such a determination.
 - If there is no superseding cause for the statistically significant increasing trend and sampling frequency has been reduced pursuant to semi-annual or annual sampling, a quarterly sampling schedule will be reestablished. After four consecutive quarterly samples show no statistically significant increasing trend, the frequency of groundwater monitoring will return to either semi-annual or annual, whichever frequency was utilized prior to the return to quarterly sampling.

- Notifications concerning statistically significant increasing trends and revisions of the sampling frequency will be reported to IEPA in writing within 30 days after making the determinations.
- If a statistically significant increasing trend is observed to continue over a period of two or more consecutive years and there are no superseding causes for the trend, then Ameren will perform the following:
 - A hydrogeologic investigation
 - Additional site investigation, if necessary

Based on the outcome of the investigation above, Ameren may take action to mitigate statistically significant increasing trends. Such actions will be proposed as a modification to the post-closure care plan within 180 days after completion of the investigation activities described above.

3. DATA ANALYSIS

3.1 Groundwater Flow

Groundwater flow for 2023 is represented using groundwater elevation contour maps for each quarterly sampling event (**Figures 3-1 through 3-4**). Groundwater in the upper zone generally flowed from west to east and northeast towards the Wabash River during 2023, which is consistent with past evaluations. The Collection Trench began operation in April 2015, and, following startup, groundwater elevations have exhibited localized flow toward the trench, as exhibited by measured groundwater elevations in MW-11R and MW-6 on **Figure 3-5**. Groundwater elevations in these wells located on the south side of the Collection Trench are generally lower than they were prior to April 2015 and exhibit less fluctuation than the other wells in the monitoring system. In the depictions of groundwater elevation contours, dashed lines have been used to infer the localized drawdown of groundwater levels resulting from trench operation, which is necessary with limited wells situated laterally along the length of the trench.

The horizontal hydraulic gradient in the upper migration zone beneath the northern extent of Ash Pond D was calculated for each quarterly monitoring event along groundwater flow direction arrows illustrated in **Figures 3-1 through Figure 3-4** and ranged from approximately 0.023 to 0.026 feet/feet during 2023. Horizontal hydraulic gradient was not calculated near the southern end of the pond due to the potential influence of the Collection Trench on groundwater flow.

Groundwater flow within the lower alluvial migration zone along the edge of the Wabash River valley was not contoured since all the deep alluvial monitoring wells are within a narrow zone between Ash Pond D and the Wabash River. Groundwater within the lower zone generally flows from southwest to northeast towards the Wabash River.

3.2 Review of Analytical Data (2022-2023)

Groundwater samples from the most recent eight monitoring events were collected on March 21, 2022; June 20, 2022; August 8, 2022; October 24, 2022; February 20, 2023; June 5, 2023; August 28, 2023; and October 23, 2023. All field and laboratory analytical results are tabulated in **Appendix A**. Sampling anomalies, such as wells that were dry, had water levels too low for sampling, or were not sampled during a sampling event for other reasons, are noted below:

- MW-6: Not sampled in the fourth quarter sampling event of 2022 as well as third and fourth quarter of 2023 due to insufficient water level.

Results of groundwater monitoring for constituents that exceeded the 35 IAC 620.410 Class I Groundwater Standard during the 1999 hydrogeologic assessment (NRT, 2009) (dissolved boron, dissolved sulfate, dissolved manganese, and TDS) are discussed below:

- Dissolved boron has been identified as the primary indicator constituent for coal ash impacts to groundwater at Ash Pond D (see **Section 1.2.2**). In the 2022-2023 monitoring period, dissolved boron concentrations ranged from 0.05 to 20 milligrams per liter (mg/L) in upper zone compliance monitoring wells. In lower zone compliance monitoring wells, dissolved boron concentrations ranged from 0.05 to 1.2 mg/L (**Figures 3-6 and 3-7**). As discussed in **Sections 1.2.2 and 1.2.3**, dissolved boron concentrations have been stable or decreasing in most Ash Pond D compliance monitoring wells since closure. As illustrated in **Figure 3-7**,

fluctuations of dissolved boron concentrations above the 35 IAC 620.410 Class I Groundwater Standard were observed at MW-11R. During the current monitoring period (2022-2023), dissolved boron concentrations continue to be stable over time at compliance monitoring wells, with the exception of MW-11R, which is located on the south side of the Collection Trench opposite to Ash Pond D. The fluctuations in dissolved boron concentrations at this well may be due to the influence of the Collection Trench and an irrigation pumping well located adjacent to the site to the south. The stable dissolved boron concentration trends in the majority of the wells indicate the cover system is functioning to improve overall groundwater quality beneath the ponds and no further action is required at this time. Dissolved boron concentrations at MW-11R will continue to be monitored and evaluated in 2024.

- Dissolved sulfate has also been identified as an indicator for coal ash impacts to groundwater (see **Section 1.2.2**). In the 2022-2023 monitoring period, dissolved sulfate concentrations ranged from 7.5 to 1,400 mg/L in upper zone compliance monitoring wells. In lower zone compliance monitoring wells, dissolved sulfate concentrations ranged from 12 to 190 mg/L (**Figures 3-8 and 3-9**). Dissolved sulfate concentrations were highest at MW-11R in 2022 and 2023, where dissolved boron concentrations were also highest. As illustrated in **Figure 3-9**, fluctuations of dissolved sulfate concentrations above the 35 IAC 620.410 Class I Groundwater Standard were observed at MW-11R. The fluctuations in dissolved sulfate concentrations at this well may be due to the influence of the Collection Trench and an irrigation pumping well located adjacent to the site to the south. Overall, during this reporting period (2022-2023), dissolved sulfate distribution was similar to dissolved boron distribution at Ash Pond D. Dissolved sulfate concentrations at MW-11R will continue to be monitored and evaluated in 2024.
- Box-whisker plots and timeseries plots illustrating concentrations for the most recent eight monitoring events (2022-2023), were developed for additional parameters – dissolved manganese and TDS (**Figures 3-10 through 3-12**). Similar to the identified indicator parameters, these parameters showed generally stable trends during this reporting period (2022-2023).

3.3 Statistical Analyses

Analytical data were evaluated to identify short-term (compliance) data trends in the 2022-2023 dataset. Trends were evaluated according to the procedure outlined in the Groundwater Monitoring Plan.

3.3.1 Outlier Analysis

The Grubbs outlier test provides statistical evidence of potential outliers by identifying high or low observations that differ significantly from the other data. The test methodology and results are listed in **Appendices C1 and C2**, respectively. Outliers identified during the compliance period (2022-2023) by the Grubbs outlier test based on the date range of 1984-2023 were not eliminated from further statistical analysis due the lack of documentation indicating that they are not representative of actual field conditions. In addition, these identified outliers did not have any influence on the short-term compliance trends.

3.3.2 Sen's Estimate of Slope

Sen's estimate of slope is a non-parametric estimator of trend. It is the median of all slopes between all possible unique pairs of individual data points in the time period being analyzed. The slopes represent the rate of change of the measured parameter, with the y-axis being the

parameter value and the x-axis being calendar time. The method is robust, and fairly insensitive to the presence of a small fraction of outliers and non-detect data values. The test methodology and results are listed in **Appendices C1 and C3**, respectively.

Data collected in 2022-2023 show 20 cases with positive slopes, 24 cases with negative slopes, and 220 cases with no slope (**Table 3-1**).

3.3.3 Mann-Kendall Trend Analysis

The 20 cases of positive Sen's slopes referenced above were evaluated using the Mann-Kendall test to determine if the positive slopes represent statistically significant increasing trends. The Mann-Kendall test is a non-parametric, one-tailed test to determine whether a dataset has a statistically significant trend (increasing or decreasing). The test methodology and results are listed in **Appendices C1 and C3**, respectively. Increasing short-term (compliance) trends are identified in **Tables 3-1 and 3-2**.

The Mann-Kendall test detected two cases of statistically significant increasing trend in the 2022-2023 dataset. These cases occurred for dissolved chloride at MW-14 and dissolved sulfate at MW-121. During this reporting period, dissolved chloride concentrations at MW-14 and dissolved sulfate concentrations at MW-121 were below their respective 35 IAC 620.410 Class I Groundwater Standards.

3.4 Site Inspection

The Post-Closure Maintenance Program requires quarterly inspections for the first five years after closure. After five years, the inspection frequency can be reduced to semi-annually provided that semi-annual groundwater monitoring has been approved by IEPA. After five years of semi-annual monitoring, the inspection frequency can be reduced to annually pending approval of annual groundwater monitoring. Inspections may be ceased after IEPA approval of the certified Post-Closure Care Report.

Site inspections include assessment of the condition and need for repair of final cover and vegetation, as well as fencing, monitoring points, surface water control features, and the Collection Trench.

For 2023, the site inspections were performed on February 16, June 30, September 11, and December 19. The June 2023 inspection indicated communication from flow totalizer associated with the Collection Trench was interrupted in early spring. The modem for the totalizer was upgraded in fourth quarter of 2023 to restore communications. The other components of the closure system were in good condition. The inspection reports for 2023 are included in **Appendix B**.

4. EVALUATION OF COMPLIANCE

During the most recent eight monitoring events (2022-2023), none of the monitored parameters detected at concentrations above their respective 35 IAC 620.410 Class I Groundwater standards showed increasing short-term trends; as such, no further action is required at this time.

5. CONCLUSIONS

Cover system construction and maintenance, as well as stable or decreasing dissolved boron and sulfate concentrations in the majority of Ash Pond D compliance monitoring wells, are strong indications that the cover system is functioning to improve overall groundwater quality beneath the pond.

Statistical analyses of results for the most recent eight rounds of groundwater samples collected for the 2022 to 2023 compliance period at Hutsonville Ash Pond D did not show short-term increasing trends for concentrations above the 35 IAC 620.410 Class I Groundwater Standard for any parameter at any well; as such, no further action is required at this time. The concentrations of indicator parameters will continue to be monitored and evaluated in 2024.

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TABLES

**Table 1-1. Groundwater Monitoring Program Schedule
2023 Annual Report
Former Hutsonville Power Station - Ash Pond D**

Frequency	Duration	Sampling Quarter	Report Due Date
Quarterly	Begins: January 2013	January- March (1) April - June (2) July - September (3) October - December (4)	May 31 August 31 November 30 February 28
	Ends: 5 years after approval of closure plan and upon demonstration that monitoring effectiveness is not compromised and that there are no statistically significant increasing trends attributable to Ash Pond D.		
Semiannual	Begins: after IEPA approves that quarterly monitoring requirements have been satisfied.	April - June (2) October - December (4)	August 31 February 28
	Ends: 5 years after initiation of semiannual monitoring and upon demonstration that monitoring effectiveness is not compromised and that there are no increasing trends attributable to the Ash Pond D.		
Annual	Begins: Five years after approval of semi-annual monitoring and after Illinois EPA approval.	April - June (2)	August 31
	Ends: After successful completion of the post-closure activities required by 35 IAC 840.142 and approval of the Illinois EPA.		

**Table 1-2. Groundwater Monitoring System Wells
2023 Annual Report
Former Hutsonville Power Station - Ash Pond D**

Well	Installation Date	Surface Elevation (ft, MSL ²)	TOC ¹ Elevation (ft, MSL)	Top of Screen Elev (ft)	Bottom of Screen Elevation (ft)	Total Well Depth (ft, BGS)	Objective	Position	Monitoring Zone ³
Ash Pond D Groundwater Monitoring System Wells: Water Quality and Groundwater Elevations									
MW-6	2/9/1984	438.7	443.17	433.9	427.5	11.2	Compliance	Downgradient	UZ - s&g, ss
MW-7	2/8/1984	439.9	442.28	422.9	412.9	27.0	Compliance	Downgradient	UZ - si s&g
MW-7D	10/5/1998	438.9	442.75	398.2	393.2	45.7	Compliance	Downgradient	LZ - si s&g
MW-8	2/8/1984	440.0	443.65	422.9	417.9	22.1	Compliance	Downgradient	UZ - si s
MW-10 ⁴	10/7/1998	452.9	454.23	447.2	442.2	10.7	Background	Upgradient	UZ - si s&g, ss
MW-10D ⁴	10/7/1998	452.9	454.65	436.6	431.6	21.3	Background	Upgradient	UZ - ss
MW-11R	10/3/2001	440.4	443.01	435.4	425.4	15.0	Compliance	Downgradient	UZ - s&g
MW-14	10/3/2001	440.1	442.89	412.9	407.9	32.2	Compliance	Downgradient	LZ - s&g
MW-23D ⁴	11/28/2017	453.5	455.90	434.0	428.7	24.8	Background	Upgradient	UZ - ss, sh
MW-23S ⁴	11/28/2017	453.4	456.03	444.2	438.9	14.5	Background	Upgradient	UZ - s si, si s, ss
MW-115S	5/1/2004	438.7	440.88	408.4	403.4	35.3	Compliance	Downgradient	LZ - s&g
MW-115D	5/1/2004	439.1	441.39	356.4	351.4	87.7	Compliance	Downgradient	LZ - s&g
MW-121	10/2/2001	439.2	440.23	403.8	398.8	40.3	Compliance	Downgradient	LZ - s&g
Other Monitoring Wells and Piezometers: Groundwater Elevations									
MW-2D	10/14/2015	452.9	455.42	435.1	430.4	23.1	--	--	UZ - ss
MW-2R	6/4/2012	453.0	455.37	446.0	435.3	17.8	--	--	UZ - s&g
MW-3	2/9/1984	453.7	454.84	447.7	442.7	11.0	--	--	UZ - s&g
MW-3D	10/6/1998	453.57	455.01	433.6	428.6	24.971	--	--	UZ - ss
MW-4	2/13/1984	454.0	456.76	449.4	441.9	12.1	--	--	UZ - s&g, ss
MW-5	2/13/1984	452.1	454.67	447.3	434.3	17.8	--	--	UZ - s&g, ss
MW-9	2/14/1984	451.7	454.38	443.5	433.5	18.2	--	--	UZ - s&g
MW-12	10/8/1998	455.5	456.74	448.6	438.6	16.9	--	--	UZ - s&g
MW-22S	10/14/2015	449.2	451.48	441.9	437.2	12.7	--	--	UZ - si s&g, ss
MW-22D	10/14/2015	449.1	451.36	431.7	427.0	22.7	--	--	UZ - si s&g, ss

Notes:

1. TOC = top of casing
 2. BGS = below ground surface; MSL = mean sea level.
 3. UZ = Upper Zone, LZ = Lower Zone (deep alluvial aquifer); s = sand or sandy, s&g = sand and gravel, si = silt or silty, ss = sandstone, sh = shale
 4. Background wells MW-10 and MW-10D were damaged and replaced with background wells MW-23D and MW-23S.
- Not applicable. Wells listed are for development of groundwater elevation contour maps only.

**Table 1-3. Groundwater Monitoring Program Parameters
2023 Annual Report
Former Hutsonville Power Station - Ash Pond D**

Field Parameters	STORET Code
pH ²	00400
Specific Conductance ²	00094
Depth to Water (BMP)	72109
Elevation of GW Surface ²	71993
Depth of Well (BGS) ²	72008
Elevation of Measuring Point	72110
Laboratory Parameters¹	STORET Code
Boron ²	01020
Iron ²	01046
Manganese ²	01056
Sulfate ²	00946
Total Dissolved Solids (TDS) ²	70300
Antimony	01095
Arsenic	01000
Barium	01005
Beryllium	01010
Cadmium	01025
Chloride	00941
Chromium	01030
Cobalt	01035
Copper	01040
Cyanide	00720
Fluoride	00950
Lead	01049
Mercury	71890
Nickel	01065
Nitrate as N	00618
Selenium	01145
Silver	01075
Thallium	01057
Zinc	01090

Notes:

¹ Reported as dissolved (filtered) concentrations.

² Mandatory monitoring parameter per 35 IAC 840.114(a).

Table 3-1. Trend Analysis Results
2023 Annual Report
Former Hutsonville Power Station - Ash Pond D

	MW-6	MW-7	MW-7D	MW-8	MW-11R	MW-14	MW-23D	MW-23S	MW-115S	MW-115D	MW-121
Number of Samples	5	8	8	8	8	8	8	8	8	8	8
Antimony, dissolved	None	None	None	None	None	None	None	None	None	None	None
Arsenic, dissolved	None	None	None	None	None	None	None	None	None	None	None
Barium, dissolved	None	None	None	None	None	None	None	None	None	None	None
Beryllium, dissolved	None	None	None	None	None	None	None	None	None	None	None
Boron, dissolved	+	Decrease	Decrease	+	+	Decrease	None	None	None	None	None
Cadmium, dissolved	None	None	None	None	None	None	None	None	None	None	None
Chloride, dissolved	Decrease	+	-	-	+	Increase	Decrease	-	+	+	-
Chromium, dissolved	None	None	None	None	None	None	None	None	None	None	None
Cobalt, dissolved	None	None	None	None	None	None	None	None	None	None	None
Copper, dissolved	None	None	None	None	None	None	None	None	None	None	None
Cyanide, total	None	None	None	None	None	None	None	None	None	None	None
Fluoride, dissolved	None	None	None	None	None	None	None	None	None	None	None
Iron, dissolved	None	None	None	None	None	None	None	None	None	None	None
Lead, dissolved	None	None	None	None	None	None	None	None	None	None	None
Manganese, dissolved	None	None	None	+	None	None	None	None	None	None	+
Mercury, dissolved	None	None	None	None	None	None	None	None	None	None	None
Nickel, dissolved	None	None	None	None	None	None	None	None	None	None	None
Nitrate nitrogen, dissolved	-	Decrease	None	None	-	None	None	None	None	None	None
Selenium, dissolved	None	None	None	None	None	None	None	None	None	None	None
Silver, dissolved	None	None	None	None	None	None	None	None	None	None	None
Sulfate, dissolved	-	Decrease	-	+	+	-	-	Decrease	-	+	Increase
Thallium, dissolved	None	None	None	None	None	None	None	None	None	None	None
Total Dissolved Solids	+	Decrease	-	+	+	+	-	-	-	+	+
Zinc, dissolved	None	None	None	None	None	None	None	None	None	None	None

- "+" indicates that the Sen's non-parametric estimate of the median slope is positive.

[O: RSD 1/2/2023, C: KLT 1/3/24]

- "-" indicates that the Sen's non-parametric estimate of the median slope is negative.

- "Decrease" indicates a statistically significant decreasing trend

- "Increase" indicates a statistically significant increasing trend

- Mann Kendall Trend analysis done with non-detects at one half the reporting limit.

- The most recent eight sampling events were used for analysis; date range for this analysis is 1/1/2022-12/31/2023.

- Green shading indicates increasing trends as determined using the Mann-Kendall test at 95% confidence for constituents with maximum concentration lower than the Class I groundwater quality standard.

- ID indicated that there was insufficient data to perform Sen's Estimate of Slope.



Table 3-2. Summary of Trend Analyses
2023 Annual Report
Former Hutsonville Power Station - Ash Pond D

Time Period	Short-Term Increasing Trends	Long-Term Decreasing Concentration Patterns
2013-2014	7	19
2014-2015	2	
2015-2016	1	
2016-2017	2	
2017-2018	8	
2018-2019	13	
2019-2020	1	
2020-2021	7	
2021-2022	5	
2022-2023	2	

[O: RSD 1/2/2024, C: KLT 1/3/24]

Notes:

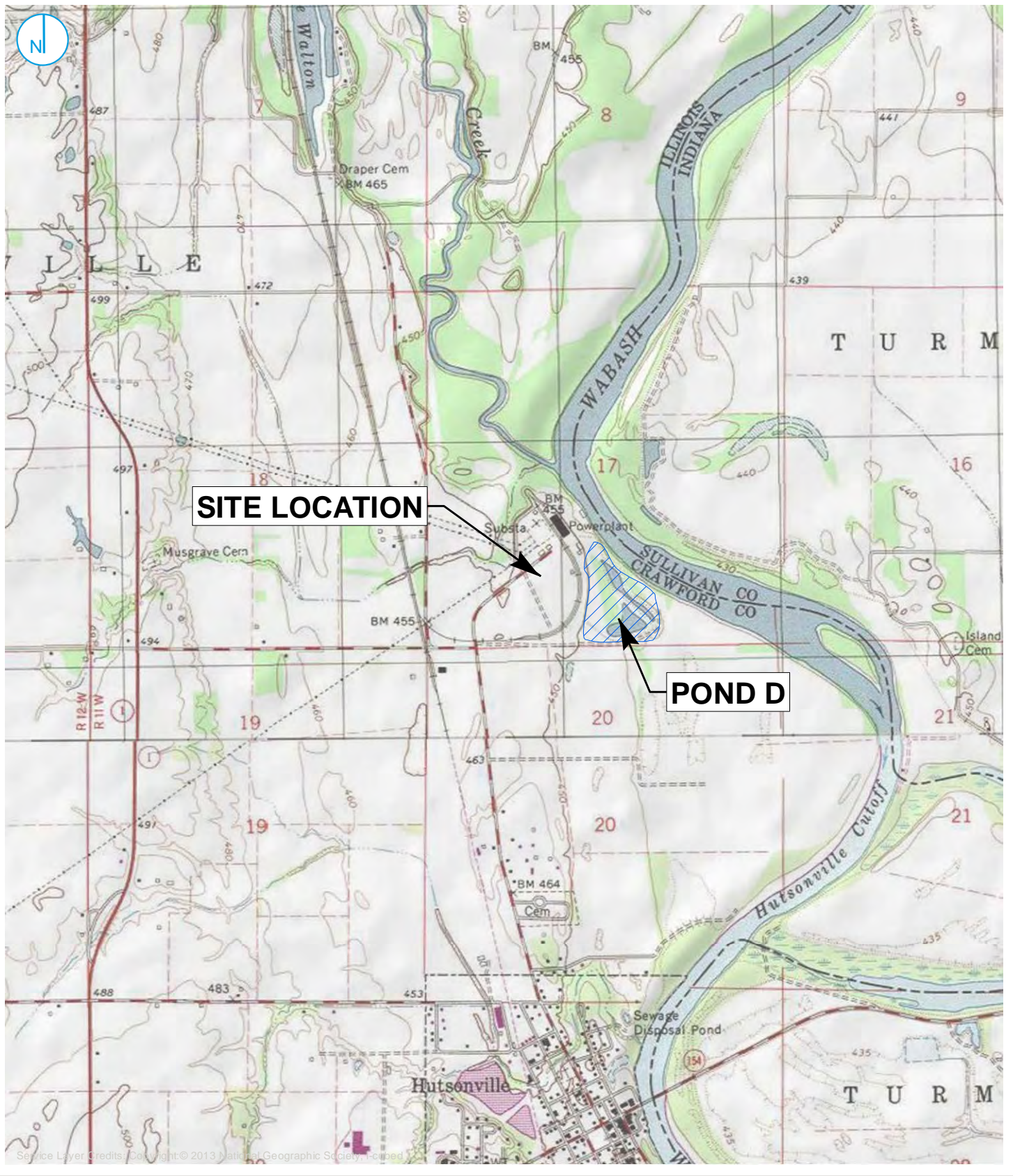
Trends based on data collected during the specified periods.

The number of samples per well location for short-term trends are noted on Table 3-1.

Long-term trends were calculated with data since completion of closure in January 2013.



FIGURES



Map Scale: 1:124,000;
Map Center: 87°39'45"W 39°7'53"N



SITE LOCATION MAP

FIGURE 1-1

2023 ANNUAL REPORT
FORMER HUTSONVILLE
POWER STATION - ASH POND D
AMEREN ENERGY MEDINA VALLEY COGEN, LLC
HUTSONVILLE, IL

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Service Layer Credits: Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community NAIP 2017

- ASH POND D MONITORING WELL LOCATION
- NESTED ASH POND D MONITORING WELL LOCATION
- ASH POND A MONITORING WELL LOCATION
- NESTED ASH POND A MONITORING WELL LOCATION
- ABANDONED NESTED MONITORING WELL LOCATION
- PROPERTY LINE
- APPROXIMATE BOUNDARY OF CAPPED ASH POND
- GROUNDWATER COLLECTION TRENCH (BEGAN OPERATION APRIL 2015)
- LIMITS OF GROUNDWATER MANAGEMENT ZONE



MONITORING WELL LOCATION MAP

2023 ANNUAL REPORT
FORMER HUTSONVILLE POWER STATION - ASH POND D
 AMEREN ENERGY MEDINA VALLEY COGEN, LLC
 HUTSONVILLE, IL

FIGURE 1-2

RAMBOLL AMERICAS
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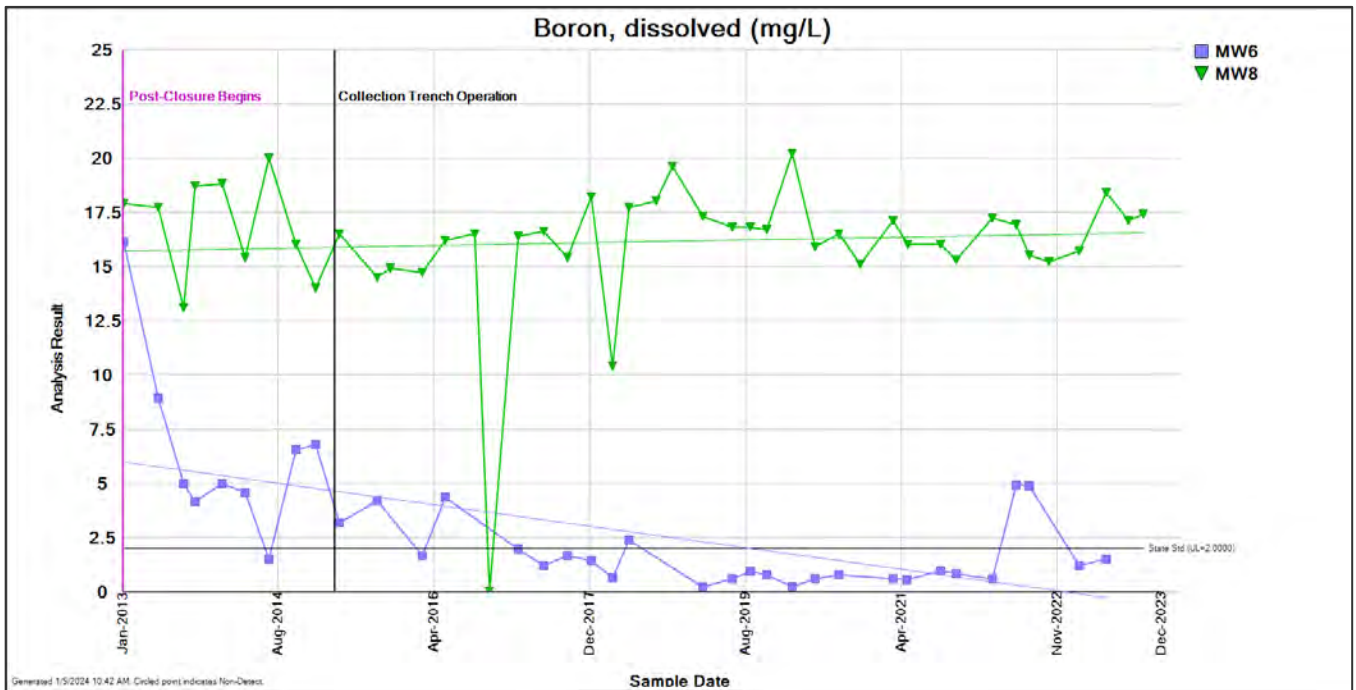


Figure 1-3. Boron concentrations over time since closure completion (2013) at compliance wells MW-6 and MW-8. (Note: Lines through the concentration data represent the best fit linear regressions)

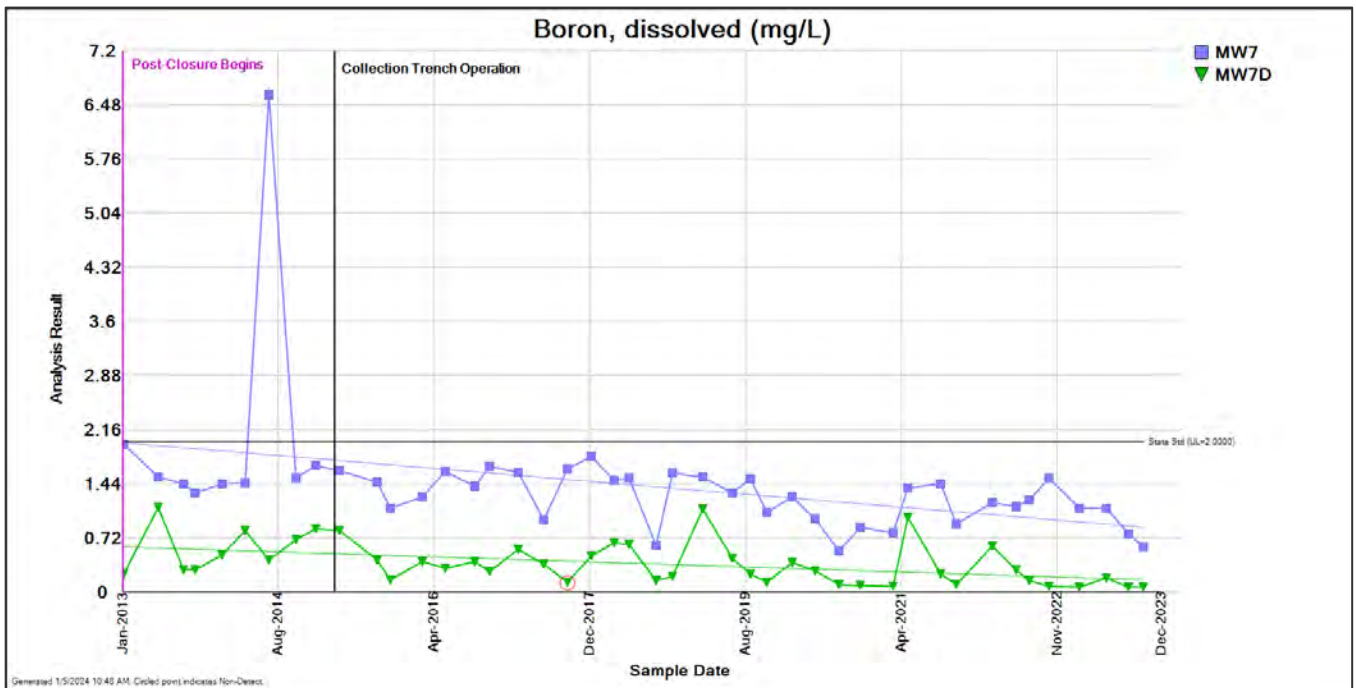


Figure 1-4. Boron concentrations over time since closure completion (2013) at compliance wells MW-7 and MW-7D. Circled results indicate non-detects. (Note: Lines through the concentration data represent the best fit linear regressions)

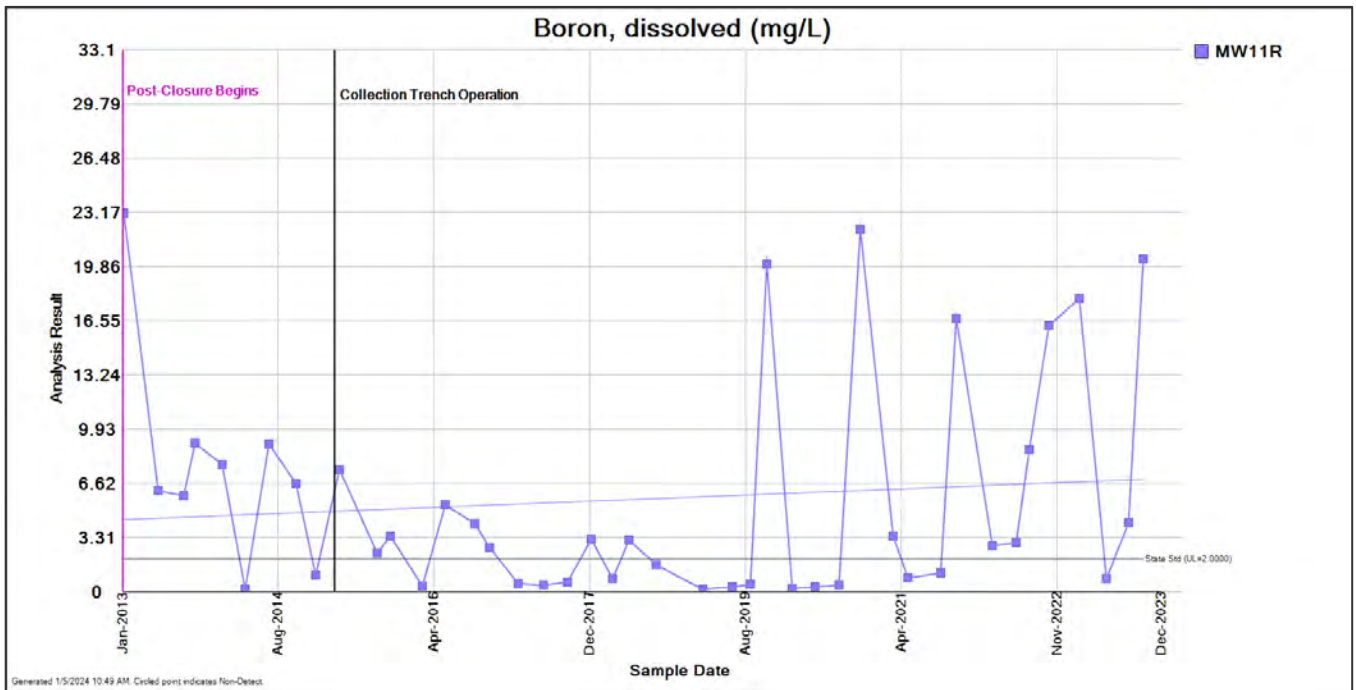


Figure 1-5. Boron concentrations over time since closure completion (2013) at compliance wells MW-11R. (Note: Lines through the concentration data represent the best fit linear regressions)

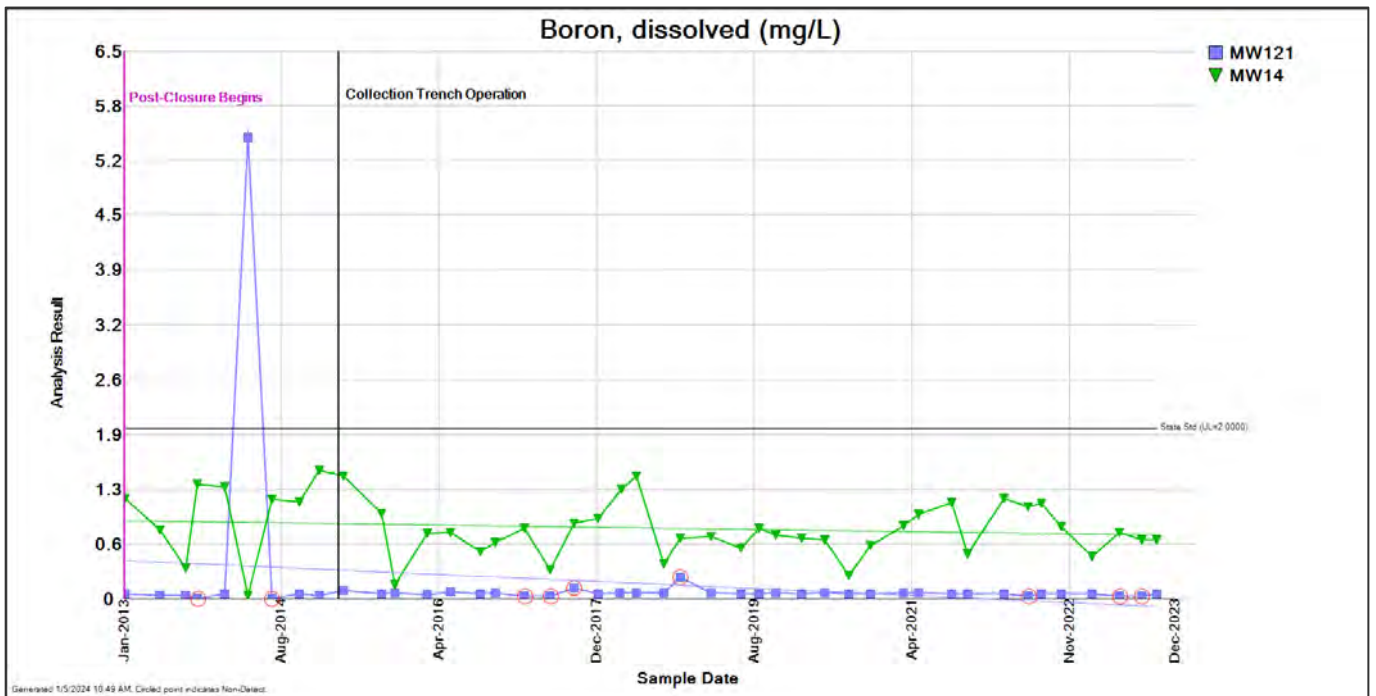


Figure 1-6. Boron concentrations over time since closure completion (2013) at compliance wells MW-121 and MW-14. Circled results indicate non-detects. (Note: Lines through the concentration data represent the best fit linear regressions)

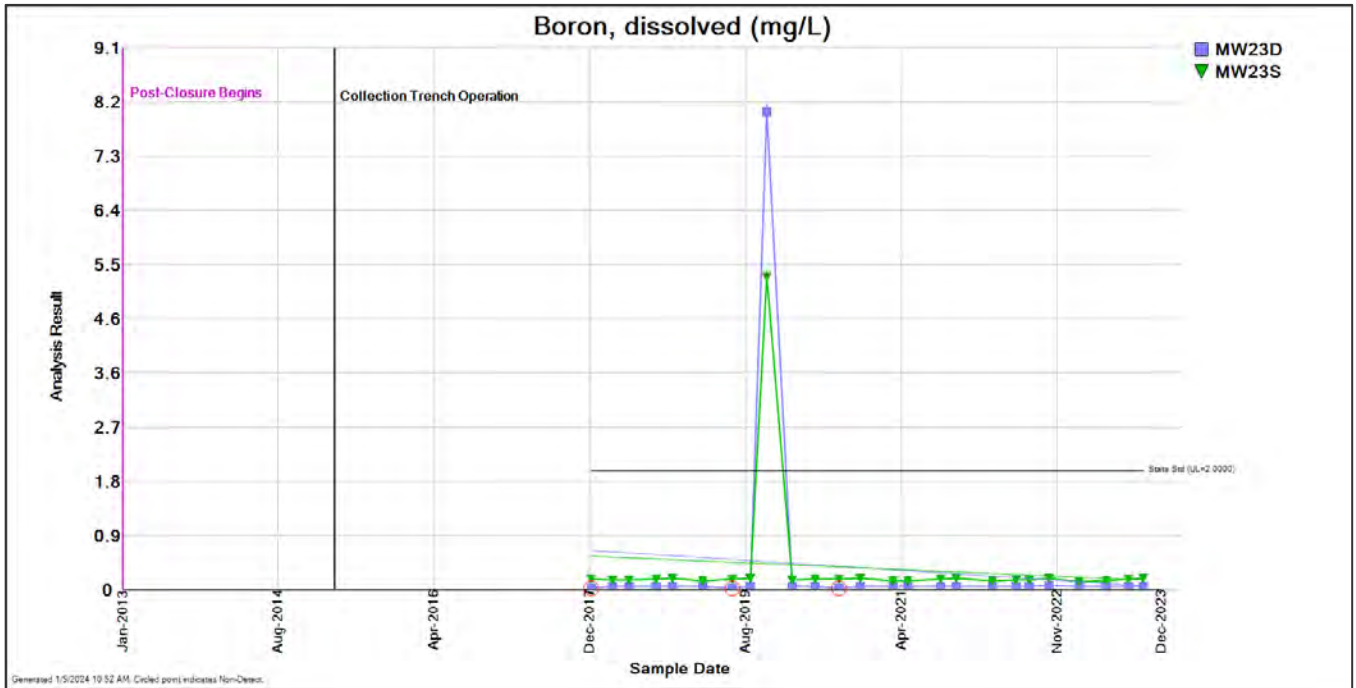


Figure 1-7. Boron concentrations over time since closure completion (2013) at background wells MW-23S and MW-23D. Circled results indicate non-detects. (Note: Lines through the concentration data represent the best fit linear regressions)

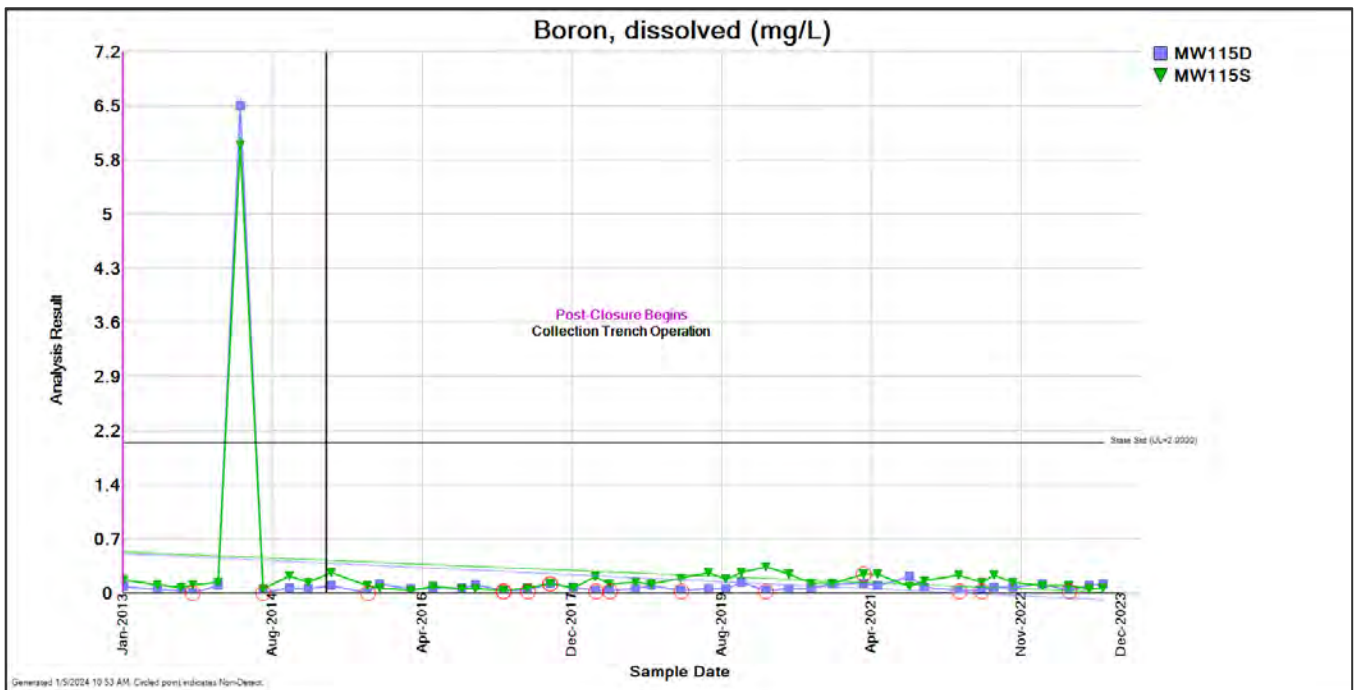


Figure 1-8. Boron concentrations over time since closure completion (2013) at compliance wells MW-115S and MW-115D. Circled results indicate non-detects. (Note: Lines through the concentration data represent the best fit linear regressions)

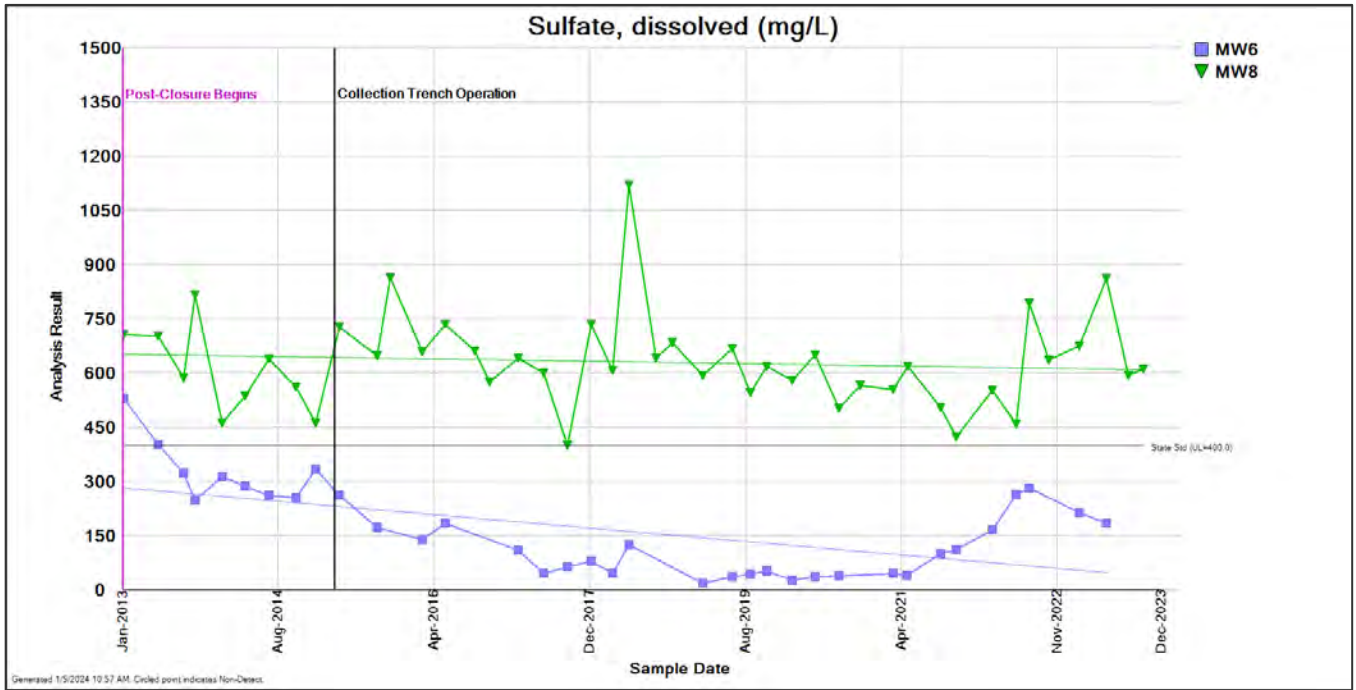


Figure 1-9. Sulfate concentrations over time since closure completion (2013) at compliance wells MW-6 and MW-8. (Note: Lines through the concentration data represent the best fit linear regressions)

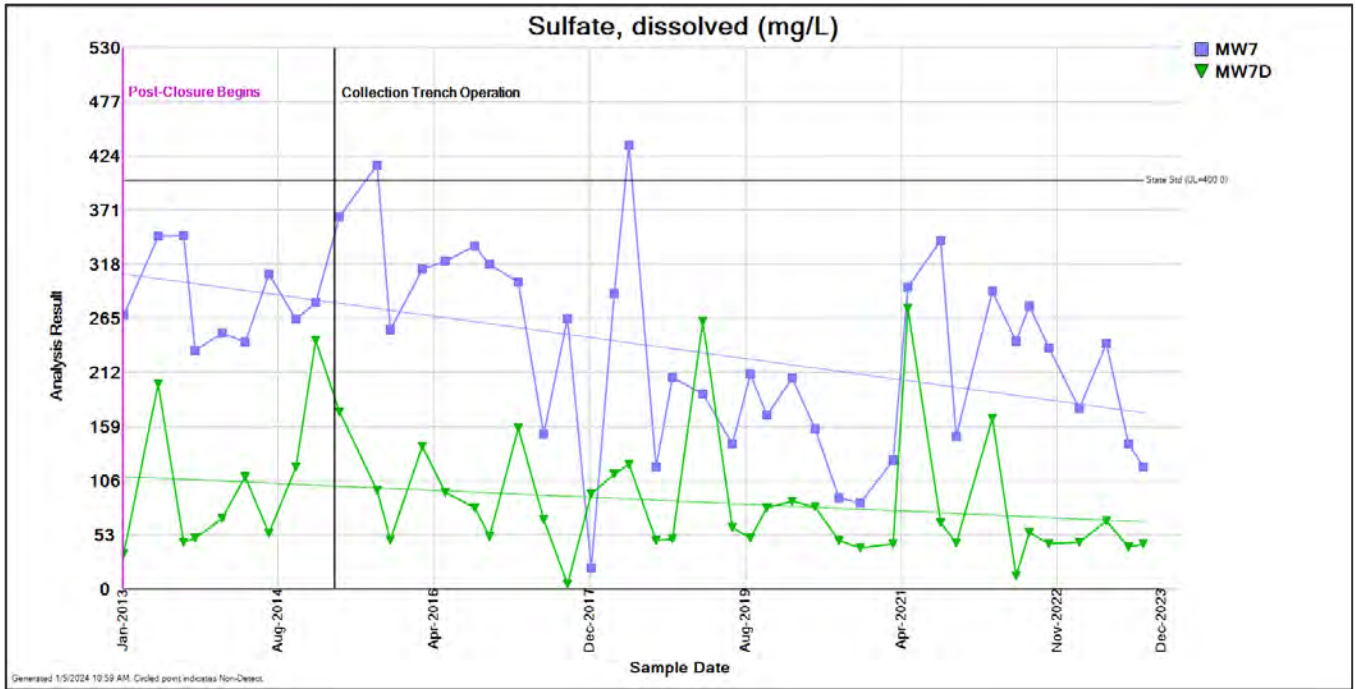


Figure 1-10. Sulfate concentrations over time since closure completion (2013) at compliance wells MW-7 and MW-7D. (Note: Lines through the concentration data represent the best fit linear regressions)

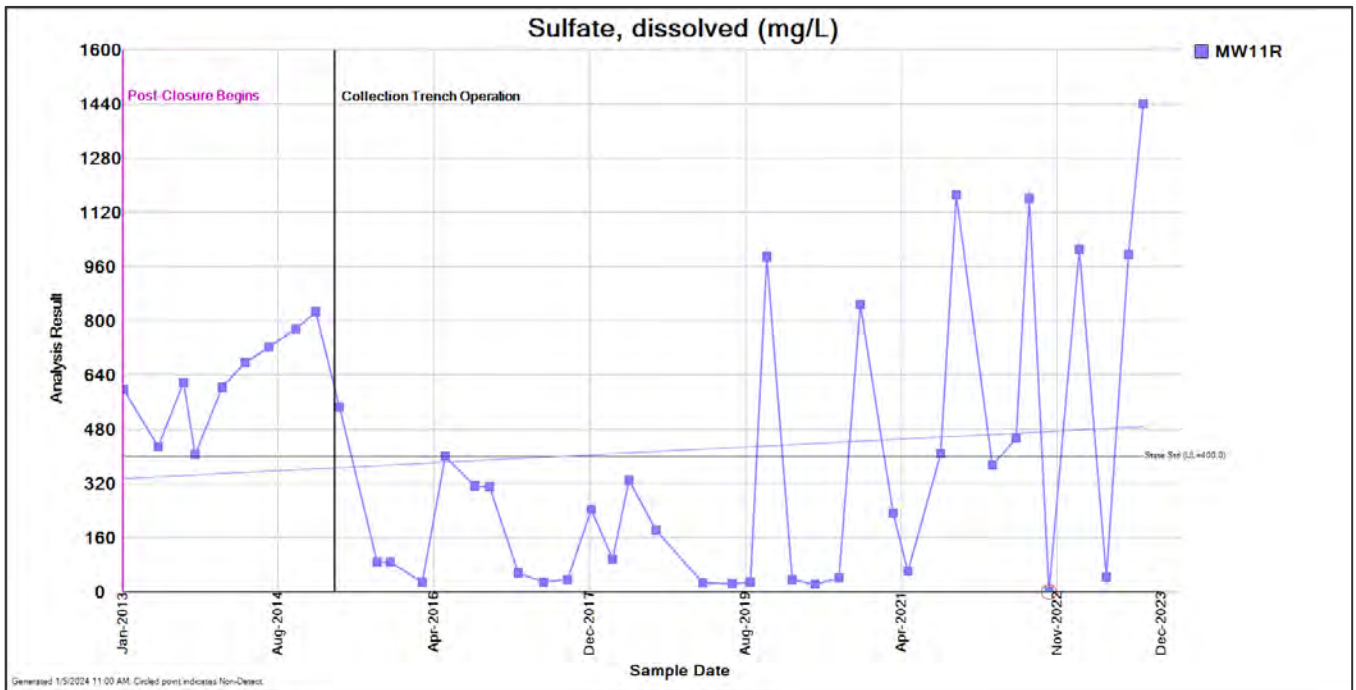


Figure 1-11. Sulfate concentrations over time since closure completion (2013) at compliance wells MW-11R. Circled results indicate non-detects. (Note: Lines through the concentration data represent the best fit linear regressions)

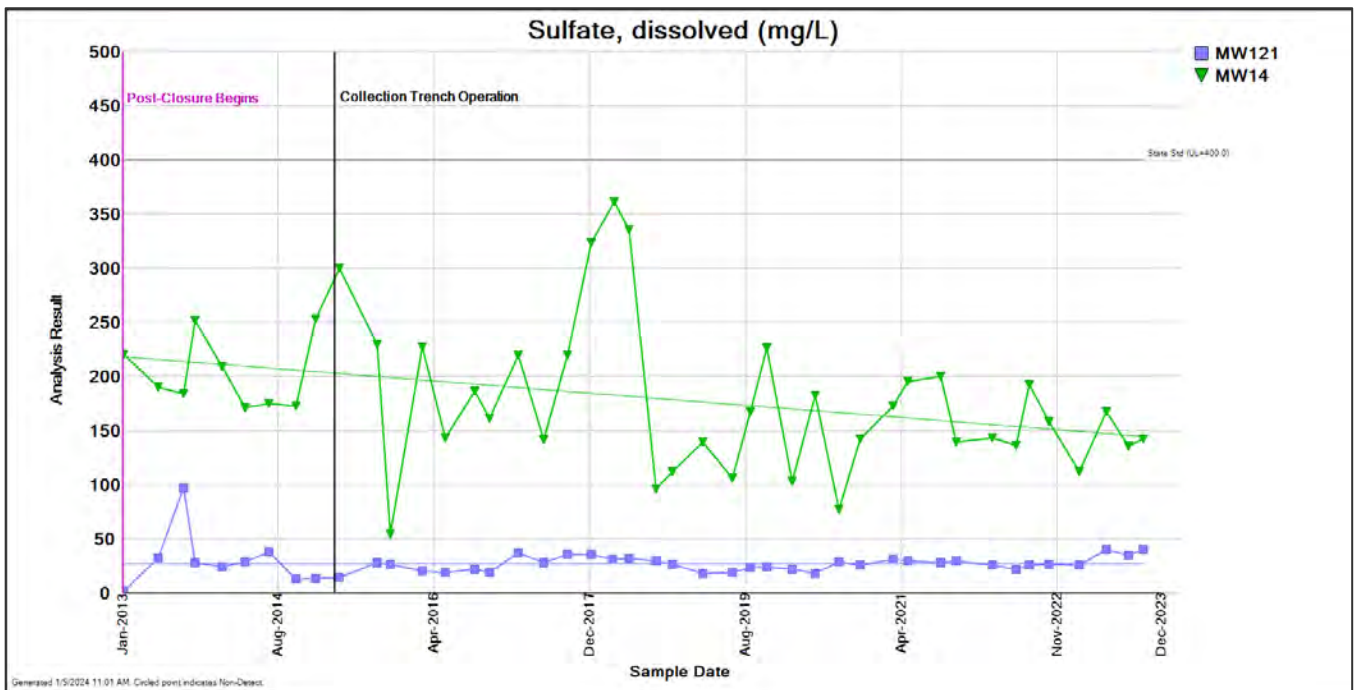


Figure 1-12. Sulfate concentrations over time since closure completion (2013) at compliance wells MW-121 and MW-14. (Note: Lines through the concentration data represent the best fit linear regressions)

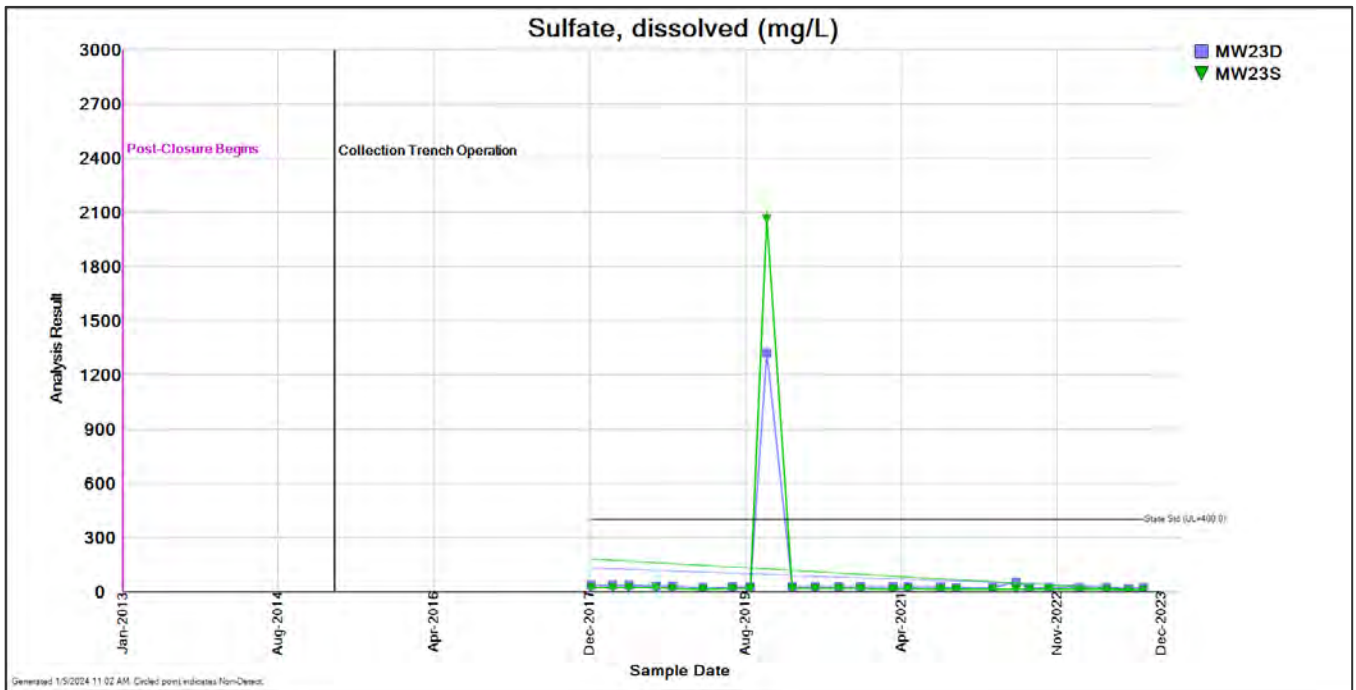


Figure 1-13. Sulfate concentrations over time since closure completion (2013) at background wells MW-23S and MW-23D. (Note: Lines through the concentration data represent the best fit linear regressions)

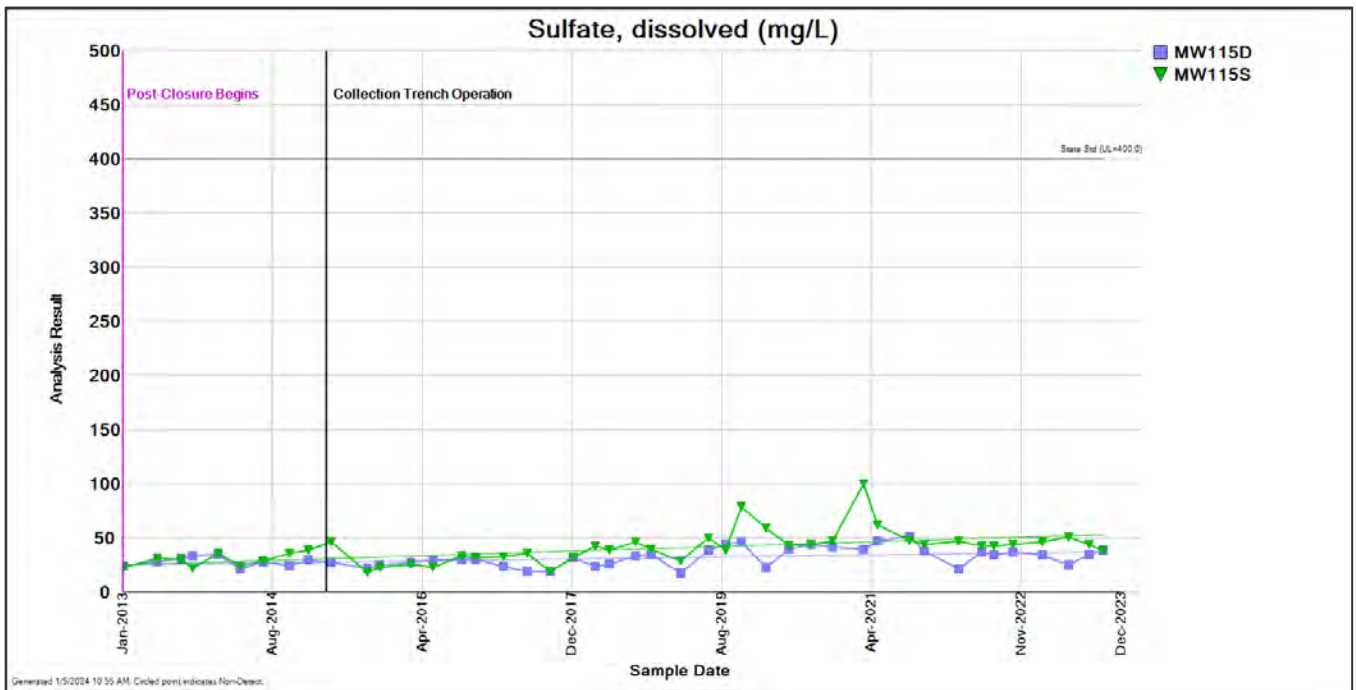
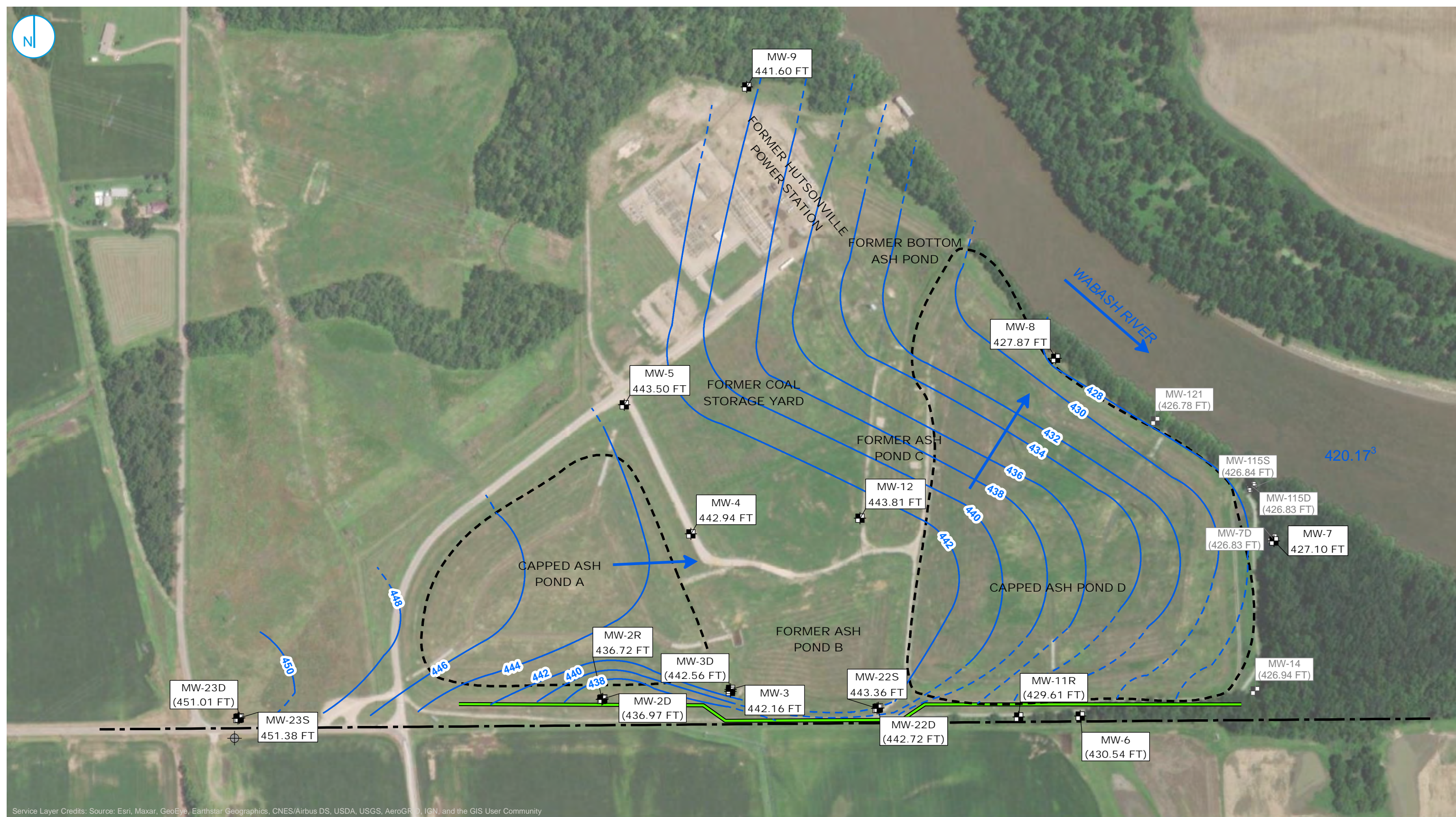


Figure 1-14. Sulfate concentrations over time since closure completion (2013) at compliance wells MW-115S and MW-115D. (Note: Lines through the concentration data represent the best fit linear regressions)



Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

	UPPER MIGRATION ZONE MONITORING WELL		GROUNDWATER FLOW DIRECTION
	DEEP MIGRATION ZONE MONITORING WELL		INFERRED GROUNDWATER ELEVATION CONTOUR
	ABANDONED MONITORING WELL LOCATION		APPROXIMATE BOUNDARY OF CAPPED ASH POND
	PROPERTY LINE		GROUNDWATER COLLECTION TRENCH (BEGAN OPERATION APRIL 2015)
	GROUNDWATER ELEVATION CONTOUR (2-FT CONTOUR INTERVAL)		

0 150 300 Feet

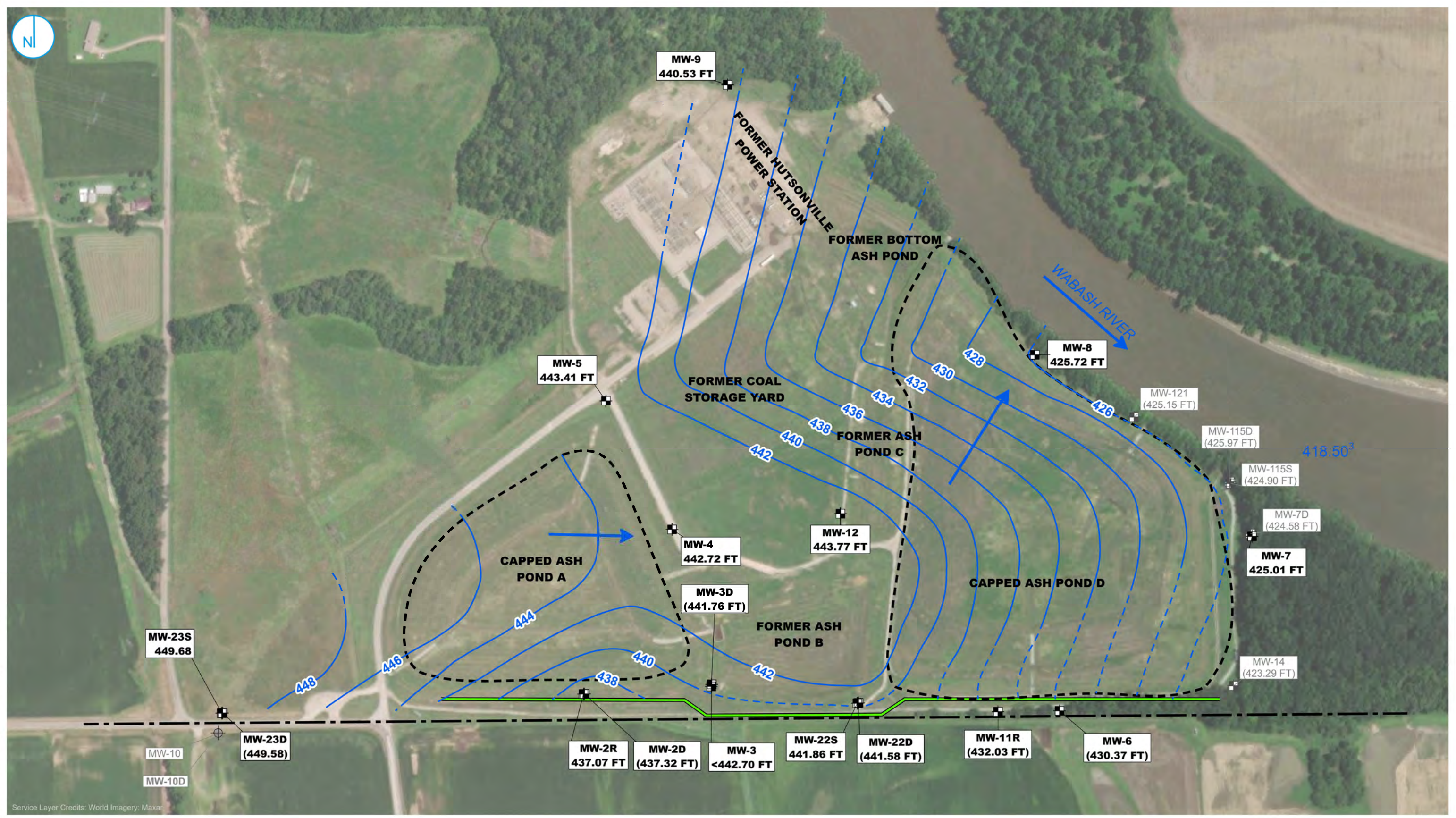
Notes
 1) GROUNDWATER AND RIVER ELEVATIONS REPORTED IN FEET NORTH AMERICAN VERTICAL DATUM OF 1988.
 2) GROUNDWATER ELEVATIONS IN PARENTHESES WERE NOT USED FOR CONTOURING.
 3) WABASH RIVER ELEVATIONS AS REPORTED BY USGS FROM USGS 03342000 WABASH RIVER AT RIVERTON, IN LOCATED APPROXIMATELY 12.5 RIVER MILES DOWNSTREAM. RIVER ELEVATION REPORTED IN FEET NATIONAL GEODETIC VERTICAL DATUM OF 1929 AND CONVERTED TO FEET NORTH AMERICAN VERTICAL DATUM OF 1988.

Q1 UPPER MIGRATION ZONE GROUNDWATER ELEVATION CONTOUR MAP
FEBRUARY 20, 2023

2023 ANNUAL REPORT
FORMER HUTSONVILLE POWER STATION - ASH POND D
 AMEREN ENERGY MEDINA VALLEY COGEN, LLC
 HUTSONVILLE, IL

FIGURE 3-1

RAMBOLL AMERICAS
 ENGINEERING SOLUTIONS, INC
 A RAMBOLL COMPANY



- UPPER MIGRATION ZONE MONITORING WELL
- DEEP MIGRATION ZONE MONITORING WELL
- ABANDONED MONITORING WELL LOCATION
- PROPERTY LINE
- APPROXIMATE BOUNDARY OF CAPPED ASH POND
- GROUNDWATER COLLECTION TRENCH (BEGAN OPERATION APRIL 2015)
- GROUNDWATER ELEVATION CONTOUR (2-FT CONTOUR INTERVAL)
- GROUNDWATER FLOW DIRECTION
- INFERRED GROUNDWATER ELEVATION CONTOUR

Notes
 1) GROUNDWATER AND RIVER ELEVATIONS REPORTED IN FEET NORTH AMERICAN VERTICAL DATUM OF 1988.
 2) GROUNDWATER ELEVATIONS IN PARENTHESES WERE NOT USED FOR CONTOURING.
 3) WABASH RIVER ELEVATIONS AS REPORTED BY USGS FROM USGS 03342000 WABASH RIVER AT RIVERTON, IN LOCATED APPROXIMATELY 12.5 RIVER MILES DOWNSTREAM.

Q2 UPPER MIGRATION ZONE GROUNDWATER ELEVATION CONTOUR MAP JUNE 5, 2023

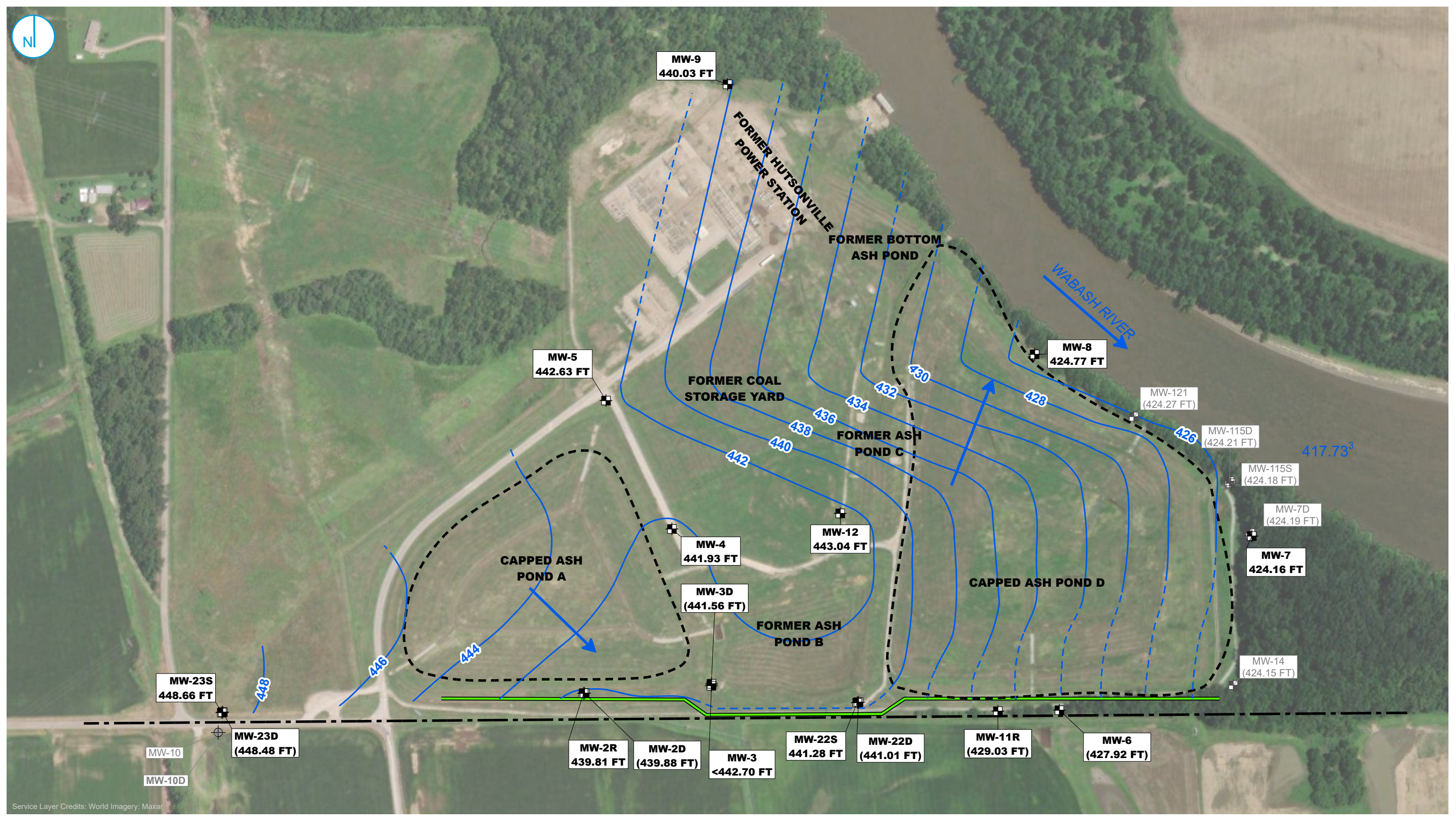
**2023 ANNUAL REPORT
 FORMER HUTSONVILLE POWER STATION - ASH POND D
 AMEREN ENERGY MEDINA VALLEY COGEN, LLC
 HUTSONVILLE, IL**



FIGURE 3-2

RAMBOLL AMERICAS
 ENGINEERING SOLUTIONS, INC
 A RAMBOLL COMPANY





- UPPER MIGRATION ZONE MONITORING WELL
- DEEP MIGRATION ZONE MONITORING WELL
- ABANDONED MONITORING WELL LOCATION
- PROPERTY LINE
- APPROXIMATE BOUNDARY OF CAPPED ASH POND
- GROUNDWATER COLLECTION TRENCH (BEGAN OPERATION APRIL 2015)
- GROUNDWATER ELEVATION CONTOUR (2-FT CONTOUR INTERVAL)
- GROUNDWATER FLOW DIRECTION
- INFERRED GROUNDWATER ELEVATION CONTOUR

Notes
 1) GROUNDWATER AND RIVER ELEVATIONS REPORTED IN FEET NORTH AMERICAN VERTICAL DATUM OF 1988.
 2) GROUNDWATER ELEVATIONS IN PARENTHESES WERE NOT USED FOR CONTOURING.
 3) WABASH RIVER ELEVATIONS AS REPORTED BY USGS FROM USGS 03342000 WABASH RIVER AT RIVERTON, IN LOCATED APPROXIMATELY 12.5 RIVER MILES DOWNSTREAM.



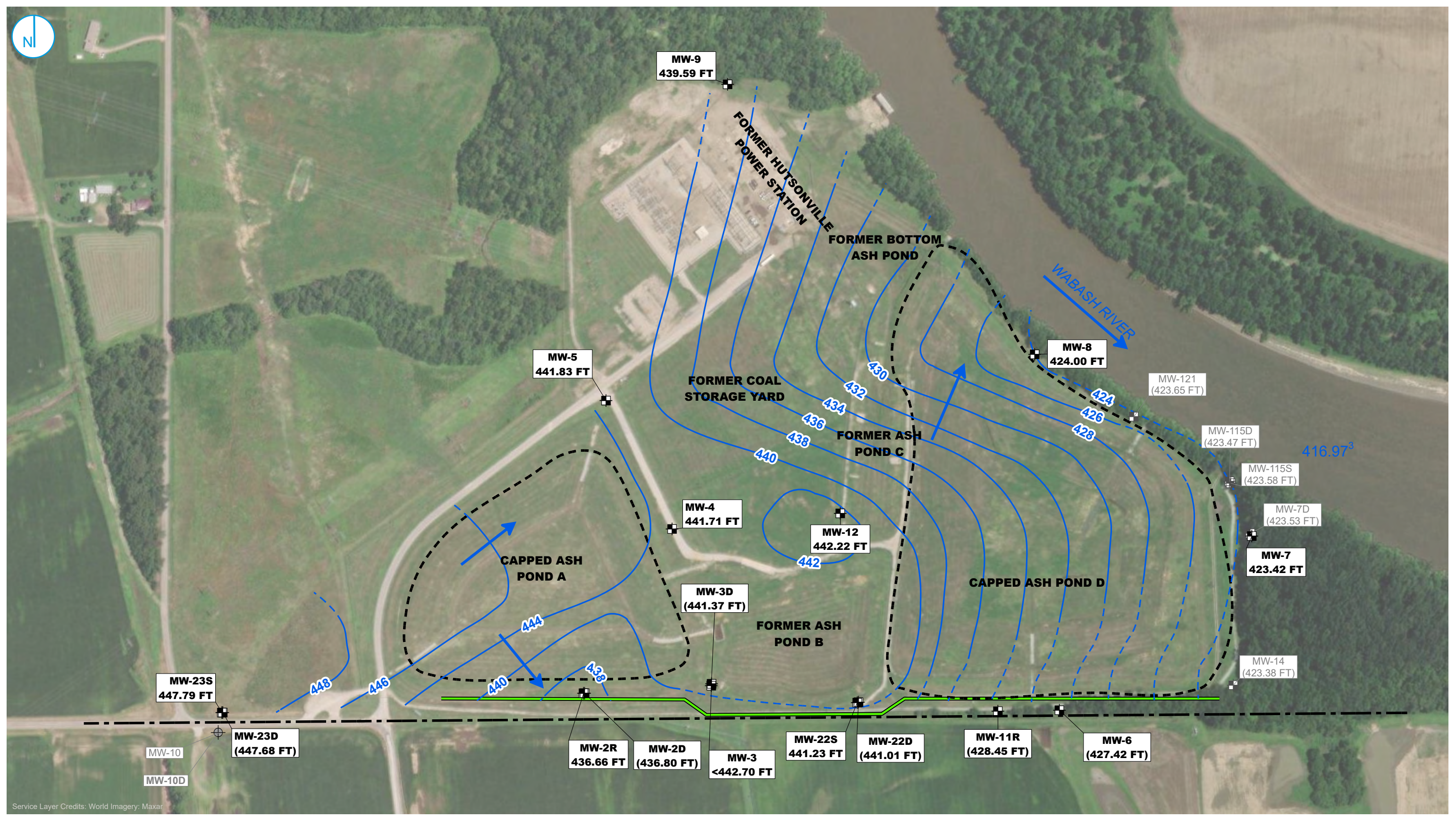
Q3 UPPER MIGRATION ZONE GROUNDWATER ELEVATION CONTOUR MAP
AUGUST 28, 2023

2023 ANNUAL REPORT
FORMER HUTSONVILLE POWER STATION - ASH POND D
 AMEREN ENERGY MEDINA VALLEY COGEN, LLC
 HUTSONVILLE, IL

FIGURE 3-3

RAMBOLL AMERICAS
ENGINEERING SOLUTIONS, INC
A RAMBOLL COMPANY





- UPPER MIGRATION ZONE MONITORING WELL
- DEEP MIGRATION ZONE MONITORING WELL
- ABANDONED MONITORING WELL LOCATION
- PROPERTY LINE
- APPROXIMATE BOUNDARY OF CAPPED ASH POND
- GROUNDWATER COLLECTION TRENCH (BEGAN OPERATION APRIL 2015)
- GROUNDWATER ELEVATION CONTOUR (2-FT CONTOUR INTERVAL)
- GROUNDWATER FLOW DIRECTION
- INFERRED GROUNDWATER ELEVATION CONTOUR

Notes
 1) GROUNDWATER AND RIVER ELEVATIONS REPORTED IN FEET NORTH AMERICAN VERTICAL DATUM OF 1988.
 2) GROUNDWATER ELEVATIONS IN PARENTHESES WERE NOT USED FOR CONTOURING.
 3) WABASH RIVER ELEVATIONS AS REPORTED BY USGS FROM USGS 03342000 WABASH RIVER AT RIVERTON, IN LOCATED APPROXIMATELY 12.5 RIVER MILES DOWNSTREAM.



Q4 UPPER MIGRATION ZONE GROUNDWATER ELEVATION CONTOUR MAP
OCTOBER 23, 2023

2023 ANNUAL REPORT
FORMER HUTSONVILLE POWER STATION - ASH POND D
 AMEREN ENERGY MEDINA VALLEY COGEN, LLC
 HUTSONVILLE, IL

FIGURE 3-4

RAMBOLL AMERICAS
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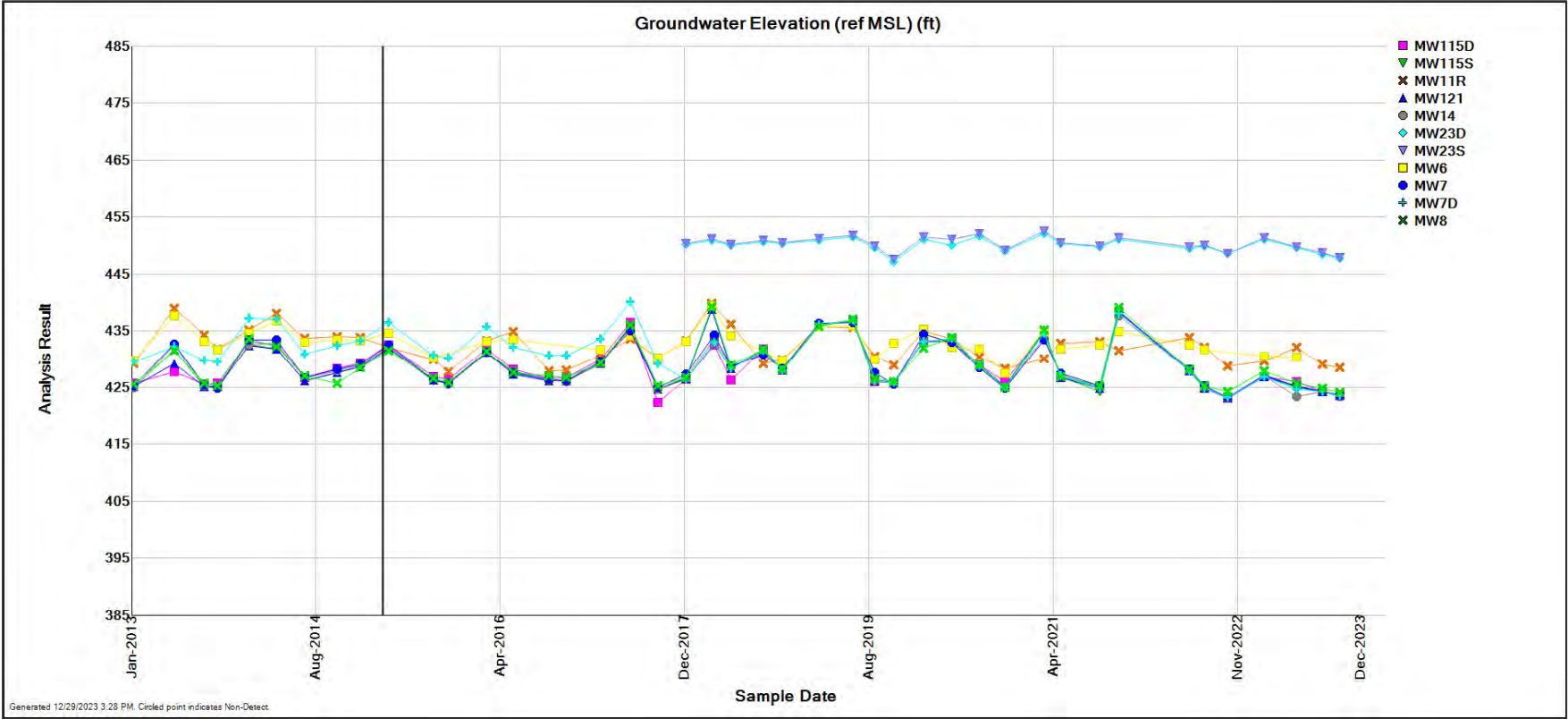


Figure 3-5. Groundwater elevations near groundwater collection trench

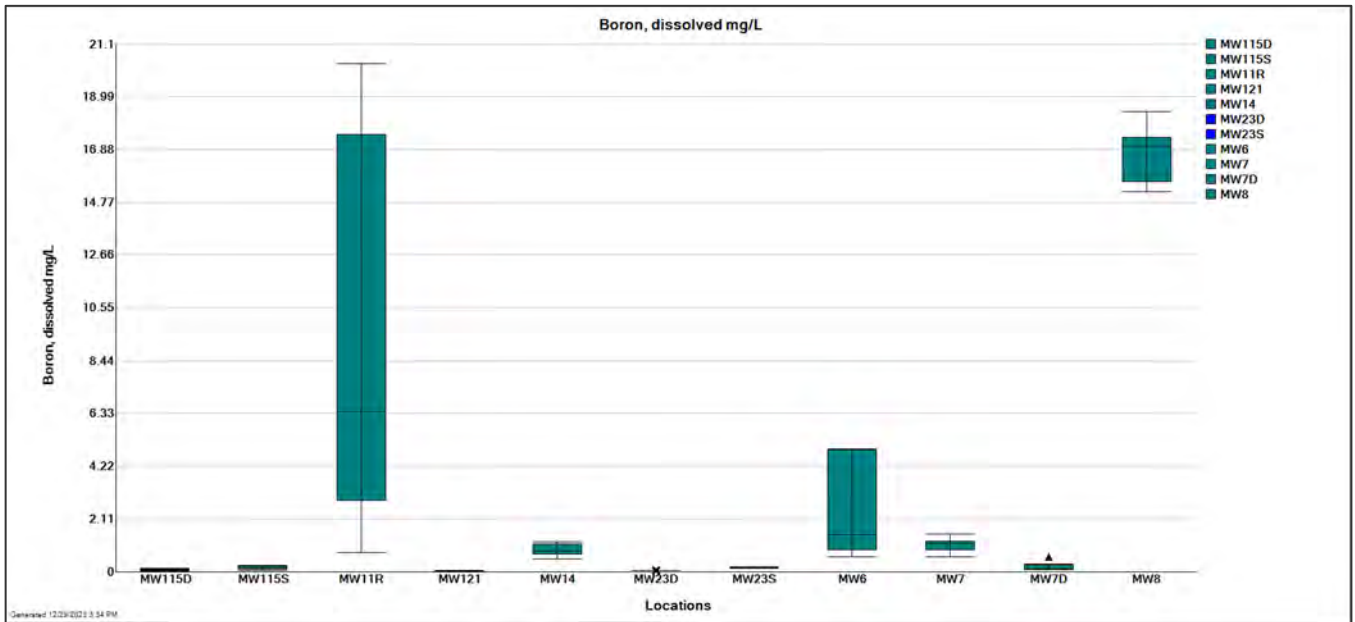


Figure 3-6. Box-whisker plot showing distribution of **boron** concentration by monitoring well for data collected in 2022 and 2033. Note: Box-whisker plots for background wells are blue and box-whisker plots for compliance wells are green.

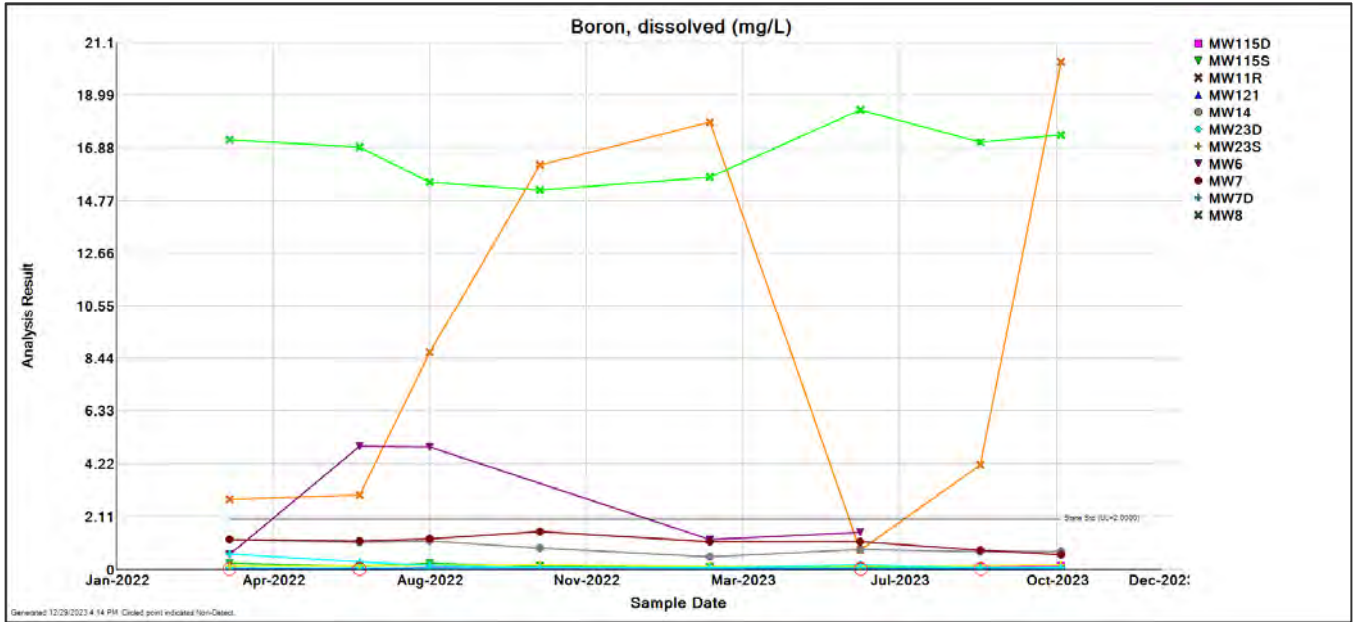


Figure 3-7. Boron concentrations during the reporting period (2022-2023) at all background and compliance wells. Circled results indicate non-detects.

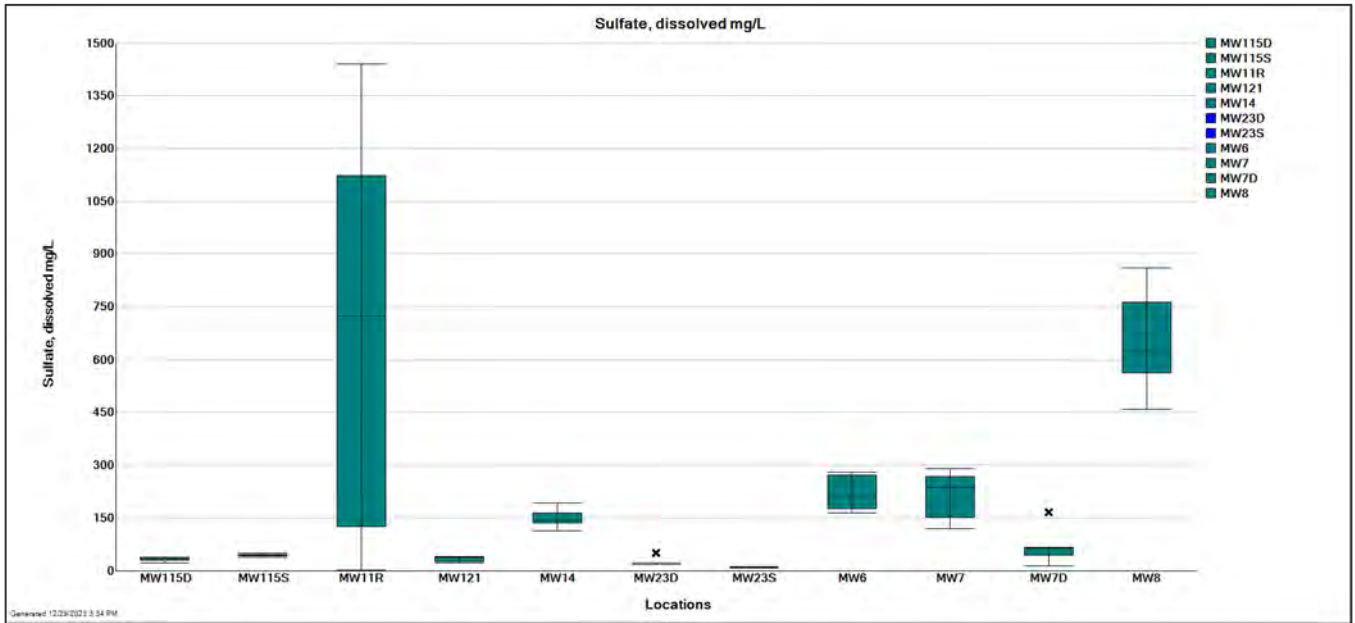


Figure 3-8. Box-whisker plot showing distribution of **sulfate** concentration by monitoring well for data collected in 2022 and 2023. Note: Box-whisker plots for background wells are blue and box-whisker plots for compliance wells are green.

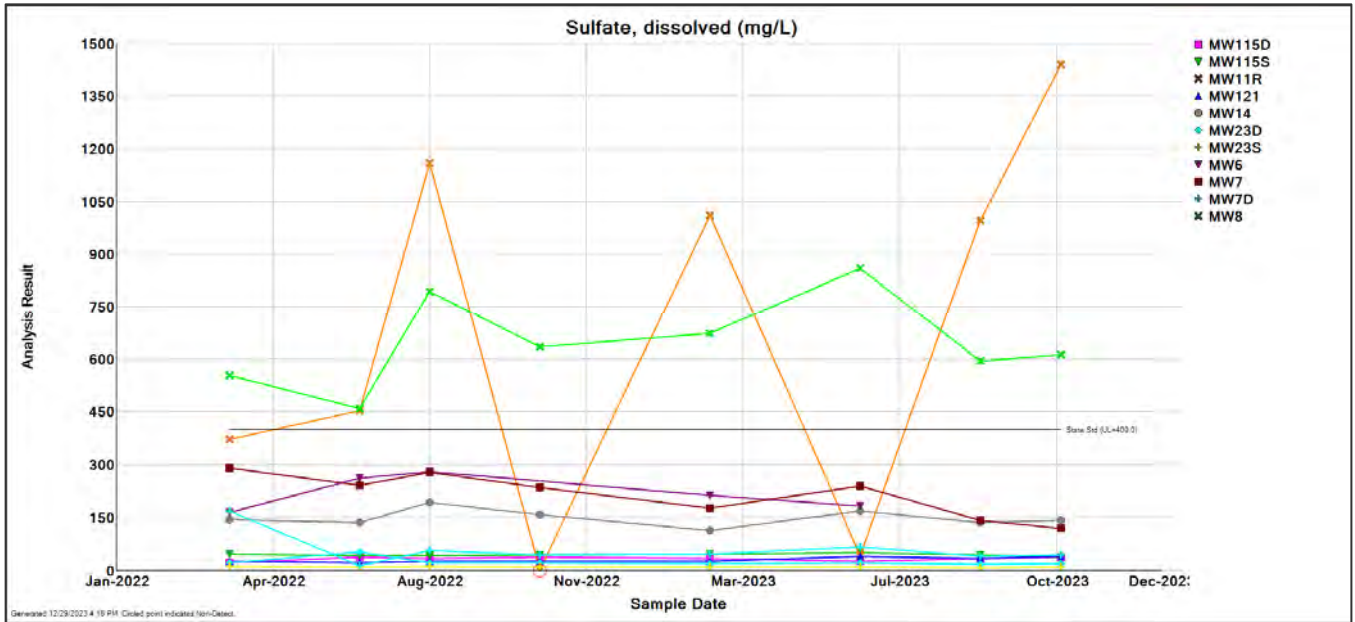


Figure 3-9. Sulfate concentrations during the reporting period (2022-2023) at all background and compliance wells. Circled results indicate non-detects.

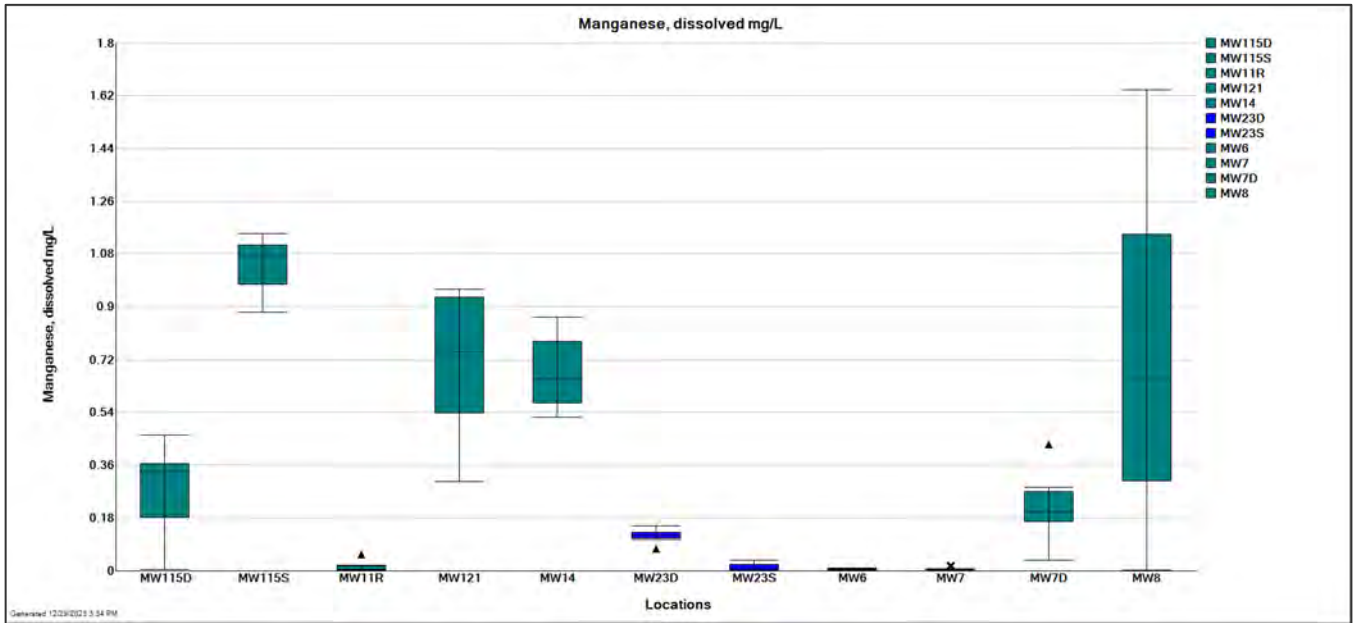


Figure 3-10. Box-whisker plot showing distribution of **manganese** concentration by monitoring well for data collected in 2022 and 2023. Note: Box-whisker plots for background wells are blue and box-whisker plots for compliance wells are green.

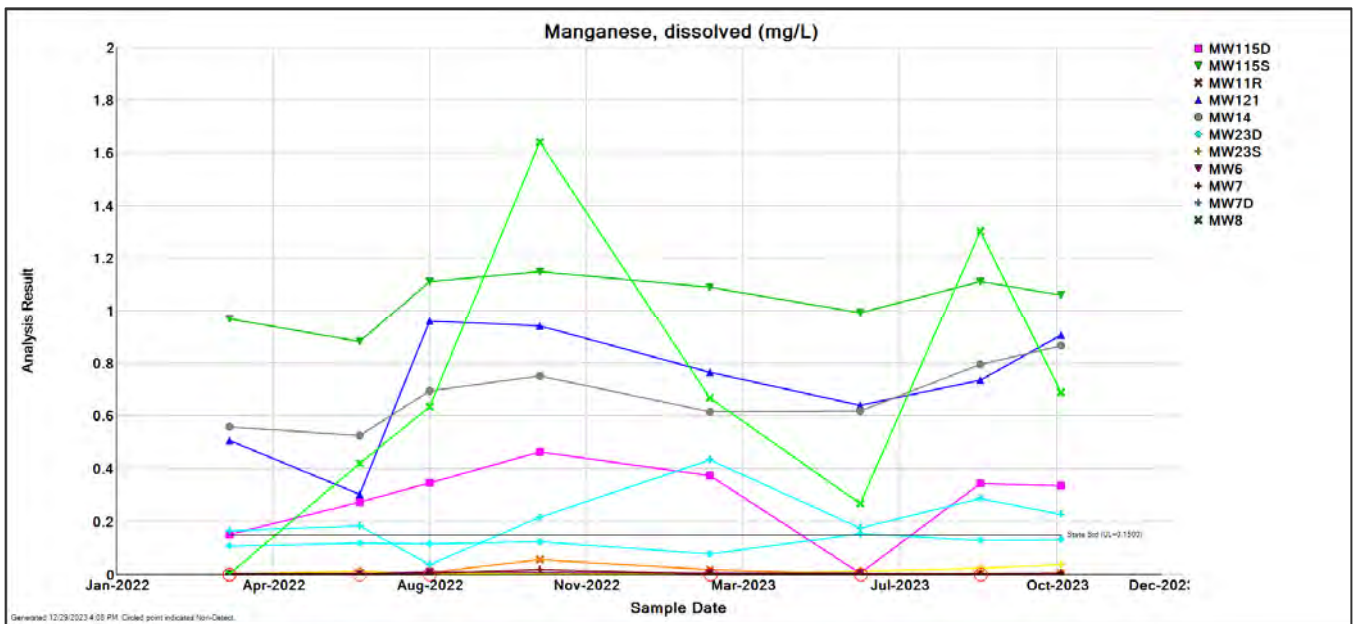


Figure 3-11. **Manganese** concentrations during the reporting period (2022-2023) at all background and compliance wells. Circled results indicate non-detects.

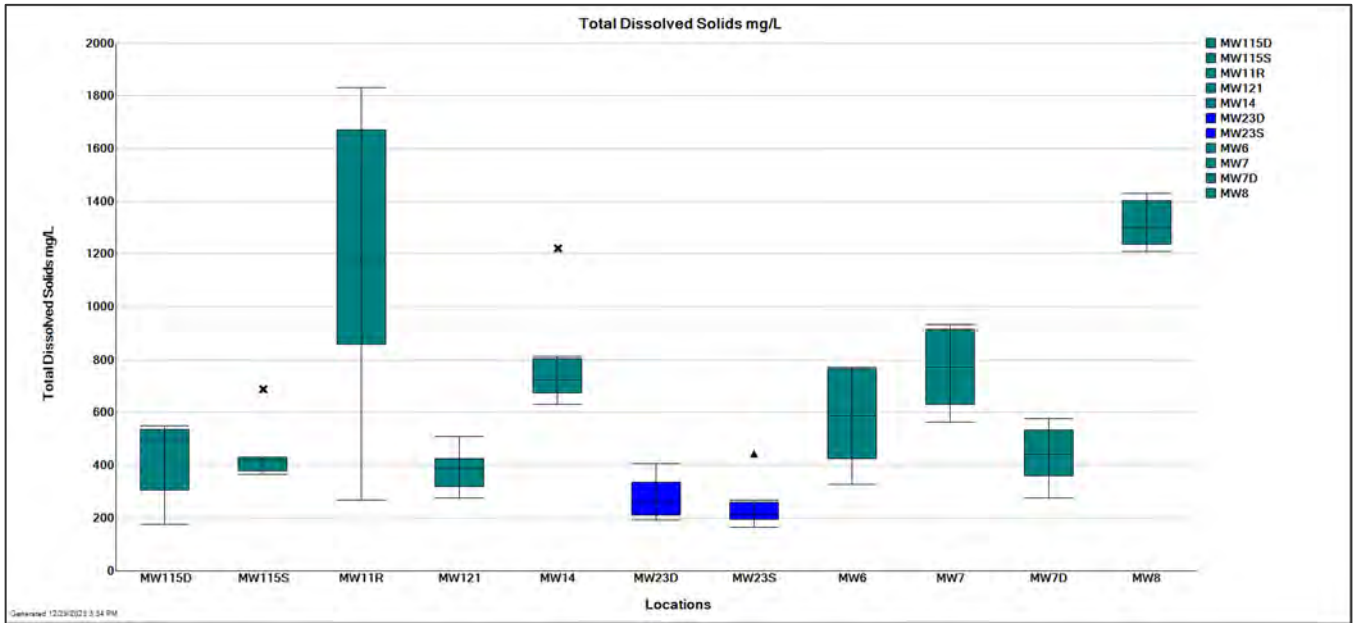


Figure 3-12. Box-whisker plot showing distribution of **total dissolved solids** concentration by monitoring well for data collected in 2022 and 2023. Note: Box-whisker plots for background wells are blue and box-whisker plots for compliance wells are green.

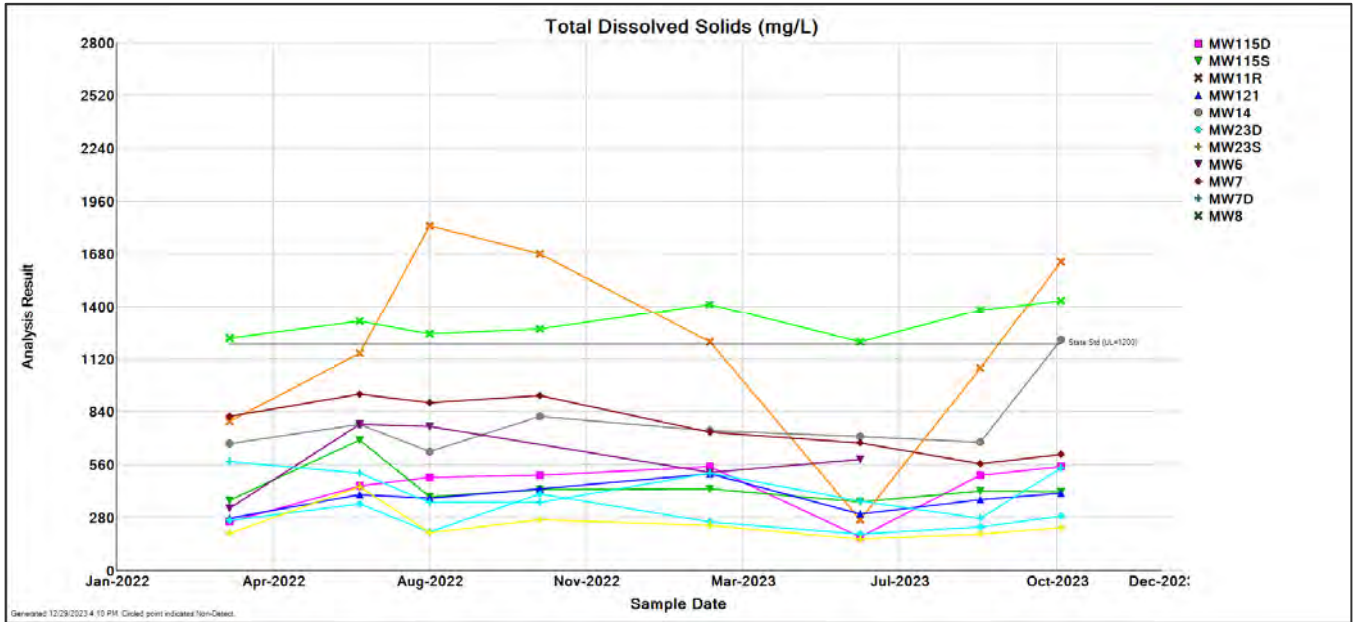


Figure 3-13. Total dissolved solids concentrations during the reporting period (2022-2023) at all background and compliance wells.

APPENDIX A
GROUNDWATER MONITORING RESULTS 2022-2023

**Hutsonville Ash Impoundment
Analysis Results by Date (column) and Parameter (row)**

Date Range: 01/01/2022 to 12/31/2023

Well: MW6

	3/21/2022	6/20/2022	8/8/2022	2/20/2023	6/5/2023
Ag, diss, mg/L	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
As, diss, mg/L	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
B, diss, mg/L	0.5800	4.9100	4.8800	1.1800	1.4800
Ba, diss, mg/L	0.027	0.033	0.066	0.034	0.033
Be, diss, mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Cd, diss, mg/L	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Cl, diss, mg/L	15.6	13.4	12.5	7.8	10.0
CN, total, mg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Co, diss, mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Cr, diss, mg/L	0.0003	<0.0010	<0.0010	<0.0010	<0.0010
Cu, diss, mg/L	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
F, diss, mg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Fe, diss, mg/L	0.085	<0.010	<0.010	<0.010	<0.010
GW Depth (TOC), ft	5.53	10.60	11.52	12.63	12.80
GW Elv, ft		432.57	431.65	430.54	430.37
Hg, diss, mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Mn, diss, mg/L	<0.0010	<0.0010	0.0085	0.0034	0.0032
Ni, diss, mg/L	0.0002	0.0011	0.0010	0.0007	0.0008
NO3, diss, mg/L	1.130	2.480	2.560	0.269	1.000
Pb, diss, mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
pH (field), STD	7.08	6.60	6.54	6.82	6.82
Sb, diss, mg/L	<0.002	<0.002	<0.002	<0.002	<0.002
Se, diss, mg/L	0.0024	0.0014	0.0011	0.0044	0.0038
SO4, diss, mg/L	164.0	262.0	280.0	212.0	183.0
Spec. Cond. (field), micromho	751	863	1110	565	711
TDS, mg/L	328	772	760	520	588
Temp (Fahrenheit), degrees F	50.8	59.8	68.4	53.5	63.3
Tl, diss, mg/L	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Zn, diss, mg/L	<0.01	<0.01	<0.01	0.01	<0.01

**Hutsonville Ash Impoundment
Analysis Results by Date (column) and Parameter (row)**

Date Range: 01/01/2022 to 12/31/2023

Well: MW8

	3/21/2022	6/20/2022	8/8/2022	10/24/2022	2/20/2023	6/5/2023	8/28/2023	10/23/2023
Ag, diss, mg/L	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
As, diss, mg/L	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
B, diss, mg/L	17.2000	16.9000	15.5000	15.2000	15.7000	18.4000	17.1000	17.4000
Ba, diss, mg/L	0.017	0.015	0.016	0.020	0.018	0.016	0.019	0.017
Be, diss, mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Cd, diss, mg/L	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Cl, diss, mg/L	14.1	11.0	11.0	12.7	11.4	11.0	13.2	9.4
CN, total, mg/L	0.03	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Co, diss, mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Cr, diss, mg/L	0.0004	<0.0010	<0.0010	<0.0010	<0.0010	0.0029	<0.0010	<0.0010
Cu, diss, mg/L	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
F, diss, mg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Fe, diss, mg/L	0.116	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
GW Depth (TOC), ft	10.66	15.44	18.46	19.40	15.78	17.93	18.88	19.65
GW Elv, ft		428.21	425.19	424.25	427.87	425.72	424.77	424.00
Hg, diss, mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Mn, diss, mg/L	0.0021	0.4190	0.6350	1.6400	0.6670	0.2680	1.3000	0.6880
Ni, diss, mg/L	0.0042	0.0070	0.0066	0.0074	0.0068	0.0058	0.0066	0.0063
NO3, diss, mg/L	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100
Pb, diss, mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
pH (field), STD	7.21	6.82	6.84	6.83	6.84	7.02	6.97	6.88
Sb, diss, mg/L	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Se, diss, mg/L	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0015
SO4, diss, mg/L	552.0	459.0	793.0	635.0	673.0	860.0	593.0	611.0
Spec. Cond. (field), micromho	1620	1320	1540	1450	1230	1440	1580	1510
TDS, mg/L	1230	1320	1250	1280	1410	1210	1380	1430
Temp (Fahrenheit), degrees F	59.8	63.5	69.2	68.4	60.5	65.8	70.6	53.2
Tl, diss, mg/L	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Zn, diss, mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	<0.01

**Hutsonville Ash Impoundment
Analysis Results by Date (column) and Parameter (row)**

Date Range: 01/01/2022 to 12/31/2023

Well: MW11R

	3/21/2022	6/20/2022	8/8/2022	10/24/2022	2/20/2023	6/5/2023	8/28/2023	10/23/2023
Ag, diss, mg/L	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
As, diss, mg/L	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
B, diss, mg/L	2.8000	2.9600	8.6500	16.2000	17.9000	0.7600	4.1700	20.3000
Ba, diss, mg/L	0.060	0.054	0.072	0.066	0.064	0.023	0.130	0.100
Be, diss, mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Cd, diss, mg/L	<0.0003	<0.0003	0.0006	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Cl, diss, mg/L	16.6	11.4	7.7	8.0	7.5	23.9	12.7	13.0
CN, total, mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Co, diss, mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Cr, diss, mg/L	0.0004	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Cu, diss, mg/L	<0.0005	<0.0005	<0.0005	<0.0005	0.0058	<0.0005	<0.0005	<0.0005
F, diss, mg/L	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	<0.1	<0.1
Fe, diss, mg/L	0.107	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
GW Depth (TOC), ft	5.20	9.12	10.88	14.32	13.40	10.98	13.98	14.56
GW Elv, ft		433.89	432.13	428.69	429.61	432.03	429.03	428.45
Hg, diss, mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Mn, diss, mg/L	<0.0010	0.0031	0.0060	0.0563	0.0180	<0.0010	<0.0010	0.0051
Ni, diss, mg/L	0.0015	0.0027	0.0020	0.0019	0.0034	0.0010	<0.0003	0.0015
NO3, diss, mg/L	1.770	4.000	0.947	0.569	1.530	5.150	0.249	<0.100
Pb, diss, mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
pH (field), STD	6.63	6.21	6.47	6.76	6.73	7.18	6.91	6.82
Sb, diss, mg/L	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Se, diss, mg/L	<0.0005	<0.0005	<0.0005	<0.0005	0.0019	0.0009	0.0014	<0.0005
SO4, diss, mg/L	372.0	453.0	1160.0	<0.5	1010.0	42.3	996.0	1440.0
Spec. Cond. (field), micromho	1130	1070	2340	1630	1350	419	1720	1630
TDS, mg/L	788	1150	1830	1680	1210	268	1070	1640
Temp (Fahrenheit), degrees F	50.9	61.1	71.9	66.3	55.5	62.4	71.7	54.7
Tl, diss, mg/L	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Zn, diss, mg/L	<0.01	0.01	0.02	<0.01	0.02	<0.01	<0.01	<0.01

APPENDIX B
SITE INSPECTION REPORTS

Hutsonville Power Station Ash Pond D Closure Cap - Post-Closure Care Plan

Quarterly Site Inspection Checksheet

Date	02/16/2023
Inspector	LAM
Temperature	54 °F
Weather	Cloudy

	Item	Condition Code *	Comments
Pond Cap	Vent Pipes	GC	Vent holes clear of pipes inspected, no weed overgrowth inside cement vent barriers.
	Drainage Berms	GC	No excessive standing water; no eroded or scoured drainage channels.
	Vegetation	GC	No excessive vegetation overgrowth; no bare patches in excess of 100 sq. ft. Last mowing was 8/29/22.
	Erosion on Cap	GC	No erosion or gullies 6 inches or deeper on cap.
	Liner	GC	No exposed liner; no visual indication of rips, tears, punctures, or other damage to liner.
	Water Control Features (berms, vegetated flumes, etc.)	GC	Small amount of dead vegetation in drainage channels but does not affect drainage.
	Other		
Embankment	Vegetation	GC	No overgrowth or bare patches on embankments.
	Liner	GC	No exposure
	Erosion	GC	No erosion or gullies 6 inches or deeper on embankments or toe.
	Fencing	GC	Fencing around site perimeter is secure.
	Drainage Channels (rip-rap, paved flumes, etc.)	GC	No overgrowth; rip-rap good condition. Last herbicide application was 9/21/22.
	Other		
Groundwater Collection Trench and Discharge System	Control Panels	GC	Exterior of panels in good condition.
	Drainage Sumps / Manholes	GC	Lids are secure.
	Pumps	GC	Pumps replaced Oct 3, 2022.
	Groundwater Monitoring Wells	GC	Accessible; no excessive weed growth; no flooding. Blankenship weed-wacked on 8/3/22.
	Flow Meter Totalizer	GC	Operational.
	Diver-Mate Data Collector (data download)	GC	Operational.
	Other		

Condition Codes

IM = Item needing Immediate Maintenance. Remediation should be completed within 1 month.

MM = Item needing Minor Maintenance and/or repairs within the year.

OB = Condition requires regular observation to ensure that the condition does not become worse.

GC = Good Condition. Working properly.

NE = No Evidence of a problem.

NI = Not Inspected. Reason should be stated in comment

Hutsonville Power Station – Ash Pond D

West Embankment (facing S)

North end



Center



South end



East (river) embankment (facing N)



East (river) embankment (facing S)



Outfall drainage trench (facing N)



Outfall Discharge (facing east)



South letdown



South embankment and outfall trench (facing E)



Hutsonville Power Station Ash Pond D Closure Cap - Post-Closure Care Plan

Quarterly Site Inspection Checksheet

Date	06/30/2023
Inspector	LAM
Temperature	83 °F
Weather	Sunny

	Item	Condition Code *	Comments
Pond Cap	Vent Pipes	GC	Vent holes clear of pipes inspected, no weed overgrowth inside cement vent barriers.
	Drainage Berms	GC	No excessive standing water; no eroded or scoured drainage channels.
	Vegetation	GC	No excessive vegetation overgrowth; no bare patches in excess of 100 sq. ft. Inspection occurred during first mowing from 6/28/23 - 7/7/23. Herbicide application scheduled for 7/22/23.
	Erosion on Cap	GC	No erosion or gullies 6 inches or deeper on cap.
	Liner	GC	No exposed liner; no visual indication of rips, tears, punctures, or other damage to liner.
	Water Control Features (berms, vegetated flumes, etc.)	GC	Small amount of dead vegetation in drainage channels but does not affect drainage.
	Other		
Embankment	Vegetation	GC	No overgrowth or bare patches on embankments.
	Liner	GC	No exposure
	Erosion	GC	No erosion or gullies 6 inches or deeper on embankments or toe.
	Fencing	GC	Fencing around site perimeter is secure.
	Drainage Channels (rip-rap, paved flumes, etc.)	GC	No overgrowth; rip-rap good condition. Last herbicide application was 9/21/22.
	Other		
Groundwater Collection Trench and Discharge System	Control Panels	GC	Exterior of panels in good condition.
	Drainage Sumps / Manholes	GC	Lids are secure.
	Pumps	GC	Pumps replaced Oct 3, 2022.
	Groundwater Monitoring Wells	GC	Accessible; no excessive weed growth; no flooding. Blankenship weed-wacked on 8/3/22.
	Flow Meter Totalizer	MM	Communication from flow totalizer stopped communicating early spring. In process of upgrading modem to 5G.
	Diver-Mate Data Collector (data download)	MM	See above
	Other		

Condition Codes

IM = Item needing Immediate Maintenance. Remediation should be completed within 1 month.

MM = Item needing Minor Maintenance and/or repairs within the year.

OB = Condition requires regular observation to ensure that the condition does not become worse.

GC = Good Condition. Working properly.

NE = No Evidence of a problem.

NI = Not Inspected. Reason should be stated in comment

Hutsonville Power Station – Ash Pond D

West Embankment (facing S)

North end



Center



South end



East (river) embankment (facing S)



Outfall Discharge (facing east)



South letdown



South embankment and outfall trench (facing E)



Hutsonville Power Station Ash Pond D Closure Cap - Post-Closure Care Plan

Quarterly Site Inspection Checksheet

Date	09/11/2023
Inspector	LAM
Temperature	81 °F
Weather	Cloudy

	Item	Condition Code *	Comments
Pond Cap	Vent Pipes	GC	Vent holes clear of pipes inspected, no weed overgrowth inside cement vent barriers.
	Drainage Berms	GC	No excessive standing water; no eroded or scoured drainage channels.
	Vegetation	GC	Inspection occurred after second mowing and herbicide application which was completed in early September.
	Erosion on Cap	GC	No erosion or gullies 6 inches or deeper on cap.
	Liner	GC	No exposed liner; no visual indication of rips, tears, punctures, or other damage to liner.
	Water Control Features (berms, vegetated flumes, etc.)	GC	Small amount of dead vegetation in drainage channels but does not affect drainage.
	Other		
Embankment	Vegetation	GC	No overgrowth or bare patches on embankments.
	Liner	GC	No exposure
	Erosion	GC	No erosion or gullies 6 inches or deeper on embankments or toe.
	Fencing	GC	Fencing around site perimeter is secure.
	Drainage Channels (rip-rap, paved flumes, etc.)	GC	No overgrowth; rip-rap good condition.
	Other		
Groundwater Collection Trench and Discharge System	Control Panels	GC	Exterior of panels in good condition.
	Drainage Sumps / Manholes	GC	Lids are secure.
	Pumps	GC	Pumps replaced Oct 3, 2022.
	Groundwater Monitoring Wells	GC	Accessible; no excessive weed growth; no flooding. Blankenship weed-wacked on 8/3/22.
	Flow Meter Totalizer	MM	Communication from flow totalizer stopped communicating early spring. In process of upgrading modem.
	Diver-Mate Data Collector (data download)	MM	See above.
	Other		

Condition Codes

IM = Item needing Immediate Maintenance. Remediation should be completed within 1 month.

MM = Item needing Minor Maintenance and/or repairs within the year.

OB = Condition requires regular observation to ensure that the condition does not become worse.

GC = Good Condition. Working properly.

NE = No Evidence of a problem.

NI = Not Inspected. Reason should be stated in comment

Hutsonville Power Station – Ash Pond D

West Embankment (facing S)

North end



Center



South end



East (river) embankment (facing N)



East (river) embankment (facing S)



Outfall drainage trench (facing N)



Outfall drainage trench – Minor damage from mower



South letdown



South embankment and outfall trench (facing E)



CAP Top (facing S)



Hutsonville Power Station Ash Pond D Closure Cap - Post-Closure Care Plan

Quarterly Site Inspection Checksheet

Date	12/19/2023
Inspector	AMM
Temperature	21 °F
Weather	Sunny

	Item	Condition Code *	Comments
Pond Cap	Vent Pipes	GC	Vent holes clear of pipes inspected, no weed overgrowth inside cement vent barriers.
	Drainage Berms	GC	No excessive standing water; no eroded or scoured drainage channels.
	Vegetation	GC	No overgrowth or bare patches on pond cap.
	Erosion on Cap	GC	No erosion or gullies 6 inches or deeper on cap.
	Liner	GC	No exposed liner; no visual indication of rips, tears, punctures, or other damage to liner.
	Water Control Features (berms, vegetated flumes, etc.)	GC	Small amount of dead vegetation in drainage channels but does not affect drainage.
	Other		
Embankment	Vegetation	GC	No overgrowth or bare patches on embankments.
	Liner	GC	No exposure
	Erosion	GC	No erosion or gullies 6 inches or deeper on embankments or toe.
	Fencing	GC	Fencing around site perimeter is secure.
	Drainage Channels (rip-rap, paved flumes, etc.)	GC	No overgrowth; rip-rap good condition.
	Other		
Groundwater Collection Trench and Discharge System	Control Panels	GC	Exterior of panels in good condition.
	Drainage Sumps / Manholes	GC	Lids are secure.
	Pumps	GC	Pumps replaced Oct 3, 2022.
	Groundwater Monitoring Wells	GC	Accessible; no excessive weed growth; no flooding.
	Flow Meter Totalizer	GC	Modem has been upgraded.
	Diver-Mate Data Collector (data download)	GC	See above.
	Other		

Condition Codes

IM = Item needing Immediate Maintenance. Remediation should be completed within 1 month.

MM = Item needing Minor Maintenance and/or repairs within the year.

OB = Condition requires regular observation to ensure that the condition does not become worse.

GC = Good Condition. Working properly.

NE = No Evidence of a problem.

NI = Not Inspected. Reason should be stated in comment

Hutsonville Power Station – Ash Pond D

West Embankment (facing S)

North end



Center



South end



East (river) embankment (facing N)



East (river) embankment (facing S)



Outfall drainage trench (facing N)



South embankment and outfall trench (facing E)



CAP Top (facing S)



APPENDIX C
STATISTICAL OUTPUT

APPENDIX C1
TEST DESCRIPTIONS

MANAGES

Groundwater Data Management and Evaluation
Software

Software Manual Product ID #1012581

Software Manual, February 2010

EPRI Project Manager
K. Ladwig

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10

STATISTICAL ANALYSIS

Stand-Alone Statistical Tests

Statistical Evaluation Report

The Statistical Evaluation Report is comprised of a series of subreports as described below.

User Selections:

- One location.
- Sample date range for data selection.
- Interval length: the length of the averaging period in months (1,2,3,4, or 6).
- One parameter.
- Non-detect processing: multiplier between 0 and 1.
- One-sided confidence ($1 - \alpha$) level – 0.90, 0.95 or 0.99.
- Limit type: used in the statistical overview to determine exceedances.

Mann-Kendall Trend and Seasonal Analysis Tests

The Mann-Kendall test for trend is insensitive to the presence or absence of seasonality. The test is non-parametric and does not assume any type of data distribution. Nonetheless, two forms of the test are provided in MANAGES, one ignoring data seasonality even if it is present, and one considering data seasonality. In the test, the null hypothesis, H_0 , is that the Sen trend is zero, and the alternate hypothesis, H_a , is that the trend is non-zero.

In general, the Mann-Kendall test considering seasonality indicates a larger range for allowable Sen estimate of trend when seasonality is actually present than the range indicated by the test performed ignoring seasonality.

In the Mann-Kendall Trend Analysis, available in under the Statistical Evaluation Report and in the Statistical Procedure for Detection Monitoring, and Mann-Kendall Seasonal Analysis, found under the Statistical Evaluation Report, MANAGES first calculates the Sen slope and the upper and lower confidence limits of the Sen slope, and then determines whether the Sen slope is statistically significant. Slope is statistically significant if it is non-zero.

<p>Mann-Kendall Test for Sen Slope Significance – a two-sided, non-parametric method for data sets as small as 10, unless there are many tied (e.g., equal, NDs are treated as ties) values (Gilbert, 1987; p. 208)</p>	
<p>Indicator Function</p> <p>$\text{sgn}(x_{ij} - x_{jk})$</p>	<p>$= 1$ if $(x_{ij} - x_{jk}) > 0$</p> <p>$= 0$ if $(x_{ij} - x_{jk}) = 0$</p> <p>$= -1$ if $(x_{ij} - x_{jk}) < 0$</p> <p>where $x_{i1}, x_{i2}, \dots, x_{in}$ are the time ordered data (n_i is total of data in the i-th season).</p>
<p>Mann-Kendall Statistic, S_i</p>	$= \sum_{k=1}^{n_i-1} \sum_{j=k+1}^{n_i} \text{sgn}(x_{ij} - x_{jk})$
<p>Variance of S_i $\text{VAR}(S_i)$</p>	$\text{VAR}(S_i) = \frac{1}{18} \left\{ n_i(n_i - 1)(2n_i + 5) - \sum_{p=1}^{g_i} t_{ip}(t_{ip} - 1)(2t_{ip} + 5) - \sum_{q=1}^{h_i} u_{iq}(u_{iq} - 1)(2u_{iq} + 5) \right\}$ $+ \frac{\sum_{p=1}^{g_i} t_{ip}(t_{ip} - 1)(t_{ip} - 2) \sum_{q=1}^{h_i} u_{iq}(u_{iq} - 1)(u_{iq} - 2)}{9n_i(n_i - 1)(n_i - 2)}$ $+ \frac{\sum_{p=1}^{g_i} t_{ip}(t_{ip} - 1) \sum_{q=1}^{h_i} u_{iq}(u_{iq} - 1)}{2n_i(n_i - 1)}$ <p>The variable g_i is the number of tied groups (equal-valued) data in the i-th season, t_{ip} is the number of tied data in the p-th group for the i-th season, h_i is the number of sampling times (or time periods) in the i-th season that contain multiple data, u_{iq} is the number of multiple data in the q-th time period in the i-th season, and n_i is the number of data values in the i-th season.</p>

<p>Test Statistic, Z</p>	<p>If $S' = \sum_{i=1}^K S_i$, where K is the number of seasons, then the test statistic Z is computed as:</p> $Z = \begin{cases} \frac{S'-1}{[\text{VAR}(S')]^{1/2}} & \text{iff } S' > 0 \\ 0 & \text{iff } S' = 0 \\ \frac{S'+1}{[\text{VAR}(S')]^{1/2}} & \text{iff } S' < 0 \end{cases}$ <p>Where “iff” is an acronym meaning: if-and-only-if. A positive Z value means an upward trend and a negative Z value means a negative trend.</p>
<p>Hypothesis Test: H_0 = no trend H_a = trend present This is a two-sided test at the α significance level.</p>	<p>Accept the null hypothesis H_0 of no trend</p> <p>if $Z \leq Z_{1-\alpha/2}$</p> <p>Reject the null hypothesis H_0</p> <p>if $Z > Z_{1-\alpha/2}$</p> <p>where $Z_{1-\alpha/2}$ is obtained from Table A1 in Gilbert (1987; p. 254).</p>

Kruskal-Wallis Analysis (Test for Seasonality)

To perform the Kruskal-Wallis test for data seasonality, data points are first segmented according to season (Gilbert, 1987). The null hypothesis, H_0 , is that all seasons have the same mean value. The alternative hypothesis, H_a , is that at least one season has a mean larger or smaller than the mean of at least one other season. Montgomery et al. (1987) provide additional information on groundwater data seasonality. This is a two-sided, non-parametric test.

In MANAGES, the Kruskal-Wallis Test for Seasonality is found under Data Review // Non-Parametric Methods // Kruskal-Wallis Analysis. It determines whether the seasonal means for the specified parameter at the specified location are statistically the same.

	or $Z_i \geq SCL$.
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Outlier Tests

Outlier tests are useful in detecting inconsistencies of measurement within a data set. An outlier is defined as an observation that appears to deviate markedly from other values of a sample set. There are many possible reasons for the presence of an outlier, including 1) the presence of a true but extreme value from a single population, resulting from random variability inherent in the data; 2) an improper identification of the underlying distribution describing the population from which the sample set comes from; 3) the occurrence of some unknown event(s) such as a spill, creating a mixture of two or more populations; 4) a gross deviation from prescribed sampling procedures or laboratory analysis; 5) a transcription error in the data value or data unit of measurement.

USEPA (1989; p. 8-11) states that the purpose of a test for outliers is to determine whether or not there is statistical evidence that an observation that appears extreme does not fit the distribution of the rest of the data. If an observation is identified as an outlier, then steps need to be taken to determine whether it is the result of an error or a valid extreme observation. If a true error, such as in transcription, dilution, or analytical procedure, can be identified, then the suspect value should be replaced with its corrected value. If the source of the error can be determined but no correction is possible, then the observation is deleted and the reason for deletion is reported along with any statistical analysis. If no source of error can be documented, then it must be assumed that the observation is a true but extreme value of the data set. If this is the case, the outlier observation(s) must not be altered or excluded from any statistical analysis. Identification of an observation as an outlier but with no error documented could be used to suggest resampling to confirm the value (USEPA, 1989; p. 8-13).

The outlier tests provided in MANAGES are based on either the single outlier test of Grubbs (1969), which is used by USEPA (1989; pp. 8-10 to 8-13) or the single outlier test of Dixon (1951, 1953), which is used by USEPA (2000; pp. 4-24) and by ASTM (1998). The outlier tests assume the data come from a normal distribution. Only one outlier, either an extreme low or an extreme high, can be detected during a single analysis of a data set. Additional outliers can be detected by temporarily removing a previously detected outlier from a data set and then repeating the test on the remaining, reduced, data set. During each pass of the outlier test, the sample mean, standard deviation, and sample size used in the test statistics are computed using only the data remaining in the set. The process can be continued until there is either an insufficient amount of data remaining (a minimum of 3 values) or when no additional outliers are found. When using MANAGES, the user will be asked how many outliers are to be checked and it will then automatically perform all of the recursive calls and data reductions with the Grubbs or Dixon routine. When done, a report can be generated that will show each outlier marked with a flag indicating the sequential order in which the outliers were identified.

Critical values used in the one-sided Grubbs test are taken directly from those in Grubbs and Beck (1972) for sample sizes smaller than 147 observations. Critical values for sample sizes larger than 147 were generated numerically using a Monte Carlo routine, where each sampling event was simulated 100,000 times. Sample sizes ranging from 148 to 5,000 were used and then their resultant test statistic T_n curve fitted at specific significance levels. By this method, it was possible to match Grubbs results to at least four significant digits for corresponding tabulated values.

Critical values used in the one-sided Dixon outlier test are taken directly from tables given in Dixon (1951), Dixon (1953; page 89), and USEPA (2000; p. A-5, Table A-3). The critical values were then curve fitted for every sample size between 3 and 25 as a function of the significance level. By this method, it was possible to match Dixon's results to at least four significant digits for corresponding tabulated values. Note that the Dixon test assumes the data are either normally or lognormally distributed. Hence, sample sizes can only range between 3 and 25, inclusive. Dixon never developed an outlier test for sample sizes larger than 25.

User Selections:

- One or up to 100 locations: a separate test is performed for each location.
- One or up to 100 parameters: a separate test is performed for each parameter.
- Evaluation date range.
- Confidence $(1 - \alpha)$ level: 0.90, 0.95 or 0.99.
- Non-detect processing: multiplier between 0 and 1.
- Data transformation option: none and log (base e).
- Number of outliers: one, two, first 5%, first 10%. Selecting any option other than one causes MANAGES to rerun the test, with outliers from prior tests removed, until either no outliers are detected or the specified number of outliers are detected.

Technical Details

<p>Grubbs Outlier Test – The Grubbs outlier test determines whether there is statistical evidence that an observation does not fit the remaining data (USEPA, 1989; p. 8-11). This significance test looks at either the highest or the lowest observation in normal samples.</p>	
<p>The number of observations taken during a specified scoping period; n</p>	<p>n</p>

Statistical Analysis

<p>Mean of the observed data during the scoping period; \bar{X}</p>	$\bar{X} = \frac{1}{n} \sum_{i=1}^n X_i$ <p>where X_i is the i-th observation.</p>
<p>Standard deviation of observed data; S_x.</p>	$S_x = \sqrt{\frac{1}{(n-1)} \sum_{i=1}^n (X_i - \bar{X})^2}$
<p>Test statistics: T_l & T_n</p>	<p>Sort the data into ascending order, then compute the statistics</p> $T_l = (\bar{X} - X_l) / S_x$ $T_n = (X_n - \bar{X}) / S_x$ <p>where X_l is the smallest value of the n observations and X_n is the largest value of the n observations.</p>
<p>One-sided test with a $(1-\alpha)$ confidence level that there is a single extreme outlier within the n observations.</p>	<p>Grubbs single, one-sided test of either an extreme low outlier :</p> $X_l \text{ is an outlier if } T_l \geq T_{cr(1-\alpha,n)}$ <p>or an extreme high outlier:</p> $X_n \text{ is an outlier if } T_n \geq T_{cr(1-\alpha,n)}$ <p>The function $T_{cr(1-\alpha,n)}$ is the critical value, given in Grubbs and Beck (1972; Table 1) and USEPA (1989; p. B-11, Table 8) . Note that the critical value assumes that the mean and standard deviation are computed from the sample being tested.</p>

Dixon Outlier Test – The Dixon outlier test determines whether there is statistical evidence that an extreme observation does not fit the remaining data (USEPA, 2000; p. 4-24 and ASTM D6312, 1998). This significance test looks at both the highest and the

<p>lowest observations in a sample data set. However, the routine will only perform the outlier tests if several conditions are first satisfied. For example, the Dixon outlier algorithm checks the distribution of the sample data for both normality and lognormality using the Shapiro-Wilk W-test. The outlier routine will not proceed with a data set if the W-test fails. In addition, the Dixon outlier test is limited to a minimum of 3 and a maximum sample size n of 25 data values.</p>	
<p>The number of observations taken during a specified scoping period; n</p>	<p>Number of observations, n, where</p> $3 \leq n \leq 25.$
<p>Sorting the sample data</p>	<p>Sort the data into ascending order, with the minimum data value $X_{(1)}$ first and the maximum data value $X_{(n)}$ last. Use the natural log of the data values if data are lognormally distributed, i.e., $X_{(j)} = \text{Ln}[X_{(j)}]$.</p>
<p>Goodness-of fit tests</p>	<p>After temporarily excluding either the minimum or maximum value of the data set, the Shapiro-Wilk's W-test is used to determine if the remaining $n-1$ values are normally or lognormally distributed. If not, the Dixon outlier test can't be used.</p>
<p>Test statistic, T_s, for the minimum data value</p>	<p>Compute the T_s test statistic for $X_{(1)}$ as an outlier:</p> $T_s = \frac{X_{(2)} - X_{(1)}}{X_{(n)} - X_{(1)}} \quad \text{for } 3 \leq n \leq 7$ $T_s = \frac{X_{(2)} - X_{(1)}}{X_{(n-1)} - X_{(1)}} \quad \text{for } 8 \leq n \leq 10$ $T_s = \frac{X_{(3)} - X_{(1)}}{X_{(n-1)} - X_{(1)}} \quad \text{for } 11 \leq n \leq 13$ $T_s = \frac{X_{(3)} - X_{(1)}}{X_{(n-2)} - X_{(1)}} \quad \text{for } 14 \leq n \leq 25.$
<p>Test statistic, T_s, for the maximum data value</p>	<p>Compute the T_s test statistic for $X_{(n)}$ as an outlier:</p>

	$T_s = \frac{X_{(n)} - X_{(n-1)}}{X_{(n)} - X_{(1)}} \quad \text{for } 3 \leq n \leq 7$ $T_s = \frac{X_{(n)} - X_{(n-1)}}{X_{(n)} - X_{(2)}} \quad \text{for } 8 \leq n \leq 10$ $T_s = \frac{X_{(n)} - X_{(n-2)}}{X_{(n)} - X_{(2)}} \quad \text{for } 11 \leq n \leq 13$ $T_s = \frac{X_{(n)} - X_{(n-2)}}{X_{(n)} - X_{(3)}} \quad \text{for } 14 \leq n \leq 25.$
<p>Critical value T_c</p>	<p>USEPA (2000; p. A-5, Table A-3) lists the critical values of the Dixon test as a function of sample size for a one-sided extreme value test at the significance levels α of 0.1, 0.05, and 0.01.</p>
<p>One-sided test with a $(1 - \alpha)$ confidence level that there is a single extreme outlier within the n observations.</p>	<p>Dixon's single, one-sided test for statistical evidence of either an extreme low-valued outlier:</p> <p>$X_{(1)}$ is an outlier if $T_s \geq T_c$</p> <p>or an extreme high-valued outlier:</p> <p>$X_{(n)}$ is an outlier if $T_s \geq T_c$.</p> <p>The function T_c is the critical value, given in Dixon (1953; page 89) and USEPA (2000; p. A-5, Table A-3). Note that the critical value assumes that the data are either normally or lognormally distributed.</p>

Other Statistical Calculations Used in MANAGES

Sen Estimate of Slope

The Sen estimate of slope is the median of all slopes between all possible unique pairs of individual data points in the time period being analyzed (Gilbert, 1987). The slopes represent the rate of change of the measured parameter, with the y-axis being the parameter value and the x-axis being calendar days. Sen’s estimate of slope is a non-parametric estimator of trend. The method is robust, and fairly insensitive to the presence of a small fraction of outliers and non-detect data values. In contrast, linear regression and other least squares estimators of slope are significantly more sensitive, and more likely to give erroneous slope indications, even when only a few outlier values are present.

When data averaging is not activated, the Sen slope is calculated using individual data points and actual sampling dates. When data averaging is activated, multiple data points within each specified season period are reduced to one data point by arithmetic averaging over each of the season periods. These averaged values are then assigned to the day that corresponds to the middle of that season’s period.

The approximate lower and upper confidence limits for the Sen slope can also be calculated using normal theory (Gilbert, 1987). It should be noted that confidence limits for the Sen slope are not necessarily symmetrical about the estimated slope since ranked values of slope are used in the calculation.

MANAGES calculates Sen slope in the Sen Slope Overlay Graph, Statistical Summary reports and in the two Mann-Kendall tests performed under the Statistical Evaluation Report.

<p>Sen’s Estimate of Slope – two-sided, non-parametric method that calculates the trend of a single data series. It is less sensitive to outliers and non-detect values than linear regression (Gilbert, 1987; p. 217).</p>	
<p>Slope, Q</p>	$= \frac{X_{i'} - X_i}{i' - i}$ <p>where $X_{i'}$ and X_i are data values at times i' and i, respectively, and where $i' > i$. Typically, i' and i are expressed in units of either days for trend analysis or years for seasonal analysis.</p>
<p>N'</p>	<p>Number of unique data point pairs that can be made for the observations in the data set, for $i' > i$. For n monitoring events, N' is given as:</p> $N' = n(n-1)/2$

<p>Sen's Slope Estimate</p>	<p>Sen's slope estimator = median slope</p> <p>= $Q_{[(N'+1)/2]}$ if N' is odd</p> <p>= $\frac{1}{2}(Q_{[N'/2]} + Q_{[(N'+2)/2]})$ if N' is even</p> <p>where the Q values have first been ranked from smallest to largest.</p>
<p>$Z_{1-\alpha/2}$</p>	<p>Statistic for the cumulative normal distribution (Gilbert, 1987; p. 254) for the two-sided, α significance level.</p>
<p>Variance estimate of the Mann-Kendall S Statistic, VAR(S)</p>	<p>VAR(S)</p> <p>= $\frac{1}{18}[n(n-1)(2n+5) - \sum_{p=1}^g t_p(t_p-1)(2t_p+5)]$</p> <p>where g is the number of tied groups, t_p is the number of data in the pth group, and n is the number of data values.</p>
<p>C_α</p>	<p>= $Z_{1-\alpha/2} \sqrt{\text{VAR}(S)}$</p>
<p>Sen's Slope, a two-sided test at the α significance level</p>	<p>$M_1 = \frac{(N' - C_\alpha)}{2}$</p> <p>$M_2 = \frac{(N' + C_\alpha)}{2}$</p> <p>Lower limit of confidence interval is the M_1-th largest slope, and upper limit of confidence interval is the $(M_2 + 1)$-th largest of the N' ordered slope estimates.</p>

Coefficient of Skewness for Normality

The coefficient of skewness is another measure for data normality (Gilbert, 1987). MANAGES provides the value of the coefficient of skewness in the Statistical Evaluation Report, Statistical Overview. Additional information on data normality is given by Montgomery, et al. (1987).

APPENDIX C2
OUTLIER TEST

Hutsonville Ash Impoundment Outlier Analysis Results

User Supplied Information

Date Range: 01/01/1984 to 10/23/2023

LT Multiplier: x 0.50

Confidence Level: 95%

Number of Outliers: One Outlier

Transform: None

Antimony, dissolved, mg/L

Location: MW115D

Mean of all data: 0.00108

Standard Deviation of all data: 0.00101

Largest Observation Concentration of all data: $X_n = 0.00200$

Test Statistic, high extreme of all data: $T_n = 0.917$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
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No Outliers

Antimony, dissolved, mg/L

Location: MW115S

Mean of all data: 0.00108

Standard Deviation of all data: 0.00101

Largest Observation Concentration of all data: $X_n = 0.00200$

Test Statistic, high extreme of all data: $T_n = 0.917$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
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No Outliers

Antimony, dissolved, mg/L

Location: MW11R

Mean of all data: 0.00129

Standard Deviation of all data: 0.00150

Largest Observation Concentration of all data: $X_n = 0.00900$

Test Statistic, high extreme of all data: $T_n = 5.14$

T Critical of all data: $T_{cr} = 2.96$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
04/21/2014	0.00900	False		1

Hutsonville Ash Impoundment Outlier Analysis Results

User Supplied Information

Date Range: 01/01/1984 to 10/23/2023

LT Multiplier: x 0.50

Confidence Level: 95%

Number of Outliers: One Outlier

Transform: None

Antimony, dissolved, mg/L**Location: MW121**

Mean of all data: 0.00115

Standard Deviation of all data: 0.00107

Largest Observation Concentration of all data: $X_n = 0.00400$ Test Statistic, high extreme of all data: $T_n = 2.65$ T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
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*No Outliers***Antimony, dissolved, mg/L****Location: MW14**

Mean of all data: 0.00108

Standard Deviation of all data: 0.00101

Largest Observation Concentration of all data: $X_n = 0.00200$ Test Statistic, high extreme of all data: $T_n = 0.917$ T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
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*No Outliers***Antimony, dissolved, mg/L****Location: MW23D**

Mean of all data: 0.00200

Standard Deviation of all data: 0.0

Largest Observation Concentration of all data: $X_n = 0.00200$ Test Statistic, high extreme of all data: $T_n = 0.0$ T Critical of all data: $T_{cr} = 0.0$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
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No Outliers

Hutsonville Ash Impoundment Outlier Analysis Results

User Supplied Information

Date Range: 01/01/1984 to 10/23/2023

LT Multiplier: x 0.50

Confidence Level: 95%

Number of Outliers: One Outlier

Transform: None

Antimony, dissolved, mg/L

Location: MW23S

Mean of all data: 0.00200

Standard Deviation of all data: 0.0

Largest Observation Concentration of all data: $X_n = 0.00200$

Test Statistic, high extreme of all data: $T_n = 0.0$

T Critical of all data: $T_{cr} = 0.0$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
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No Outliers

Antimony, dissolved, mg/L

Location: MW6

Mean of all data: 0.00109

Standard Deviation of all data: 0.00104

Largest Observation Concentration of all data: $X_n = 0.00300$

Test Statistic, high extreme of all data: $T_n = 1.83$

T Critical of all data: $T_{cr} = 2.90$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
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No Outliers

Antimony, dissolved, mg/L

Location: MW7

Mean of all data: 0.00119

Standard Deviation of all data: 0.00121

Largest Observation Concentration of all data: $X_n = 0.00600$

Test Statistic, high extreme of all data: $T_n = 3.99$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
04/21/2014	0.00600	False		1

Hutsonville Ash Impoundment Outlier Analysis Results

User Supplied Information

Date Range: 01/01/1984 to 10/23/2023

LT Multiplier: x 0.50

Confidence Level: 95%

Number of Outliers: One Outlier

Transform: None

Antimony, dissolved, mg/L

Location: MW7D

Mean of all data: 0.00110

Standard Deviation of all data: 0.00101

Largest Observation Concentration of all data: $X_n = 0.00200$

Test Statistic, high extreme of all data: $T_n = 0.897$

T Critical of all data: $T_{cr} = 2.96$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
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No Outliers

Antimony, dissolved, mg/L

Location: MW8

Mean of all data: 0.00127

Standard Deviation of all data: 0.00159

Largest Observation Concentration of all data: $X_n = 0.0100$

Test Statistic, high extreme of all data: $T_n = 5.51$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
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10/18/2012	0.0100	False		1
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Arsenic, dissolved, mg/L

Location: MW115D

Mean of all data: 0.00271

Standard Deviation of all data: 0.00314

Largest Observation Concentration of all data: $X_n = 0.0150$

Test Statistic, high extreme of all data: $T_n = 3.91$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
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10/18/2012	0.0150	False		1
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Hutsonville Ash Impoundment Outlier Analysis Results

User Supplied Information

Date Range: 01/01/1984 to 10/23/2023

LT Multiplier: x 0.50

Confidence Level: 95%

Number of Outliers: One Outlier

Transform: None

Arsenic, dissolved, mg/L

Location: MW115S

Mean of all data: 0.00250

Standard Deviation of all data: 0.00251

Largest Observation Concentration of all data: $X_n = 0.0150$

Test Statistic, high extreme of all data: $T_n = 4.98$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
10/18/2012	0.0150	False		1

Arsenic, dissolved, mg/L

Location: MW11R

Mean of all data: 0.000599

Standard Deviation of all data: 0.00158

Largest Observation Concentration of all data: $X_n = 0.00900$

Test Statistic, high extreme of all data: $T_n = 5.30$

T Critical of all data: $T_{cr} = 2.96$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
01/07/2013	0.00900	False		1

Arsenic, dissolved, mg/L

Location: MW121

Mean of all data: 0.00331

Standard Deviation of all data: 0.00256

Largest Observation Concentration of all data: $X_n = 0.0120$

Test Statistic, high extreme of all data: $T_n = 3.40$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
01/07/2013	0.0120	False		1

Based on Grubbs one-sided outlier test

Hutsonville Ash Impoundment Outlier Analysis Results

User Supplied Information

Date Range: 01/01/1984 to 10/23/2023

LT Multiplier: x 0.50

Confidence Level: 95%

Number of Outliers: One Outlier

Transform: None

Arsenic, dissolved, mg/L

Location: MW14

Mean of all data: 0.00126

Standard Deviation of all data: 0.00162

Largest Observation Concentration of all data: $X_n = 0.00900$

Test Statistic, high extreme of all data: $T_n = 4.77$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
01/07/2013	0.00900	False		1

Arsenic, dissolved, mg/L

Location: MW23D

Mean of all data: 0.00274

Standard Deviation of all data: 0.00172

Largest Observation Concentration of all data: $X_n = 0.00980$

Test Statistic, high extreme of all data: $T_n = 4.12$

T Critical of all data: $T_{cr} = 2.66$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
06/20/2022	0.00980	False		1

Arsenic, dissolved, mg/L

Location: MW23S

Mean of all data: 0.000608

Standard Deviation of all data: 0.00179

Largest Observation Concentration of all data: $X_n = 0.00920$

Test Statistic, high extreme of all data: $T_n = 4.80$

T Critical of all data: $T_{cr} = 2.66$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
10/28/2019	0.00920	False		1

Based on Grubbs one-sided outlier test

Hutsonville Ash Impoundment Outlier Analysis Results

User Supplied Information

Date Range: 01/01/1984 to 10/23/2023

LT Multiplier: x 0.50

Confidence Level: 95%

Number of Outliers: One Outlier

Transform: None

Arsenic, dissolved, mg/L

Location: MW6

Mean of all data: 0.000392

Standard Deviation of all data: 0.000609

Largest Observation Concentration of all data: $X_n = 0.00210$

Test Statistic, high extreme of all data: $T_n = 2.80$

T Critical of all data: $T_{cr} = 2.90$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
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No Outliers

Arsenic, dissolved, mg/L

Location: MW7

Mean of all data: 0.000429

Standard Deviation of all data: 0.00116

Largest Observation Concentration of all data: $X_n = 0.00800$

Test Statistic, high extreme of all data: $T_n = 6.52$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
01/07/2013	0.00800	False		1

Arsenic, dissolved, mg/L

Location: MW7D

Mean of all data: 0.00297

Standard Deviation of all data: 0.00318

Largest Observation Concentration of all data: $X_n = 0.0140$

Test Statistic, high extreme of all data: $T_n = 3.47$

T Critical of all data: $T_{cr} = 2.96$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
10/18/2012	0.0140	False		1

Hutsonville Ash Impoundment Outlier Analysis Results

User Supplied Information

Date Range: 01/01/1984 to 10/23/2023

LT Multiplier: x 0.50

Confidence Level: 95%

Number of Outliers: One Outlier

Transform: None

Arsenic, dissolved, mg/L

Location: MW8

Mean of all data: 0.000441

Standard Deviation of all data: 0.000956

Largest Observation Concentration of all data: $X_n = 0.00610$

Test Statistic, high extreme of all data: $T_n = 5.92$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
12/18/2017	0.00610	False		1

Barium, dissolved, mg/L

Location: MW115D

Mean of all data: 0.0608

Standard Deviation of all data: 0.0187

Largest Observation Concentration of all data: $X_n = 0.158$

Test Statistic, high extreme of all data: $T_n = 5.20$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
04/21/2014	0.158	False		1

Barium, dissolved, mg/L

Location: MW115S

Mean of all data: 0.0583

Standard Deviation of all data: 0.0274

Largest Observation Concentration of all data: $X_n = 0.206$

Test Statistic, high extreme of all data: $T_n = 5.39$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
04/21/2014	0.206	False		1

Based on Grubbs one-sided outlier test

Hutsonville Ash Impoundment Outlier Analysis Results

User Supplied Information

Date Range: 01/01/1984 to 10/23/2023

LT Multiplier: x 0.50

Confidence Level: 95%

Number of Outliers: One Outlier

Transform: None

Barium, dissolved, mg/L

Location: MW11R

Mean of all data: 0.0449

Standard Deviation of all data: 0.0396

Largest Observation Concentration of all data: $X_n = 0.204$

Test Statistic, high extreme of all data: $T_n = 4.01$

T Critical of all data: $T_{cr} = 2.96$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
10/28/2019	0.204	False		1

Barium, dissolved, mg/L

Location: MW121

Mean of all data: 0.0555

Standard Deviation of all data: 0.0240

Largest Observation Concentration of all data: $X_n = 0.198$

Test Statistic, high extreme of all data: $T_n = 5.93$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
04/21/2014	0.198	False		1

Barium, dissolved, mg/L

Location: MW14

Mean of all data: 0.0763

Standard Deviation of all data: 0.0181

Largest Observation Concentration of all data: $X_n = 0.127$

Test Statistic, high extreme of all data: $T_n = 2.81$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
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No Outliers

Hutsonville Ash Impoundment Outlier Analysis Results

User Supplied Information

Date Range: 01/01/1984 to 10/23/2023

LT Multiplier: x 0.50

Confidence Level: 95%

Number of Outliers: One Outlier

Transform: None

Barium, dissolved, mg/L

Location: MW23D

Mean of all data: 0.0449

Standard Deviation of all data: 0.00569

Largest Observation Concentration of all data: $X_n = 0.0560$

Test Statistic, high extreme of all data: $T_n = 1.95$

T Critical of all data: $T_{cr} = 2.66$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	Outlier <u>Low Side</u>	Outlier <u>High Side</u>
10/28/2019	0.0290	False	-1	

Barium, dissolved, mg/L

Location: MW23S

Mean of all data: 0.0349

Standard Deviation of all data: 0.00789

Largest Observation Concentration of all data: $X_n = 0.0490$

Test Statistic, high extreme of all data: $T_n = 1.79$

T Critical of all data: $T_{cr} = 2.66$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	Outlier <u>Low Side</u>	Outlier <u>High Side</u>
10/28/2019	0.00900	False	-1	

Barium, dissolved, mg/L

Location: MW6

Mean of all data: 0.0231

Standard Deviation of all data: 0.0121

Largest Observation Concentration of all data: $X_n = 0.0660$

Test Statistic, high extreme of all data: $T_n = 3.56$

T Critical of all data: $T_{cr} = 2.90$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	Outlier <u>Low Side</u>	Outlier <u>High Side</u>
08/08/2022	0.0660	False		1

Based on Grubbs one-sided outlier test

Hutsonville Ash Impoundment Outlier Analysis Results

User Supplied Information

Date Range: 01/01/1984 to 10/23/2023

LT Multiplier: x 0.50

Confidence Level: 95%

Number of Outliers: One Outlier

Transform: None

Barium, dissolved, mg/L

Location: MW7

Mean of all data: 0.0502

Standard Deviation of all data: 0.0136

Largest Observation Concentration of all data: $X_n = 0.119$

Test Statistic, high extreme of all data: $T_n = 5.06$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
07/09/2012	0.119	False		1

Barium, dissolved, mg/L

Location: MW7D

Mean of all data: 0.0486

Standard Deviation of all data: 0.0149

Largest Observation Concentration of all data: $X_n = 0.0960$

Test Statistic, high extreme of all data: $T_n = 3.19$

T Critical of all data: $T_{cr} = 2.96$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
07/21/2014	0.0960	False		1

Barium, dissolved, mg/L

Location: MW8

Mean of all data: 0.0209

Standard Deviation of all data: 0.00528

Largest Observation Concentration of all data: $X_n = 0.0330$

Test Statistic, high extreme of all data: $T_n = 2.29$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
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No Outliers

Based on Grubbs one-sided outlier test

Hutsonville Ash Impoundment Outlier Analysis Results

User Supplied Information

Date Range: 01/01/1984 to 10/23/2023

LT Multiplier: x 0.50

Confidence Level: 95%

Number of Outliers: One Outlier

Transform: None

Beryllium, dissolved, mg/L

Location: MW115D

Mean of all data: 0.000615

Standard Deviation of all data: 0.000796

Largest Observation Concentration of all data: $X_n = 0.00500$

Test Statistic, high extreme of all data: $T_n = 5.51$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
11/01/2021	<0.00500	True		1

Beryllium, dissolved, mg/L

Location: MW115S

Mean of all data: 0.000615

Standard Deviation of all data: 0.000796

Largest Observation Concentration of all data: $X_n = 0.00500$

Test Statistic, high extreme of all data: $T_n = 5.51$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
11/01/2021	<0.00500	True		1

Beryllium, dissolved, mg/L

Location: MW11R

Mean of all data: 0.000608

Standard Deviation of all data: 0.000802

Largest Observation Concentration of all data: $X_n = 0.00500$

Test Statistic, high extreme of all data: $T_n = 5.48$

T Critical of all data: $T_{cr} = 2.96$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
11/01/2021	<0.00500	True		1

Based on Grubbs one-sided outlier test

Hutsonville Ash Impoundment Outlier Analysis Results

User Supplied Information

Date Range: 01/01/1984 to 10/23/2023

LT Multiplier: x 0.50

Confidence Level: 95%

Number of Outliers: One Outlier

Transform: None

Beryllium, dissolved, mg/L

Location: MW121

Mean of all data: 0.000654

Standard Deviation of all data: 0.000814

Largest Observation Concentration of all data: $X_n = 0.00500$

Test Statistic, high extreme of all data: $T_n = 5.34$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
11/01/2021	<0.00500	True		1

Beryllium, dissolved, mg/L

Location: MW14

Mean of all data: 0.000615

Standard Deviation of all data: 0.000796

Largest Observation Concentration of all data: $X_n = 0.00500$

Test Statistic, high extreme of all data: $T_n = 5.51$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
11/01/2021	<0.00500	True		1

Beryllium, dissolved, mg/L

Location: MW23D

Mean of all data: 0.00100

Standard Deviation of all data: 0.0

Largest Observation Concentration of all data: $X_n = 0.00100$

Test Statistic, high extreme of all data: $T_n = 0.0$

T Critical of all data: $T_{cr} = 0.0$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
<i>No Outliers</i>				

Hutsonville Ash Impoundment Outlier Analysis Results

User Supplied Information

Date Range: 01/01/1984 to 10/23/2023

LT Multiplier: x 0.50

Confidence Level: 95%

Number of Outliers: One Outlier

Transform: None

Beryllium, dissolved, mg/L

Location: MW23S

Mean of all data: 0.00129

Standard Deviation of all data: 0.00144

Largest Observation Concentration of all data: $X_n = 0.00820$

Test Statistic, high extreme of all data: $T_n = 4.80$

T Critical of all data: $T_{cr} = 2.66$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
10/28/2019	0.00820	False		1

Beryllium, dissolved, mg/L

Location: MW6

Mean of all data: 0.000512

Standard Deviation of all data: 0.000506

Largest Observation Concentration of all data: $X_n = 0.00100$

Test Statistic, high extreme of all data: $T_n = 0.966$

T Critical of all data: $T_{cr} = 2.90$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
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No Outliers

Beryllium, dissolved, mg/L

Location: MW7

Mean of all data: 0.000538

Standard Deviation of all data: 0.000503

Largest Observation Concentration of all data: $X_n = 0.00100$

Test Statistic, high extreme of all data: $T_n = 0.917$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
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No Outliers

Hutsonville Ash Impoundment Outlier Analysis Results

User Supplied Information

Date Range: 01/01/1984 to 10/23/2023

LT Multiplier: x 0.50

Confidence Level: 95%

Number of Outliers: One Outlier

Transform: None

Beryllium, dissolved, mg/L

Location: MW7D

Mean of all data: 0.000549

Standard Deviation of all data: 0.000503

Largest Observation Concentration of all data: $X_n = 0.00100$

Test Statistic, high extreme of all data: $T_n = 0.897$

T Critical of all data: $T_{cr} = 2.96$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
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No Outliers

Beryllium, dissolved, mg/L

Location: MW8

Mean of all data: 0.000538

Standard Deviation of all data: 0.000503

Largest Observation Concentration of all data: $X_n = 0.00100$

Test Statistic, high extreme of all data: $T_n = 0.917$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
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No Outliers

Boron, dissolved, mg/L

Location: MW115D

Mean of all data: 0.194

Standard Deviation of all data: 0.890

Largest Observation Concentration of all data: $X_n = 6.48$

Test Statistic, high extreme of all data: $T_n = 7.06$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
04/21/2014	6.48	False		1

Hutsonville Ash Impoundment Outlier Analysis Results

User Supplied Information

Date Range: 01/01/1984 to 10/23/2023

LT Multiplier: x 0.50

Confidence Level: 95%

Number of Outliers: One Outlier

Transform: None

Boron, dissolved, mg/L

Location: MW115S

Mean of all data: 0.242

Standard Deviation of all data: 0.811

Largest Observation Concentration of all data: $X_n = 5.95$

Test Statistic, high extreme of all data: $T_n = 7.04$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
04/21/2014	5.95	False		1

Boron, dissolved, mg/L

Location: MW11R

Mean of all data: 8.34

Standard Deviation of all data: 9.27

Largest Observation Concentration of all data: $X_n = 35.0$

Test Statistic, high extreme of all data: $T_n = 2.88$

T Critical of all data: $T_{cr} = 2.96$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
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No Outliers

Boron, dissolved, mg/L

Location: MW121

Mean of all data: 0.158

Standard Deviation of all data: 0.746

Largest Observation Concentration of all data: $X_n = 5.43$

Test Statistic, high extreme of all data: $T_n = 7.07$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
04/21/2014	5.43	False		1

Hutsonville Ash Impoundment Outlier Analysis Results

User Supplied Information

Date Range: 01/01/1984 to 10/23/2023

LT Multiplier: x 0.50

Confidence Level: 95%

Number of Outliers: One Outlier

Transform: None

Boron, dissolved, mg/L

Location: MW14

Mean of all data: 0.797

Standard Deviation of all data: 0.338

Largest Observation Concentration of all data: $X_n = 1.51$

Test Statistic, high extreme of all data: $T_n = 2.11$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
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No Outliers

Boron, dissolved, mg/L

Location: MW23D

Mean of all data: 0.366

Standard Deviation of all data: 1.59

Largest Observation Concentration of all data: $X_n = 8.02$

Test Statistic, high extreme of all data: $T_n = 4.80$

T Critical of all data: $T_{cr} = 2.66$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
10/28/2019	8.02	False		1

Boron, dissolved, mg/L

Location: MW23S

Mean of all data: 0.368

Standard Deviation of all data: 1.02

Largest Observation Concentration of all data: $X_n = 5.24$

Test Statistic, high extreme of all data: $T_n = 4.80$

T Critical of all data: $T_{cr} = 2.66$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
10/28/2019	5.24	False		1

Hutsonville Ash Impoundment Outlier Analysis Results

User Supplied Information

Date Range: 01/01/1984 to 10/23/2023

LT Multiplier: x 0.50

Confidence Level: 95%

Number of Outliers: One Outlier

Transform: None

Boron, dissolved, mg/L

Location: MW6

Mean of all data: 5.88

Standard Deviation of all data: 7.22

Largest Observation Concentration of all data: $X_n = 23.0$

Test Statistic, high extreme of all data: $T_n = 2.37$

T Critical of all data: $T_{cr} = 2.90$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
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No Outliers

Boron, dissolved, mg/L

Location: MW7

Mean of all data: 1.49

Standard Deviation of all data: 0.820

Largest Observation Concentration of all data: $X_n = 6.61$

Test Statistic, high extreme of all data: $T_n = 6.24$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
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07/21/2014	6.61	False		1
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Boron, dissolved, mg/L

Location: MW7D

Mean of all data: 0.421

Standard Deviation of all data: 0.323

Largest Observation Concentration of all data: $X_n = 1.30$

Test Statistic, high extreme of all data: $T_n = 2.72$

T Critical of all data: $T_{cr} = 2.96$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
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No Outliers

Hutsonville Ash Impoundment Outlier Analysis Results

User Supplied Information

Date Range: 01/01/1984 to 10/23/2023

LT Multiplier: x 0.50

Confidence Level: 95%

Number of Outliers: One Outlier

Transform: None

Boron, dissolved, mg/L

Location: MW8

Mean of all data: 16.4

Standard Deviation of all data: 2.99

Largest Observation Concentration of all data: $X_n = 20.2$

Test Statistic, high extreme of all data: $T_n = 1.29$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	Outlier <u>Low Side</u>	Outlier <u>High Side</u>
11/21/2016	0.0124	False	-1	

Cadmium, dissolved, mg/L

Location: MW115D

Mean of all data: 0.000135

Standard Deviation of all data: 0.000126

Largest Observation Concentration of all data: $X_n = 0.000250$

Test Statistic, high extreme of all data: $T_n = 0.917$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	Outlier <u>Low Side</u>	Outlier <u>High Side</u>
<i>No Outliers</i>				

Cadmium, dissolved, mg/L

Location: MW115S

Mean of all data: 0.000135

Standard Deviation of all data: 0.000126

Largest Observation Concentration of all data: $X_n = 0.000250$

Test Statistic, high extreme of all data: $T_n = 0.917$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	Outlier <u>Low Side</u>	Outlier <u>High Side</u>
<i>No Outliers</i>				

Hutsonville Ash Impoundment Outlier Analysis Results

User Supplied Information

Date Range: 01/01/1984 to 10/23/2023

LT Multiplier: x 0.50

Confidence Level: 95%

Number of Outliers: One Outlier

Transform: None

Cadmium, dissolved, mg/L

Location: MW11R

Mean of all data: 0.000190

Standard Deviation of all data: 0.000268

Largest Observation Concentration of all data: $X_n = 0.00150$

Test Statistic, high extreme of all data: $T_n = 4.88$

T Critical of all data: $T_{cr} = 2.96$

<u>Sample Date</u>	<u>Value</u>	<u>LT Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
05/24/2011	0.00150	False		1

Cadmium, dissolved, mg/L

Location: MW121

Mean of all data: 0.000173

Standard Deviation of all data: 0.000287

Largest Observation Concentration of all data: $X_n = 0.00200$

Test Statistic, high extreme of all data: $T_n = 6.37$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
11/03/2014	0.00200	False		1

Cadmium, dissolved, mg/L

Location: MW14

Mean of all data: 0.000135

Standard Deviation of all data: 0.000126

Largest Observation Concentration of all data: $X_n = 0.000250$

Test Statistic, high extreme of all data: $T_n = 0.917$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
<i>No Outliers</i>				

Hutsonville Ash Impoundment Outlier Analysis Results

User Supplied Information

Date Range: 01/01/1984 to 10/23/2023

LT Multiplier: x 0.50

Confidence Level: 95%

Number of Outliers: One Outlier

Transform: None

Cadmium, dissolved, mg/L

Location: MW23D

Mean of all data: 0.000304

Standard Deviation of all data: 0.000270

Largest Observation Concentration of all data: $X_n = 0.00160$

Test Statistic, high extreme of all data: $T_n = 4.80$

T Critical of all data: $T_{cr} = 2.66$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
10/28/2019	0.00160	False		1

Cadmium, dissolved, mg/L

Location: MW23S

Mean of all data: 0.000444

Standard Deviation of all data: 0.000970

Largest Observation Concentration of all data: $X_n = 0.00510$

Test Statistic, high extreme of all data: $T_n = 4.80$

T Critical of all data: $T_{cr} = 2.66$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
10/28/2019	0.00510	False		1

Cadmium, dissolved, mg/L

Location: MW6

Mean of all data: 0.000128

Standard Deviation of all data: 0.000126

Largest Observation Concentration of all data: $X_n = 0.000250$

Test Statistic, high extreme of all data: $T_n = 0.966$

T Critical of all data: $T_{cr} = 2.90$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
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No Outliers

Hutsonville Ash Impoundment Outlier Analysis Results

User Supplied Information

Date Range: 01/01/1984 to 10/23/2023

LT Multiplier: x 0.50

Confidence Level: 95%

Number of Outliers: One Outlier

Transform: None

Cadmium, dissolved, mg/L

Location: MW7

Mean of all data: 0.000135

Standard Deviation of all data: 0.000126

Largest Observation Concentration of all data: $X_n = 0.000250$

Test Statistic, high extreme of all data: $T_n = 0.917$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
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No Outliers

Cadmium, dissolved, mg/L

Location: MW7D

Mean of all data: 0.000143

Standard Deviation of all data: 0.000125

Largest Observation Concentration of all data: $X_n = 0.000250$

Test Statistic, high extreme of all data: $T_n = 0.857$

T Critical of all data: $T_{cr} = 2.95$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
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No Outliers

Cadmium, dissolved, mg/L

Location: MW8

Mean of all data: 0.000135

Standard Deviation of all data: 0.000126

Largest Observation Concentration of all data: $X_n = 0.000250$

Test Statistic, high extreme of all data: $T_n = 0.917$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
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No Outliers

Hutsonville Ash Impoundment Outlier Analysis Results

User Supplied Information

Date Range: 01/01/1984 to 10/23/2023

LT Multiplier: x 0.50

Confidence Level: 95%

Number of Outliers: One Outlier

Transform: None

Chloride, dissolved, mg/L

Location: MW115D

Mean of all data: 48.6

Standard Deviation of all data: 40.5

Largest Observation Concentration of all data: $X_n = 213$.

Test Statistic, high extreme of all data: $T_n = 4.06$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
11/02/2015	213.	False		1

Chloride, dissolved, mg/L

Location: MW115S

Mean of all data: 28.7

Standard Deviation of all data: 49.3

Largest Observation Concentration of all data: $X_n = 373$.

Test Statistic, high extreme of all data: $T_n = 6.99$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
01/20/2014	373.	False		1

Chloride, dissolved, mg/L

Location: MW11R

Mean of all data: 14.3

Standard Deviation of all data: 4.59

Largest Observation Concentration of all data: $X_n = 25.0$

Test Statistic, high extreme of all data: $T_n = 2.33$

T Critical of all data: $T_{cr} = 2.96$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
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No Outliers

Hutsonville Ash Impoundment Outlier Analysis Results

User Supplied Information

Date Range: 01/01/1984 to 10/23/2023

LT Multiplier: x 0.50

Confidence Level: 95%

Number of Outliers: One Outlier

Transform: None

Chloride, dissolved, mg/L

Location: MW121

Mean of all data: 24.1

Standard Deviation of all data: 29.5

Largest Observation Concentration of all data: $X_n = 230$.

Test Statistic, high extreme of all data: $T_n = 6.98$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
01/20/2014	230.	False		1

Chloride, dissolved, mg/L

Location: MW14

Mean of all data: 19.9

Standard Deviation of all data: 5.36

Largest Observation Concentration of all data: $X_n = 28.1$

Test Statistic, high extreme of all data: $T_n = 1.53$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
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No Outliers

Chloride, dissolved, mg/L

Location: MW23D

Mean of all data: 5.07

Standard Deviation of all data: 1.46

Largest Observation Concentration of all data: $X_n = 9.70$

Test Statistic, high extreme of all data: $T_n = 3.17$

T Critical of all data: $T_{cr} = 2.66$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
10/28/2019	9.70	False		1

Hutsonville Ash Impoundment Outlier Analysis Results

User Supplied Information

Date Range: 01/01/1984 to 10/23/2023

LT Multiplier: x 0.50

Confidence Level: 95%

Number of Outliers: One Outlier

Transform: None

Chloride, dissolved, mg/L

Location: MW23S

Mean of all data: 3.30

Standard Deviation of all data: 2.53

Largest Observation Concentration of all data: $X_n = 10.1$

Test Statistic, high extreme of all data: $T_n = 2.69$

T Critical of all data: $T_{cr} = 2.66$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
10/28/2019	10.1	False		1

Chloride, dissolved, mg/L

Location: MW6

Mean of all data: 16.0

Standard Deviation of all data: 5.34

Largest Observation Concentration of all data: $X_n = 28.0$

Test Statistic, high extreme of all data: $T_n = 2.25$

T Critical of all data: $T_{cr} = 2.90$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
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No Outliers

Chloride, dissolved, mg/L

Location: MW7

Mean of all data: 12.7

Standard Deviation of all data: 3.74

Largest Observation Concentration of all data: $X_n = 21.3$

Test Statistic, high extreme of all data: $T_n = 2.31$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
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No Outliers

Hutsonville Ash Impoundment Outlier Analysis Results

User Supplied Information

Date Range: 01/01/1984 to 10/23/2023

LT Multiplier: x 0.50

Confidence Level: 95%

Number of Outliers: One Outlier

Transform: None

Chloride, dissolved, mg/L

Location: MW7D

Mean of all data: 17.2

Standard Deviation of all data: 6.62

Largest Observation Concentration of all data: $X_n = 44.0$

Test Statistic, high extreme of all data: $T_n = 4.05$

T Critical of all data: $T_{cr} = 2.96$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
10/11/2011	44.0	False		1

Chloride, dissolved, mg/L

Location: MW8

Mean of all data: 12.6

Standard Deviation of all data: 2.79

Largest Observation Concentration of all data: $X_n = 29.0$

Test Statistic, high extreme of all data: $T_n = 5.89$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
10/11/2011	29.0	False		1

Chromium, dissolved, mg/L

Location: MW115D

Mean of all data: 0.00203

Standard Deviation of all data: 0.00496

Largest Observation Concentration of all data: $X_n = 0.0330$

Test Statistic, high extreme of all data: $T_n = 6.25$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
04/21/2014	0.0330	False		1

Based on Grubbs one-sided outlier test

Hutsonville Ash Impoundment Outlier Analysis Results

User Supplied Information

Date Range: 01/01/1984 to 10/23/2023

LT Multiplier: x 0.50

Confidence Level: 95%

Number of Outliers: One Outlier

Transform: None

Chromium, dissolved, mg/L

Location: MW115S

Mean of all data: 0.00154

Standard Deviation of all data: 0.00339

Largest Observation Concentration of all data: $X_n = 0.0220$

Test Statistic, high extreme of all data: $T_n = 6.03$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
04/21/2014	0.0220	False		1

Chromium, dissolved, mg/L

Location: MW11R

Mean of all data: 0.000969

Standard Deviation of all data: 0.00199

Largest Observation Concentration of all data: $X_n = 0.0130$

Test Statistic, high extreme of all data: $T_n = 6.04$

T Critical of all data: $T_{cr} = 2.96$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
04/21/2014	0.0130	False		1

Chromium, dissolved, mg/L

Location: MW121

Mean of all data: 0.00124

Standard Deviation of all data: 0.00261

Largest Observation Concentration of all data: $X_n = 0.0180$

Test Statistic, high extreme of all data: $T_n = 6.41$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
04/21/2014	0.0180	False		1

Based on Grubbs one-sided outlier test

Hutsonville Ash Impoundment Outlier Analysis Results

User Supplied Information

Date Range: 01/01/1984 to 10/23/2023

LT Multiplier: x 0.50

Confidence Level: 95%

Number of Outliers: One Outlier

Transform: None

Chromium, dissolved, mg/L

Location: MW14

Mean of all data: 0.00140

Standard Deviation of all data: 0.00230

Largest Observation Concentration of all data: $X_n = 0.0100$

Test Statistic, high extreme of all data: $T_n = 3.74$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
04/21/2014	0.0100	False		1

Chromium, dissolved, mg/L

Location: MW23D

Mean of all data: 0.000972

Standard Deviation of all data: 0.000140

Largest Observation Concentration of all data: $X_n = 0.00100$

Test Statistic, high extreme of all data: $T_n = 0.200$

T Critical of all data: $T_{cr} = 2.66$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
03/01/2021	0.000300	False	-1	

Chromium, dissolved, mg/L

Location: MW23S

Mean of all data: 0.000944

Standard Deviation of all data: 0.000194

Largest Observation Concentration of all data: $X_n = 0.00100$

Test Statistic, high extreme of all data: $T_n = 0.289$

T Critical of all data: $T_{cr} = 2.66$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
03/21/2022	0.000300	False	-1	

Based on Grubbs one-sided outlier test

Hutsonville Ash Impoundment Outlier Analysis Results

User Supplied Information

Date Range: 01/01/1984 to 10/23/2023

LT Multiplier: x 0.50

Confidence Level: 95%

Number of Outliers: One Outlier

Transform: None

Chromium, dissolved, mg/L

Location: MW6

Mean of all data: 0.00120

Standard Deviation of all data: 0.00298

Largest Observation Concentration of all data: $X_n = 0.0140$

Test Statistic, high extreme of all data: $T_n = 4.30$

T Critical of all data: $T_{cr} = 2.88$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
04/13/2012	0.0140	False		1

Chromium, dissolved, mg/L

Location: MW7

Mean of all data: 0.00157

Standard Deviation of all data: 0.00325

Largest Observation Concentration of all data: $X_n = 0.0190$

Test Statistic, high extreme of all data: $T_n = 5.37$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
08/26/2013	0.0190	False		1

Chromium, dissolved, mg/L

Location: MW7D

Mean of all data: 0.00236

Standard Deviation of all data: 0.00751

Largest Observation Concentration of all data: $X_n = 0.0510$

Test Statistic, high extreme of all data: $T_n = 6.48$

T Critical of all data: $T_{cr} = 2.96$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
08/26/2013	0.0510	False		1

Based on Grubbs one-sided outlier test

Hutsonville Ash Impoundment Outlier Analysis Results

User Supplied Information

Date Range: 01/01/1984 to 10/23/2023

LT Multiplier: x 0.50

Confidence Level: 95%

Number of Outliers: One Outlier

Transform: None

Chromium, dissolved, mg/L

Location: MW8

Mean of all data: 0.00143

Standard Deviation of all data: 0.00285

Largest Observation Concentration of all data: $X_n = 0.0160$

Test Statistic, high extreme of all data: $T_n = 5.11$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
04/13/2012	0.0160	False		1

Cobalt, dissolved, mg/L

Location: MW115D

Mean of all data: 0.000596

Standard Deviation of all data: 0.000534

Largest Observation Concentration of all data: $X_n = 0.00200$

Test Statistic, high extreme of all data: $T_n = 2.63$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
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No Outliers

Cobalt, dissolved, mg/L

Location: MW115S

Mean of all data: 0.000615

Standard Deviation of all data: 0.000530

Largest Observation Concentration of all data: $X_n = 0.00200$

Test Statistic, high extreme of all data: $T_n = 2.61$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
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No Outliers

Hutsonville Ash Impoundment Outlier Analysis Results

User Supplied Information

Date Range: 01/01/1984 to 10/23/2023

LT Multiplier: x 0.50

Confidence Level: 95%

Number of Outliers: One Outlier

Transform: None

Cobalt, dissolved, mg/L

Location: MW11R

Mean of all data: 0.00125

Standard Deviation of all data: 0.00229

Largest Observation Concentration of all data: $X_n = 0.0150$

Test Statistic, high extreme of all data: $T_n = 6.01$

T Critical of all data: $T_{cr} = 2.96$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
01/20/2014	0.0150	False		1

Cobalt, dissolved, mg/L

Location: MW121

Mean of all data: 0.000635

Standard Deviation of all data: 0.000627

Largest Observation Concentration of all data: $X_n = 0.00300$

Test Statistic, high extreme of all data: $T_n = 3.77$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
11/03/2014	0.00300	False		1

Cobalt, dissolved, mg/L

Location: MW14

Mean of all data: 0.000750

Standard Deviation of all data: 0.000682

Largest Observation Concentration of all data: $X_n = 0.00300$

Test Statistic, high extreme of all data: $T_n = 3.30$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
07/21/2014	0.00300	False		1

Based on Grubbs one-sided outlier test

Hutsonville Ash Impoundment Outlier Analysis Results

User Supplied Information

Date Range: 01/01/1984 to 10/23/2023

LT Multiplier: x 0.50

Confidence Level: 95%

Number of Outliers: One Outlier

Transform: None

Cobalt, dissolved, mg/L

Location: MW23D

Mean of all data: 0.00564

Standard Deviation of all data: 0.0208

Largest Observation Concentration of all data: $X_n = 0.105$

Test Statistic, high extreme of all data: $T_n = 4.77$

T Critical of all data: $T_{cr} = 2.66$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
10/28/2019	0.105	False		1

Cobalt, dissolved, mg/L

Location: MW23S

Mean of all data: 0.00460

Standard Deviation of all data: 0.0180

Largest Observation Concentration of all data: $X_n = 0.0910$

Test Statistic, high extreme of all data: $T_n = 4.80$

T Critical of all data: $T_{cr} = 2.66$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
10/28/2019	0.0910	False		1

Cobalt, dissolved, mg/L

Location: MW6

Mean of all data: 0.000560

Standard Deviation of all data: 0.000554

Largest Observation Concentration of all data: $X_n = 0.00210$

Test Statistic, high extreme of all data: $T_n = 2.78$

T Critical of all data: $T_{cr} = 2.90$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
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No Outliers

Hutsonville Ash Impoundment Outlier Analysis Results

User Supplied Information

Date Range: 01/01/1984 to 10/23/2023

LT Multiplier: x 0.50

Confidence Level: 95%

Number of Outliers: One Outlier

Transform: None

Cobalt, dissolved, mg/L

Location: MW7

Mean of all data: 0.000538

Standard Deviation of all data: 0.000503

Largest Observation Concentration of all data: $X_n = 0.00100$

Test Statistic, high extreme of all data: $T_n = 0.917$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
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No Outliers

Cobalt, dissolved, mg/L

Location: MW7D

Mean of all data: 0.000675

Standard Deviation of all data: 0.000641

Largest Observation Concentration of all data: $X_n = 0.00300$

Test Statistic, high extreme of all data: $T_n = 3.63$

T Critical of all data: $T_{cr} = 2.96$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
07/21/2014	0.00300	False		1

Cobalt, dissolved, mg/L

Location: MW8

Mean of all data: 0.000663

Standard Deviation of all data: 0.000833

Largest Observation Concentration of all data: $X_n = 0.00500$

Test Statistic, high extreme of all data: $T_n = 5.21$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
12/18/2017	0.00500	False		1

Hutsonville Ash Impoundment Outlier Analysis Results

User Supplied Information

Date Range: 01/01/1984 to 10/23/2023

LT Multiplier: x 0.50

Confidence Level: 95%

Number of Outliers: One Outlier

Transform: None

Copper, dissolved, mg/L

Location: MW115D

Mean of all data: 0.00105

Standard Deviation of all data: 0.00305

Largest Observation Concentration of all data: $X_n = 0.0220$

Test Statistic, high extreme of all data: $T_n = 6.86$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
04/21/2014	0.0220	False		1

Copper, dissolved, mg/L

Location: MW115S

Mean of all data: 0.00125

Standard Deviation of all data: 0.00339

Largest Observation Concentration of all data: $X_n = 0.0190$

Test Statistic, high extreme of all data: $T_n = 5.24$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
04/21/2014	0.0190	False		1

Copper, dissolved, mg/L

Location: MW11R

Mean of all data: 0.000853

Standard Deviation of all data: 0.00138

Largest Observation Concentration of all data: $X_n = 0.00580$

Test Statistic, high extreme of all data: $T_n = 3.59$

T Critical of all data: $T_{cr} = 2.96$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
02/20/2023	0.00580	False		1

Based on Grubbs one-sided outlier test

Hutsonville Ash Impoundment Outlier Analysis Results

User Supplied Information

Date Range: 01/01/1984 to 10/23/2023

LT Multiplier: x 0.50

Confidence Level: 95%

Number of Outliers: One Outlier

Transform: None

Copper, dissolved, mg/L

Location: MW121

Mean of all data: 0.000800

Standard Deviation of all data: 0.00161

Largest Observation Concentration of all data: $X_n = 0.0100$

Test Statistic, high extreme of all data: $T_n = 5.73$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
04/21/2014	0.0100	False		1

Copper, dissolved, mg/L

Location: MW14

Mean of all data: 0.00145

Standard Deviation of all data: 0.00540

Largest Observation Concentration of all data: $X_n = 0.0371$

Test Statistic, high extreme of all data: $T_n = 6.60$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
08/26/2019	0.0371	False		1

Copper, dissolved, mg/L

Location: MW23D

Mean of all data: 0.000500

Standard Deviation of all data: 0.0

Largest Observation Concentration of all data: $X_n = 0.000500$

Test Statistic, high extreme of all data: $T_n = 0.0$

T Critical of all data: $T_{cr} = 0.0$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
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No Outliers

Hutsonville Ash Impoundment Outlier Analysis Results

User Supplied Information

Date Range: 01/01/1984 to 10/23/2023

LT Multiplier: x 0.50

Confidence Level: 95%

Number of Outliers: One Outlier

Transform: None

Copper, dissolved, mg/L

Location: MW23S

Mean of all data: 0.00103

Standard Deviation of all data: 0.00184

Largest Observation Concentration of all data: $X_n = 0.00780$

Test Statistic, high extreme of all data: $T_n = 3.68$

T Critical of all data: $T_{cr} = 2.66$

<u>Sample Date</u>	<u>Value</u>	<u>LT Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
10/28/2019	0.00780	False		1

Copper, dissolved, mg/L

Location: MW6

Mean of all data: 0.000640

Standard Deviation of all data: 0.000766

Largest Observation Concentration of all data: $X_n = 0.00300$

Test Statistic, high extreme of all data: $T_n = 3.08$

T Critical of all data: $T_{cr} = 2.90$

<u>Sample Date</u>	<u>Value</u>	<u>LT Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
01/30/2012	0.00300	False		1

Copper, dissolved, mg/L

Location: MW7

Mean of all data: 0.000654

Standard Deviation of all data: 0.000958

Largest Observation Concentration of all data: $X_n = 0.00500$

Test Statistic, high extreme of all data: $T_n = 4.54$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
04/21/2014	0.00500	False		1

Based on Grubbs one-sided outlier test

Hutsonville Ash Impoundment Outlier Analysis Results

User Supplied Information

Date Range: 01/01/1984 to 10/23/2023

LT Multiplier: x 0.50

Confidence Level: 95%

Number of Outliers: One Outlier

Transform: None

Copper, dissolved, mg/L

Location: MW7D

Mean of all data: 0.000745

Standard Deviation of all data: 0.00155

Largest Observation Concentration of all data: $X_n = 0.0100$

Test Statistic, high extreme of all data: $T_n = 5.96$

T Critical of all data: $T_{cr} = 2.96$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
04/21/2014	0.0100	False		1

Copper, dissolved, mg/L

Location: MW8

Mean of all data: 0.00135

Standard Deviation of all data: 0.00432

Largest Observation Concentration of all data: $X_n = 0.0307$

Test Statistic, high extreme of all data: $T_n = 6.79$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
03/13/2017	0.0307	False		1

Cyanide, total, mg/L

Location: MW115D

Mean of all data: 0.00474

Standard Deviation of all data: 0.00458

Largest Observation Concentration of all data: $X_n = 0.0100$

Test Statistic, high extreme of all data: $T_n = 1.15$

T Critical of all data: $T_{cr} = 2.99$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
<i>No Outliers</i>				

Based on Grubbs one-sided outlier test

Hutsonville Ash Impoundment Outlier Analysis Results

User Supplied Information

Date Range: 01/01/1984 to 10/23/2023

LT Multiplier: x 0.50

Confidence Level: 95%

Number of Outliers: One Outlier

Transform: None

Cyanide, total, mg/L

Location: MW115S

Mean of all data: 0.00620

Standard Deviation of all data: 0.0112

Largest Observation Concentration of all data: $X_n = 0.0800$

Test Statistic, high extreme of all data: $T_n = 6.61$

T Critical of all data: $T_{cr} = 2.99$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
06/20/2022	0.0800	False		1

Cyanide, total, mg/L

Location: MW11R

Mean of all data: 0.00700

Standard Deviation of all data: 0.0106

Largest Observation Concentration of all data: $X_n = 0.0700$

Test Statistic, high extreme of all data: $T_n = 5.95$

T Critical of all data: $T_{cr} = 2.98$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
06/19/2017	0.0700	False		1

Cyanide, total, mg/L

Location: MW121

Mean of all data: 0.00481

Standard Deviation of all data: 0.00455

Largest Observation Concentration of all data: $X_n = 0.0100$

Test Statistic, high extreme of all data: $T_n = 1.14$

T Critical of all data: $T_{cr} = 2.99$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
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No Outliers

Hutsonville Ash Impoundment Outlier Analysis Results

User Supplied Information

Date Range: 01/01/1984 to 10/23/2023

LT Multiplier: x 0.50

Confidence Level: 95%

Number of Outliers: One Outlier

Transform: None

Cyanide, total, mg/L

Location: MW14

Mean of all data: 0.00739

Standard Deviation of all data: 0.0164

Largest Observation Concentration of all data: $X_n = 0.120$

Test Statistic, high extreme of all data: $T_n = 6.87$

T Critical of all data: $T_{cr} = 2.99$

<u>Sample Date</u>	<u>Value</u>	<u>LT Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
11/21/2016	0.120	False		1

Cyanide, total, mg/L

Location: MW23D

Mean of all data: 0.0126

Standard Deviation of all data: 0.0130

Largest Observation Concentration of all data: $X_n = 0.0600$

Test Statistic, high extreme of all data: $T_n = 3.65$

T Critical of all data: $T_{cr} = 2.66$

<u>Sample Date</u>	<u>Value</u>	<u>LT Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
03/21/2022	0.0600	False		1

Cyanide, total, mg/L

Location: MW23S

Mean of all data: 0.00980

Standard Deviation of all data: 0.00467

Largest Observation Concentration of all data: $X_n = 0.0300$

Test Statistic, high extreme of all data: $T_n = 4.32$

T Critical of all data: $T_{cr} = 2.66$

<u>Sample Date</u>	<u>Value</u>	<u>LT Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
06/20/2022	0.0300	False		1

Based on Grubbs one-sided outlier test

Hutsonville Ash Impoundment Outlier Analysis Results

User Supplied Information

Date Range: 01/01/1984 to 10/23/2023

LT Multiplier: x 0.50

Confidence Level: 95%

Number of Outliers: One Outlier

Transform: None

Cyanide, total, mg/L

Location: MW6

Mean of all data: 0.00507

Standard Deviation of all data: 0.00493

Largest Observation Concentration of all data: $X_n = 0.0180$

Test Statistic, high extreme of all data: $T_n = 2.62$

T Critical of all data: $T_{cr} = 2.91$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
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No Outliers

Cyanide, total, mg/L

Location: MW7

Mean of all data: 0.00574

Standard Deviation of all data: 0.00703

Largest Observation Concentration of all data: $X_n = 0.0450$

Test Statistic, high extreme of all data: $T_n = 5.58$

T Critical of all data: $T_{cr} = 2.99$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
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05/20/2013	0.0450	False		1
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Cyanide, total, mg/L

Location: MW7D

Mean of all data: 0.00825

Standard Deviation of all data: 0.0204

Largest Observation Concentration of all data: $X_n = 0.150$

Test Statistic, high extreme of all data: $T_n = 6.94$

T Critical of all data: $T_{cr} = 2.98$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
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05/20/2013	0.150	False		1
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Hutsonville Ash Impoundment Outlier Analysis Results

User Supplied Information

Date Range: 01/01/1984 to 10/23/2023

LT Multiplier: x 0.50

Confidence Level: 95%

Number of Outliers: One Outlier

Transform: None

Cyanide, total, mg/L

Location: MW8

Mean of all data: 0.00535

Standard Deviation of all data: 0.00557

Largest Observation Concentration of all data: $X_n = 0.0300$

Test Statistic, high extreme of all data: $T_n = 4.43$

T Critical of all data: $T_{cr} = 2.99$

<u>Sample Date</u>	<u>Value</u>	<u>LT Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
03/21/2022	0.0300	False		1

Fluoride, dissolved, mg/L

Location: MW115D

Mean of all data: 0.158

Standard Deviation of all data: 0.103

Largest Observation Concentration of all data: $X_n = 0.466$

Test Statistic, high extreme of all data: $T_n = 2.98$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
03/13/2017	0.466	False		1

Fluoride, dissolved, mg/L

Location: MW115S

Mean of all data: 0.176

Standard Deviation of all data: 0.121

Largest Observation Concentration of all data: $X_n = 0.571$

Test Statistic, high extreme of all data: $T_n = 3.26$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
11/02/2015	0.571	False		1

Based on Grubbs one-sided outlier test

Hutsonville Ash Impoundment Outlier Analysis Results

User Supplied Information

Date Range: 01/01/1984 to 10/23/2023

LT Multiplier: x 0.50

Confidence Level: 95%

Number of Outliers: One Outlier

Transform: None

Fluoride, dissolved, mg/L

Location: MW11R

Mean of all data: 0.126

Standard Deviation of all data: 0.137

Largest Observation Concentration of all data: $X_n = 0.645$

Test Statistic, high extreme of all data: $T_n = 3.79$

T Critical of all data: $T_{cr} = 2.96$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
11/02/2015	0.645	False		1

Fluoride, dissolved, mg/L

Location: MW121

Mean of all data: 0.160

Standard Deviation of all data: 0.110

Largest Observation Concentration of all data: $X_n = 0.504$

Test Statistic, high extreme of all data: $T_n = 3.14$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
11/02/2015	0.504	False		1

Fluoride, dissolved, mg/L

Location: MW14

Mean of all data: 0.0966

Standard Deviation of all data: 0.110

Largest Observation Concentration of all data: $X_n = 0.534$

Test Statistic, high extreme of all data: $T_n = 3.97$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
11/02/2015	0.534	False		1

Based on Grubbs one-sided outlier test

Hutsonville Ash Impoundment Outlier Analysis Results

User Supplied Information

Date Range: 01/01/1984 to 10/23/2023

LT Multiplier: x 0.50

Confidence Level: 95%

Number of Outliers: One Outlier

Transform: None

Fluoride, dissolved, mg/L

Location: MW23D

Mean of all data: 0.129

Standard Deviation of all data: 0.108

Largest Observation Concentration of all data: $X_n = 0.600$

Test Statistic, high extreme of all data: $T_n = 4.35$

T Critical of all data: $T_{cr} = 2.64$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
10/28/2019	0.600	False		1

Fluoride, dissolved, mg/L

Location: MW23S

Mean of all data: 0.161

Standard Deviation of all data: 0.188

Largest Observation Concentration of all data: $X_n = 0.900$

Test Statistic, high extreme of all data: $T_n = 3.93$

T Critical of all data: $T_{cr} = 2.64$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
10/28/2019	0.900	False		1

Fluoride, dissolved, mg/L

Location: MW6

Mean of all data: 0.129

Standard Deviation of all data: 0.103

Largest Observation Concentration of all data: $X_n = 0.400$

Test Statistic, high extreme of all data: $T_n = 2.64$

T Critical of all data: $T_{cr} = 2.90$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
<i>No Outliers</i>				

Hutsonville Ash Impoundment Outlier Analysis Results

User Supplied Information

Date Range: 01/01/1984 to 10/23/2023

LT Multiplier: x 0.50

Confidence Level: 95%

Number of Outliers: One Outlier

Transform: None

Fluoride, dissolved, mg/L

Location: MW7

Mean of all data: 0.417

Standard Deviation of all data: 2.40

Largest Observation Concentration of all data: $X_n = 17.4$

Test Statistic, high extreme of all data: $T_n = 7.07$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
11/02/2015	17.4	False		1

Fluoride, dissolved, mg/L

Location: MW7D

Mean of all data: 0.153

Standard Deviation of all data: 0.116

Largest Observation Concentration of all data: $X_n = 0.529$

Test Statistic, high extreme of all data: $T_n = 3.25$

T Critical of all data: $T_{cr} = 2.96$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
11/02/2015	0.529	False		1

Fluoride, dissolved, mg/L

Location: MW8

Mean of all data: 0.0697

Standard Deviation of all data: 0.0640

Largest Observation Concentration of all data: $X_n = 0.300$

Test Statistic, high extreme of all data: $T_n = 3.60$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
03/12/2018	0.300	False		1

Based on Grubbs one-sided outlier test

Hutsonville Ash Impoundment Outlier Analysis Results

User Supplied Information

Date Range: 01/01/1984 to 10/23/2023

LT Multiplier: x 0.50

Confidence Level: 95%

Number of Outliers: One Outlier

Transform: None

Iron, dissolved, mg/L

Location: MW115D

Mean of all data: 1.14

Standard Deviation of all data: 1.47

Largest Observation Concentration of all data: $X_n = 4.91$

Test Statistic, high extreme of all data: $T_n = 2.57$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
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No Outliers

Iron, dissolved, mg/L

Location: MW115S

Mean of all data: 1.43

Standard Deviation of all data: 2.84

Largest Observation Concentration of all data: $X_n = 17.6$

Test Statistic, high extreme of all data: $T_n = 5.70$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
04/13/2012	17.6	False		1

Iron, dissolved, mg/L

Location: MW11R

Mean of all data: 0.390

Standard Deviation of all data: 0.754

Largest Observation Concentration of all data: $X_n = 4.06$

Test Statistic, high extreme of all data: $T_n = 4.87$

T Critical of all data: $T_{cr} = 2.96$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
04/21/2014	4.06	False		1

Hutsonville Ash Impoundment Outlier Analysis Results

User Supplied Information

Date Range: 01/01/1984 to 10/23/2023

LT Multiplier: x 0.50

Confidence Level: 95%

Number of Outliers: One Outlier

Transform: None

Iron, dissolved, mg/L

Location: MW121

Mean of all data: 1.34

Standard Deviation of all data: 1.31

Largest Observation Concentration of all data: $X_n = 5.40$

Test Statistic, high extreme of all data: $T_n = 3.10$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
04/20/2015	5.40	False		1

Iron, dissolved, mg/L

Location: MW14

Mean of all data: 0.661

Standard Deviation of all data: 0.709

Largest Observation Concentration of all data: $X_n = 3.07$

Test Statistic, high extreme of all data: $T_n = 3.40$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
03/13/2017	3.07	False		1

Iron, dissolved, mg/L

Location: MW23D

Mean of all data: 3.10

Standard Deviation of all data: 13.9

Largest Observation Concentration of all data: $X_n = 70.0$

Test Statistic, high extreme of all data: $T_n = 4.80$

T Critical of all data: $T_{cr} = 2.66$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
10/28/2019	70.0	False		1

Based on Grubbs one-sided outlier test

Hutsonville Ash Impoundment Outlier Analysis Results

User Supplied Information

Date Range: 01/01/1984 to 10/23/2023

LT Multiplier: x 0.50

Confidence Level: 95%

Number of Outliers: One Outlier

Transform: None

Iron, dissolved, mg/L

Location: MW23S

Mean of all data: 8.21

Standard Deviation of all data: 40.8

Largest Observation Concentration of all data: $X_n = 204$.

Test Statistic, high extreme of all data: $T_n = 4.80$

T Critical of all data: $T_{cr} = 2.66$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	Outlier <u>Low Side</u>	Outlier <u>High Side</u>
10/28/2019	204.	False		1

Iron, dissolved, mg/L

Location: MW6

Mean of all data: 0.322

Standard Deviation of all data: 0.456

Largest Observation Concentration of all data: $X_n = 1.94$

Test Statistic, high extreme of all data: $T_n = 3.55$

T Critical of all data: $T_{cr} = 2.93$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	Outlier <u>Low Side</u>	Outlier <u>High Side</u>
04/13/2012	1.94	False		1

Iron, dissolved, mg/L

Location: MW7

Mean of all data: 0.351

Standard Deviation of all data: 0.755

Largest Observation Concentration of all data: $X_n = 4.96$

Test Statistic, high extreme of all data: $T_n = 6.11$

T Critical of all data: $T_{cr} = 3.00$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	Outlier <u>Low Side</u>	Outlier <u>High Side</u>
07/09/2012	4.96	False		1

Based on Grubbs one-sided outlier test

Hutsonville Ash Impoundment Outlier Analysis Results

User Supplied Information

Date Range: 01/01/1984 to 10/23/2023

LT Multiplier: x 0.50

Confidence Level: 95%

Number of Outliers: One Outlier

Transform: None

Iron, dissolved, mg/L

Location: MW7D

Mean of all data: 1.19

Standard Deviation of all data: 1.17

Largest Observation Concentration of all data: $X_n = 5.14$

Test Statistic, high extreme of all data: $T_n = 3.38$

T Critical of all data: $T_{cr} = 2.96$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
07/21/2014	5.14	False		1

Iron, dissolved, mg/L

Location: MW8

Mean of all data: 0.790

Standard Deviation of all data: 1.12

Largest Observation Concentration of all data: $X_n = 5.25$

Test Statistic, high extreme of all data: $T_n = 3.98$

T Critical of all data: $T_{cr} = 3.00$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
07/09/2012	5.25	False		1

Lead, dissolved, mg/L

Location: MW115D

Mean of all data: 0.000635

Standard Deviation of all data: 0.000627

Largest Observation Concentration of all data: $X_n = 0.00300$

Test Statistic, high extreme of all data: $T_n = 3.77$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
04/21/2014	0.00300	False		1

Based on Grubbs one-sided outlier test

Hutsonville Ash Impoundment Outlier Analysis Results

User Supplied Information

Date Range: 01/01/1984 to 10/23/2023

LT Multiplier: x 0.50

Confidence Level: 95%

Number of Outliers: One Outlier

Transform: None

Lead, dissolved, mg/L

Location: MW115S

Mean of all data: 0.000942

Standard Deviation of all data: 0.00169

Largest Observation Concentration of all data: $X_n = 0.0110$

Test Statistic, high extreme of all data: $T_n = 5.97$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
04/13/2012	0.0110	False		1

Lead, dissolved, mg/L

Location: MW11R

Mean of all data: 0.000647

Standard Deviation of all data: 0.000627

Largest Observation Concentration of all data: $X_n = 0.00300$

Test Statistic, high extreme of all data: $T_n = 3.75$

T Critical of all data: $T_{cr} = 2.96$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
01/19/2015	0.00300	False		1

Lead, dissolved, mg/L

Location: MW121

Mean of all data: 0.00110

Standard Deviation of all data: 0.00302

Largest Observation Concentration of all data: $X_n = 0.0220$

Test Statistic, high extreme of all data: $T_n = 6.91$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
08/26/2013	0.0220	False		1

Based on Grubbs one-sided outlier test

Hutsonville Ash Impoundment Outlier Analysis Results

User Supplied Information

Date Range: 01/01/1984 to 10/23/2023

LT Multiplier: x 0.50

Confidence Level: 95%

Number of Outliers: One Outlier

Transform: None

Lead, dissolved, mg/L

Location: MW14

Mean of all data: 0.000538

Standard Deviation of all data: 0.000503

Largest Observation Concentration of all data: $X_n = 0.00100$

Test Statistic, high extreme of all data: $T_n = 0.917$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
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No Outliers

Lead, dissolved, mg/L

Location: MW23D

Mean of all data: 0.00104

Standard Deviation of all data: 0.000200

Largest Observation Concentration of all data: $X_n = 0.00200$

Test Statistic, high extreme of all data: $T_n = 4.80$

T Critical of all data: $T_{cr} = 2.66$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
10/28/2019	0.00200	False		1

Lead, dissolved, mg/L

Location: MW23S

Mean of all data: 0.00160

Standard Deviation of all data: 0.00212

Largest Observation Concentration of all data: $X_n = 0.0100$

Test Statistic, high extreme of all data: $T_n = 3.96$

T Critical of all data: $T_{cr} = 2.66$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
08/26/2019	<0.0100	True		1

Hutsonville Ash Impoundment Outlier Analysis Results

User Supplied Information

Date Range: 01/01/1984 to 10/23/2023

LT Multiplier: x 0.50

Confidence Level: 95%

Number of Outliers: One Outlier

Transform: None

Lead, dissolved, mg/L

Location: MW6

Mean of all data: 0.000558

Standard Deviation of all data: 0.000548

Largest Observation Concentration of all data: $X_n = 0.00200$

Test Statistic, high extreme of all data: $T_n = 2.63$

T Critical of all data: $T_{cr} = 2.90$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
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No Outliers

Lead, dissolved, mg/L

Location: MW7

Mean of all data: 0.000769

Standard Deviation of all data: 0.00141

Largest Observation Concentration of all data: $X_n = 0.0100$

Test Statistic, high extreme of all data: $T_n = 6.55$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
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07/09/2012	0.0100	False		1
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Lead, dissolved, mg/L

Location: MW7D

Mean of all data: 0.000686

Standard Deviation of all data: 0.000905

Largest Observation Concentration of all data: $X_n = 0.00600$

Test Statistic, high extreme of all data: $T_n = 5.87$

T Critical of all data: $T_{cr} = 2.96$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
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07/21/2014	0.00600	False		1
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Hutsonville Ash Impoundment Outlier Analysis Results

User Supplied Information

Date Range: 01/01/1984 to 10/23/2023

LT Multiplier: x 0.50

Confidence Level: 95%

Number of Outliers: One Outlier

Transform: None

Lead, dissolved, mg/L

Location: MW8

Mean of all data: 0.000729

Standard Deviation of all data: 0.000787

Largest Observation Concentration of all data: $X_n = 0.00390$

Test Statistic, high extreme of all data: $T_n = 4.03$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
10/11/2011	0.00390	False		1

Manganese, dissolved, mg/L

Location: MW115D

Mean of all data: 0.337

Standard Deviation of all data: 0.233

Largest Observation Concentration of all data: $X_n = 1.17$

Test Statistic, high extreme of all data: $T_n = 3.58$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
09/01/2021	1.17	False		1

Manganese, dissolved, mg/L

Location: MW115S

Mean of all data: 0.956

Standard Deviation of all data: 0.336

Largest Observation Concentration of all data: $X_n = 1.78$

Test Statistic, high extreme of all data: $T_n = 2.45$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
<i>No Outliers</i>				

Hutsonville Ash Impoundment Outlier Analysis Results

User Supplied Information

Date Range: 01/01/1984 to 10/23/2023

LT Multiplier: x 0.50

Confidence Level: 95%

Number of Outliers: One Outlier

Transform: None

Manganese, dissolved, mg/L

Location: MW11R

Mean of all data: 0.464

Standard Deviation of all data: 1.10

Largest Observation Concentration of all data: $X_n = 5.87$

Test Statistic, high extreme of all data: $T_n = 4.93$

T Critical of all data: $T_{cr} = 2.96$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
10/18/2012	5.87	False		1

Manganese, dissolved, mg/L

Location: MW121

Mean of all data: 0.824

Standard Deviation of all data: 0.372

Largest Observation Concentration of all data: $X_n = 1.90$

Test Statistic, high extreme of all data: $T_n = 2.89$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
<i>No Outliers</i>				

Manganese, dissolved, mg/L

Location: MW14

Mean of all data: 0.618

Standard Deviation of all data: 0.269

Largest Observation Concentration of all data: $X_n = 1.59$

Test Statistic, high extreme of all data: $T_n = 3.61$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
03/07/2016	1.59	False		1

Hutsonville Ash Impoundment Outlier Analysis Results

User Supplied Information

Date Range: 01/01/1984 to 10/23/2023

LT Multiplier: x 0.50

Confidence Level: 95%

Number of Outliers: One Outlier

Transform: None

Manganese, dissolved, mg/L

Location: MW23D

Mean of all data: 0.463

Standard Deviation of all data: 1.70

Largest Observation Concentration of all data: $X_n = 8.60$

Test Statistic, high extreme of all data: $T_n = 4.80$

T Critical of all data: $T_{cr} = 2.66$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
10/28/2019	8.60	False		1

Manganese, dissolved, mg/L

Location: MW23S

Mean of all data: 0.563

Standard Deviation of all data: 2.70

Largest Observation Concentration of all data: $X_n = 13.5$

Test Statistic, high extreme of all data: $T_n = 4.80$

T Critical of all data: $T_{cr} = 2.66$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
10/28/2019	13.5	False		1

Manganese, dissolved, mg/L

Location: MW6

Mean of all data: 0.0953

Standard Deviation of all data: 0.172

Largest Observation Concentration of all data: $X_n = 0.840$

Test Statistic, high extreme of all data: $T_n = 4.33$

T Critical of all data: $T_{cr} = 2.90$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
10/11/2011	0.840	False		1

Based on Grubbs one-sided outlier test

Hutsonville Ash Impoundment Outlier Analysis Results

User Supplied Information

Date Range: 01/01/1984 to 10/23/2023

LT Multiplier: x 0.50

Confidence Level: 95%

Number of Outliers: One Outlier

Transform: None

Manganese, dissolved, mg/L

Location: MW7

Mean of all data: 0.0455

Standard Deviation of all data: 0.163

Largest Observation Concentration of all data: $X_n = 1.16$

Test Statistic, high extreme of all data: $T_n = 6.84$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
07/09/2012	1.16	False		1

Manganese, dissolved, mg/L

Location: MW7D

Mean of all data: 0.500

Standard Deviation of all data: 0.514

Largest Observation Concentration of all data: $X_n = 3.23$

Test Statistic, high extreme of all data: $T_n = 5.31$

T Critical of all data: $T_{cr} = 2.96$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
09/14/2015	3.23	False		1

Manganese, dissolved, mg/L

Location: MW8

Mean of all data: 1.59

Standard Deviation of all data: 1.37

Largest Observation Concentration of all data: $X_n = 4.11$

Test Statistic, high extreme of all data: $T_n = 1.84$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
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No Outliers

Hutsonville Ash Impoundment Outlier Analysis Results

User Supplied Information

Date Range: 01/01/1984 to 10/23/2023

LT Multiplier: x 0.50

Confidence Level: 95%

Number of Outliers: One Outlier

Transform: None

Mercury, dissolved, mg/L

Location: MW115D

Mean of all data: 0.0000923

Standard Deviation of all data: 0.000274

Largest Observation Concentration of all data: $X_n = 0.00200$

Test Statistic, high extreme of all data: $T_n = 6.96$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
10/10/2013	0.00200	False		1

Mercury, dissolved, mg/L

Location: MW115S

Mean of all data: 0.0000538

Standard Deviation of all data: 0.0000503

Largest Observation Concentration of all data: $X_n = 0.000100$

Test Statistic, high extreme of all data: $T_n = 0.917$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
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No Outliers

Mercury, dissolved, mg/L

Location: MW11R

Mean of all data: 0.000102

Standard Deviation of all data: 0.000280

Largest Observation Concentration of all data: $X_n = 0.00200$

Test Statistic, high extreme of all data: $T_n = 6.77$

T Critical of all data: $T_{cr} = 2.96$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
10/10/2013	0.00200	False		1

Hutsonville Ash Impoundment Outlier Analysis Results

User Supplied Information

Date Range: 01/01/1984 to 10/23/2023

LT Multiplier: x 0.50

Confidence Level: 95%

Number of Outliers: One Outlier

Transform: None

Mercury, dissolved, mg/L

Location: MW121

Mean of all data: 0.0000538

Standard Deviation of all data: 0.0000503

Largest Observation Concentration of all data: $X_n = 0.000100$

Test Statistic, high extreme of all data: $T_n = 0.917$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
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No Outliers

Mercury, dissolved, mg/L

Location: MW14

Mean of all data: 0.000102

Standard Deviation of all data: 0.000275

Largest Observation Concentration of all data: $X_n = 0.00200$

Test Statistic, high extreme of all data: $T_n = 6.89$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
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10/10/2013	0.00200	False		1
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Mercury, dissolved, mg/L

Location: MW23D

Mean of all data: 0.000100

Standard Deviation of all data: 0.00000000000257

Largest Observation Concentration of all data: $X_n = 0.000100$

Test Statistic, high extreme of all data: $T_n = 0.0$

T Critical of all data: $T_{cr} = 0.0$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
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No Outliers

Hutsonville Ash Impoundment Outlier Analysis Results

User Supplied Information

Date Range: 01/01/1984 to 10/23/2023

LT Multiplier: x 0.50

Confidence Level: 95%

Number of Outliers: One Outlier

Transform: None

Mercury, dissolved, mg/L

Location: MW23S

Mean of all data: 0.000136

Standard Deviation of all data: 0.000180

Largest Observation Concentration of all data: $X_n = 0.00100$

Test Statistic, high extreme of all data: $T_n = 4.80$

T Critical of all data: $T_{cr} = 2.66$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
08/26/2019	<0.00100	True		1

Mercury, dissolved, mg/L

Location: MW6

Mean of all data: 0.0000721

Standard Deviation of all data: 0.000139

Largest Observation Concentration of all data: $X_n = 0.000900$

Test Statistic, high extreme of all data: $T_n = 5.97$

T Critical of all data: $T_{cr} = 2.90$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
07/21/2014	0.000900	False		1

Mercury, dissolved, mg/L

Location: MW7

Mean of all data: 0.0000596

Standard Deviation of all data: 0.0000603

Largest Observation Concentration of all data: $X_n = 0.000300$

Test Statistic, high extreme of all data: $T_n = 3.99$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
04/13/2012	0.000300	False		1

Based on Grubbs one-sided outlier test

Hutsonville Ash Impoundment Outlier Analysis Results

User Supplied Information

Date Range: 01/01/1984 to 10/23/2023

LT Multiplier: x 0.50

Confidence Level: 95%

Number of Outliers: One Outlier

Transform: None

Mercury, dissolved, mg/L

Location: MW7D

Mean of all data: 0.0000588

Standard Deviation of all data: 0.0000536

Largest Observation Concentration of all data: $X_n = 0.000200$

Test Statistic, high extreme of all data: $T_n = 2.63$

T Critical of all data: $T_{cr} = 2.96$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
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No Outliers

Mercury, dissolved, mg/L

Location: MW8

Mean of all data: 0.000500

Standard Deviation of all data: 0.00304

Largest Observation Concentration of all data: $X_n = 0.0220$

Test Statistic, high extreme of all data: $T_n = 7.07$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
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04/21/2014	0.0220	False		1
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Nickel, dissolved, mg/L

Location: MW115D

Mean of all data: 0.00226

Standard Deviation of all data: 0.00384

Largest Observation Concentration of all data: $X_n = 0.0240$

Test Statistic, high extreme of all data: $T_n = 5.66$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
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04/21/2014	0.0240	False		1
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Hutsonville Ash Impoundment Outlier Analysis Results

User Supplied Information

Date Range: 01/01/1984 to 10/23/2023

LT Multiplier: x 0.50

Confidence Level: 95%

Number of Outliers: One Outlier

Transform: None

Nickel, dissolved, mg/L

Location: MW115S

Mean of all data: 0.00288

Standard Deviation of all data: 0.00390

Largest Observation Concentration of all data: $X_n = 0.0180$

Test Statistic, high extreme of all data: $T_n = 3.87$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
04/21/2014	0.0180	False		1

Nickel, dissolved, mg/L

Location: MW11R

Mean of all data: 0.00716

Standard Deviation of all data: 0.0100

Largest Observation Concentration of all data: $X_n = 0.0410$

Test Statistic, high extreme of all data: $T_n = 3.37$

T Critical of all data: $T_{cr} = 2.96$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
01/20/2014	0.0410	False		1

Nickel, dissolved, mg/L

Location: MW121

Mean of all data: 0.00239

Standard Deviation of all data: 0.00370

Largest Observation Concentration of all data: $X_n = 0.0170$

Test Statistic, high extreme of all data: $T_n = 3.95$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
11/03/2014	0.0170	False		1

Based on Grubbs one-sided outlier test

Hutsonville Ash Impoundment Outlier Analysis Results

User Supplied Information

Date Range: 01/01/1984 to 10/23/2023

LT Multiplier: x 0.50

Confidence Level: 95%

Number of Outliers: One Outlier

Transform: None

Nickel, dissolved, mg/L

Location: MW14

Mean of all data: 0.00425

Standard Deviation of all data: 0.00459

Largest Observation Concentration of all data: $X_n = 0.0170$

Test Statistic, high extreme of all data: $T_n = 2.78$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
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No Outliers

Nickel, dissolved, mg/L

Location: MW23D

Mean of all data: 0.00238

Standard Deviation of all data: 0.00922

Largest Observation Concentration of all data: $X_n = 0.0465$

Test Statistic, high extreme of all data: $T_n = 4.78$

T Critical of all data: $T_{cr} = 2.66$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
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10/28/2019	0.0465	False		1
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Nickel, dissolved, mg/L

Location: MW23S

Mean of all data: 0.00521

Standard Deviation of all data: 0.0237

Largest Observation Concentration of all data: $X_n = 0.119$

Test Statistic, high extreme of all data: $T_n = 4.80$

T Critical of all data: $T_{cr} = 2.66$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
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10/28/2019	0.119	False		1
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Hutsonville Ash Impoundment Outlier Analysis Results

User Supplied Information

Date Range: 01/01/1984 to 10/23/2023

LT Multiplier: x 0.50

Confidence Level: 95%

Number of Outliers: One Outlier

Transform: None

Nickel, dissolved, mg/L

Location: MW6

Mean of all data: 0.00536

Standard Deviation of all data: 0.00809

Largest Observation Concentration of all data: $X_n = 0.0300$

Test Statistic, high extreme of all data: $T_n = 3.05$

T Critical of all data: $T_{cr} = 2.90$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
08/26/2013	0.0300	False		1

Nickel, dissolved, mg/L

Location: MW7

Mean of all data: 0.00563

Standard Deviation of all data: 0.0147

Largest Observation Concentration of all data: $X_n = 0.102$

Test Statistic, high extreme of all data: $T_n = 6.55$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
08/26/2013	0.102	False		1

Nickel, dissolved, mg/L

Location: MW7D

Mean of all data: 0.00787

Standard Deviation of all data: 0.0332

Largest Observation Concentration of all data: $X_n = 0.238$

Test Statistic, high extreme of all data: $T_n = 6.93$

T Critical of all data: $T_{cr} = 2.96$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
08/26/2013	0.238	False		1

Based on Grubbs one-sided outlier test

Hutsonville Ash Impoundment Outlier Analysis Results

User Supplied Information

Date Range: 01/01/1984 to 10/23/2023

LT Multiplier: x 0.50

Confidence Level: 95%

Number of Outliers: One Outlier

Transform: None

Nickel, dissolved, mg/L

Location: MW8

Mean of all data: 0.0108

Standard Deviation of all data: 0.00881

Largest Observation Concentration of all data: $X_n = 0.0370$

Test Statistic, high extreme of all data: $T_n = 2.97$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
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No Outliers

Nitrate nitrogen, dissolved, mg/L

Location: MW115D

Mean of all data: 1.26

Standard Deviation of all data: 1.82

Largest Observation Concentration of all data: $X_n = 5.32$

Test Statistic, high extreme of all data: $T_n = 2.23$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
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No Outliers

Nitrate nitrogen, dissolved, mg/L

Location: MW115S

Mean of all data: 0.300

Standard Deviation of all data: 0.592

Largest Observation Concentration of all data: $X_n = 2.40$

Test Statistic, high extreme of all data: $T_n = 3.55$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
07/12/2011	2.40	False		1

Hutsonville Ash Impoundment Outlier Analysis Results

User Supplied Information

Date Range: 01/01/1984 to 10/23/2023

LT Multiplier: x 0.50

Confidence Level: 95%

Number of Outliers: One Outlier

Transform: None

Nitrate nitrogen, dissolved, mg/L

Location: MW11R

Mean of all data: 4.80

Standard Deviation of all data: 4.01

Largest Observation Concentration of all data: $X_n = 17.0$

Test Statistic, high extreme of all data: $T_n = 3.04$

T Critical of all data: $T_{cr} = 2.96$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
09/14/2015	17.0	False		1

Nitrate nitrogen, dissolved, mg/L

Location: MW121

Mean of all data: 0.379

Standard Deviation of all data: 0.860

Largest Observation Concentration of all data: $X_n = 3.72$

Test Statistic, high extreme of all data: $T_n = 3.88$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
04/21/2014	3.72	False		1

Nitrate nitrogen, dissolved, mg/L

Location: MW14

Mean of all data: 0.230

Standard Deviation of all data: 0.461

Largest Observation Concentration of all data: $X_n = 2.72$

Test Statistic, high extreme of all data: $T_n = 5.41$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
06/02/2016	2.72	False		1

Based on Grubbs one-sided outlier test

Hutsonville Ash Impoundment Outlier Analysis Results

User Supplied Information

Date Range: 01/01/1984 to 10/23/2023

LT Multiplier: x 0.50

Confidence Level: 95%

Number of Outliers: One Outlier

Transform: None

Nitrate nitrogen, dissolved, mg/L

Location: MW23D

Mean of all data: 0.0860

Standard Deviation of all data: 0.0229

Largest Observation Concentration of all data: $X_n = 0.100$

Test Statistic, high extreme of all data: $T_n = 0.611$

T Critical of all data: $T_{cr} = 2.66$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
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No Outliers

Nitrate nitrogen, dissolved, mg/L

Location: MW23S

Mean of all data: 0.191

Standard Deviation of all data: 0.116

Largest Observation Concentration of all data: $X_n = 0.450$

Test Statistic, high extreme of all data: $T_n = 2.23$

T Critical of all data: $T_{cr} = 2.66$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
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No Outliers

Nitrate nitrogen, dissolved, mg/L

Location: MW6

Mean of all data: 3.12

Standard Deviation of all data: 2.99

Largest Observation Concentration of all data: $X_n = 10.2$

Test Statistic, high extreme of all data: $T_n = 2.37$

T Critical of all data: $T_{cr} = 2.90$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
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No Outliers

Hutsonville Ash Impoundment Outlier Analysis Results

User Supplied Information

Date Range: 01/01/1984 to 10/23/2023

LT Multiplier: x 0.50

Confidence Level: 95%

Number of Outliers: One Outlier

Transform: None

Nitrate nitrogen, dissolved, mg/L

Location: MW7

Mean of all data: 0.770

Standard Deviation of all data: 0.518

Largest Observation Concentration of all data: $X_n = 1.95$

Test Statistic, high extreme of all data: $T_n = 2.28$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
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No Outliers

Nitrate nitrogen, dissolved, mg/L

Location: MW7D

Mean of all data: 0.232

Standard Deviation of all data: 0.487

Largest Observation Concentration of all data: $X_n = 2.92$

Test Statistic, high extreme of all data: $T_n = 5.52$

T Critical of all data: $T_{cr} = 2.96$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
04/20/2015	2.92	False		1

Nitrate nitrogen, dissolved, mg/L

Location: MW8

Mean of all data: 0.0798

Standard Deviation of all data: 0.0898

Largest Observation Concentration of all data: $X_n = 0.410$

Test Statistic, high extreme of all data: $T_n = 3.68$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
03/12/2018	0.410	False		1

Hutsonville Ash Impoundment Outlier Analysis Results

User Supplied Information

Date Range: 01/01/1984 to 10/23/2023

LT Multiplier: x 0.50

Confidence Level: 95%

Number of Outliers: One Outlier

Transform: None

pH (field), STD

Location: MW115D

Mean of all data: 7.40

Standard Deviation of all data: 0.33

Largest Observation Concentration of all data: $X_n = 8.24$

Test Statistic, high extreme of all data: $T_n = 2.58$

T Critical of all data: $T_{cr} = 3.08$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	Outlier <u>Low Side</u>	Outlier <u>High Side</u>
06/09/2009	6.30	False	-1	

pH (field), STD

Location: MW115S

Mean of all data: 7.41

Standard Deviation of all data: 0.30

Largest Observation Concentration of all data: $X_n = 7.97$

Test Statistic, high extreme of all data: $T_n = 1.89$

T Critical of all data: $T_{cr} = 3.08$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	Outlier <u>Low Side</u>	Outlier <u>High Side</u>
03/04/2009	6.00	False	-1	

pH (field), STD

Location: MW11R

Mean of all data: 6.82

Standard Deviation of all data: 0.38

Largest Observation Concentration of all data: $X_n = 7.47$

Test Statistic, high extreme of all data: $T_n = 1.72$

T Critical of all data: $T_{cr} = 3.14$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	Outlier <u>Low Side</u>	Outlier <u>High Side</u>
01/20/2014	5.31	False	-1	

Based on Grubbs one-sided outlier test

Hutsonville Ash Impoundment Outlier Analysis Results

User Supplied Information

Date Range: 01/01/1984 to 10/23/2023

LT Multiplier: x 0.50

Confidence Level: 95%

Number of Outliers: One Outlier

Transform: None

pH (field), STD

Location: MW121

Mean of all data: 7.33

Standard Deviation of all data: 0.25

Largest Observation Concentration of all data: $X_n = 7.90$

Test Statistic, high extreme of all data: $T_n = 2.24$

T Critical of all data: $T_{cr} = 3.14$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	Outlier <u>Low Side</u>	Outlier <u>High Side</u>
03/11/2009	6.40	False	-1	

pH (field), STD

Location: MW14

Mean of all data: 6.98

Standard Deviation of all data: 0.28

Largest Observation Concentration of all data: $X_n = 7.89$

Test Statistic, high extreme of all data: $T_n = 3.23$

T Critical of all data: $T_{cr} = 3.14$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	Outlier <u>Low Side</u>	Outlier <u>High Side</u>
09/14/2015	7.89	False		1

pH (field), STD

Location: MW23D

Mean of all data: 7.17

Standard Deviation of all data: 0.69

Largest Observation Concentration of all data: $X_n = 8.40$

Test Statistic, high extreme of all data: $T_n = 1.79$

T Critical of all data: $T_{cr} = 2.66$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	Outlier <u>Low Side</u>	Outlier <u>High Side</u>
08/08/2022	4.83	False	-1	

Based on Grubbs one-sided outlier test

Hutsonville Ash Impoundment Outlier Analysis Results

User Supplied Information

Date Range: 01/01/1984 to 10/23/2023

LT Multiplier: x 0.50

Confidence Level: 95%

Number of Outliers: One Outlier

Transform: None

pH (field), STD

Location: MW23S

Mean of all data: 6.83

Standard Deviation of all data: 0.66

Largest Observation Concentration of all data: $X_n = 7.35$

Test Statistic, high extreme of all data: $T_n = 0.79$

T Critical of all data: $T_{cr} = 2.66$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
10/28/2019	3.75	False	-1	

pH (field), STD

Location: MW6

Mean of all data: 6.88

Standard Deviation of all data: 0.27

Largest Observation Concentration of all data: $X_n = 7.60$

Test Statistic, high extreme of all data: $T_n = 2.69$

T Critical of all data: $T_{cr} = 3.24$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
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No Outliers

pH (field), STD

Location: MW7

Mean of all data: 6.92

Standard Deviation of all data: 0.23

Largest Observation Concentration of all data: $X_n = 7.98$

Test Statistic, high extreme of all data: $T_n = 4.63$

T Critical of all data: $T_{cr} = 3.26$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
03/30/1999	7.98	False		1

Hutsonville Ash Impoundment Outlier Analysis Results

User Supplied Information

Date Range: 01/01/1984 to 10/23/2023

LT Multiplier: x 0.50

Confidence Level: 95%

Number of Outliers: One Outlier

Transform: None

pH (field), STD

Location: MW7D

Mean of all data: 7.29

Standard Deviation of all data: 0.33

Largest Observation Concentration of all data: $X_n = 8.64$

Test Statistic, high extreme of all data: $T_n = 4.05$

T Critical of all data: $T_{cr} = 3.15$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
08/26/2013	8.64	False		1

pH (field), STD

Location: MW8

Mean of all data: 7.07

Standard Deviation of all data: 0.25

Largest Observation Concentration of all data: $X_n = 7.92$

Test Statistic, high extreme of all data: $T_n = 3.36$

T Critical of all data: $T_{cr} = 3.26$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
02/26/1999	7.92	False		1

Selenium, dissolved, mg/L

Location: MW115D

Mean of all data: 0.000665

Standard Deviation of all data: 0.00147

Largest Observation Concentration of all data: $X_n = 0.0100$

Test Statistic, high extreme of all data: $T_n = 6.36$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
10/10/2013	0.0100	False		1

Based on Grubbs one-sided outlier test

Hutsonville Ash Impoundment Outlier Analysis Results

User Supplied Information

Date Range: 01/01/1984 to 10/23/2023

LT Multiplier: x 0.50

Confidence Level: 95%

Number of Outliers: One Outlier

Transform: None

Selenium, dissolved, mg/L

Location: MW115S

Mean of all data: 0.000571

Standard Deviation of all data: 0.00141

Largest Observation Concentration of all data: $X_n = 0.0100$

Test Statistic, high extreme of all data: $T_n = 6.66$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT Value</u>	Outlier <u>Low Side</u>	Outlier <u>High Side</u>
10/10/2013	0.0100	False		1

Selenium, dissolved, mg/L

Location: MW11R

Mean of all data: 0.00169

Standard Deviation of all data: 0.00352

Largest Observation Concentration of all data: $X_n = 0.0170$

Test Statistic, high extreme of all data: $T_n = 4.35$

T Critical of all data: $T_{cr} = 2.96$

<u>Sample Date</u>	<u>Value</u>	<u>LT Value</u>	Outlier <u>Low Side</u>	Outlier <u>High Side</u>
07/12/2011	0.0170	False		1

Selenium, dissolved, mg/L

Location: MW121

Mean of all data: 0.000579

Standard Deviation of all data: 0.00153

Largest Observation Concentration of all data: $X_n = 0.0110$

Test Statistic, high extreme of all data: $T_n = 6.81$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT Value</u>	Outlier <u>Low Side</u>	Outlier <u>High Side</u>
10/10/2013	0.0110	False		1

Based on Grubbs one-sided outlier test

Hutsonville Ash Impoundment Outlier Analysis Results

User Supplied Information

Date Range: 01/01/1984 to 10/23/2023

LT Multiplier: x 0.50

Confidence Level: 95%

Number of Outliers: One Outlier

Transform: None

Selenium, dissolved, mg/L

Location: MW14

Mean of all data: 0.00134

Standard Deviation of all data: 0.00547

Largest Observation Concentration of all data: $X_n = 0.0387$

Test Statistic, high extreme of all data: $T_n = 6.83$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
04/20/2015	0.0387	False		1

Selenium, dissolved, mg/L

Location: MW23D

Mean of all data: 0.000680

Standard Deviation of all data: 0.000900

Largest Observation Concentration of all data: $X_n = 0.00500$

Test Statistic, high extreme of all data: $T_n = 4.80$

T Critical of all data: $T_{cr} = 2.66$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
10/28/2019	<0.00500	True		1

Selenium, dissolved, mg/L

Location: MW23S

Mean of all data: 0.000680

Standard Deviation of all data: 0.000900

Largest Observation Concentration of all data: $X_n = 0.00500$

Test Statistic, high extreme of all data: $T_n = 4.80$

T Critical of all data: $T_{cr} = 2.66$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
10/28/2019	<0.00500	True		1

Based on Grubbs one-sided outlier test

Hutsonville Ash Impoundment Outlier Analysis Results

User Supplied Information

Date Range: 01/01/1984 to 10/23/2023

LT Multiplier: x 0.50

Confidence Level: 95%

Number of Outliers: One Outlier

Transform: None

Selenium, dissolved, mg/L

Location: MW6

Mean of all data: 0.00292

Standard Deviation of all data: 0.00297

Largest Observation Concentration of all data: $X_n = 0.0120$

Test Statistic, high extreme of all data: $T_n = 3.05$

T Critical of all data: $T_{cr} = 2.90$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
08/26/2013	0.0120	False		1

Selenium, dissolved, mg/L

Location: MW7

Mean of all data: 0.00169

Standard Deviation of all data: 0.00214

Largest Observation Concentration of all data: $X_n = 0.0100$

Test Statistic, high extreme of all data: $T_n = 3.88$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
07/12/2011	0.0100	False		1

Selenium, dissolved, mg/L

Location: MW7D

Mean of all data: 0.000908

Standard Deviation of all data: 0.00294

Largest Observation Concentration of all data: $X_n = 0.0210$

Test Statistic, high extreme of all data: $T_n = 6.84$

T Critical of all data: $T_{cr} = 2.96$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
03/15/2012	0.0210	False		1

Based on Grubbs one-sided outlier test

Hutsonville Ash Impoundment Outlier Analysis Results

User Supplied Information

Date Range: 01/01/1984 to 10/23/2023

LT Multiplier: x 0.50

Confidence Level: 95%

Number of Outliers: One Outlier

Transform: None

Selenium, dissolved, mg/L

Location: MW8

Mean of all data: 0.00125

Standard Deviation of all data: 0.00293

Largest Observation Concentration of all data: $X_n = 0.0160$

Test Statistic, high extreme of all data: $T_n = 5.03$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT Value</u>	Outlier <u>Low Side</u>	Outlier <u>High Side</u>
07/21/2014	0.0160	False		1

Silver, dissolved, mg/L

Location: MW115D

Mean of all data: 0.000423

Standard Deviation of all data: 0.00180

Largest Observation Concentration of all data: $X_n = 0.0130$

Test Statistic, high extreme of all data: $T_n = 6.98$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT Value</u>	Outlier <u>Low Side</u>	Outlier <u>High Side</u>
10/10/2013	0.0130	False		1

Silver, dissolved, mg/L

Location: MW115S

Mean of all data: 0.000135

Standard Deviation of all data: 0.000126

Largest Observation Concentration of all data: $X_n = 0.000250$

Test Statistic, high extreme of all data: $T_n = 0.917$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT Value</u>	Outlier <u>Low Side</u>	Outlier <u>High Side</u>
<i>No Outliers</i>				

Hutsonville Ash Impoundment Outlier Analysis Results

User Supplied Information

Date Range: 01/01/1984 to 10/23/2023

LT Multiplier: x 0.50

Confidence Level: 95%

Number of Outliers: One Outlier

Transform: None

Silver, dissolved, mg/L

Location: MW11R

Mean of all data: 0.000412

Standard Deviation of all data: 0.00195

Largest Observation Concentration of all data: $X_n = 0.0140$

Test Statistic, high extreme of all data: $T_n = 6.98$

T Critical of all data: $T_{cr} = 2.96$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
10/10/2013	0.0140	False		1

Silver, dissolved, mg/L

Location: MW121

Mean of all data: 0.000173

Standard Deviation of all data: 0.000287

Largest Observation Concentration of all data: $X_n = 0.00200$

Test Statistic, high extreme of all data: $T_n = 6.37$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
11/03/2014	0.00200	False		1

Silver, dissolved, mg/L

Location: MW14

Mean of all data: 0.000327

Standard Deviation of all data: 0.00137

Largest Observation Concentration of all data: $X_n = 0.0100$

Test Statistic, high extreme of all data: $T_n = 7.04$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
10/10/2013	0.0100	False		1

Based on Grubbs one-sided outlier test

**Hutsonville Ash Impoundment
Outlier Analysis Results**

User Supplied Information

Date Range: 01/01/1984 to 10/23/2023

LT Multiplier: x 0.50

Confidence Level: 95%

Number of Outliers: One Outlier

Transform: None

Silver, dissolved, mg/L

Location: MW23D

Mean of all data: 0.000250

Standard Deviation of all data: 0.0

Largest Observation Concentration of all data: $X_n = 0.000250$

Test Statistic, high extreme of all data: $T_n = 0.0$

T Critical of all data: $T_{cr} = 0.0$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
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No Outliers

Silver, dissolved, mg/L

Location: MW23S

Mean of all data: 0.000250

Standard Deviation of all data: 0.0

Largest Observation Concentration of all data: $X_n = 0.000250$

Test Statistic, high extreme of all data: $T_n = 0.0$

T Critical of all data: $T_{cr} = 0.0$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
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No Outliers

Silver, dissolved, mg/L

Location: MW6

Mean of all data: 0.000128

Standard Deviation of all data: 0.000126

Largest Observation Concentration of all data: $X_n = 0.000250$

Test Statistic, high extreme of all data: $T_n = 0.966$

T Critical of all data: $T_{cr} = 2.90$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
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No Outliers

**Hutsonville Ash Impoundment
Outlier Analysis Results**

User Supplied Information

Date Range: 01/01/1984 to 10/23/2023

LT Multiplier: x 0.50

Confidence Level: 95%

Number of Outliers: One Outlier

Transform: None

Silver, dissolved, mg/L

Location: MW7

Mean of all data: 0.000135

Standard Deviation of all data: 0.000126

Largest Observation Concentration of all data: $X_n = 0.000250$

Test Statistic, high extreme of all data: $T_n = 0.917$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
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No Outliers

Silver, dissolved, mg/L

Location: MW7D

Mean of all data: 0.000137

Standard Deviation of all data: 0.000126

Largest Observation Concentration of all data: $X_n = 0.000250$

Test Statistic, high extreme of all data: $T_n = 0.897$

T Critical of all data: $T_{cr} = 2.96$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
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No Outliers

Silver, dissolved, mg/L

Location: MW8

Mean of all data: 0.000135

Standard Deviation of all data: 0.000126

Largest Observation Concentration of all data: $X_n = 0.000250$

Test Statistic, high extreme of all data: $T_n = 0.917$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
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No Outliers

**Hutsonville Ash Impoundment
Outlier Analysis Results**

User Supplied Information

Date Range: 01/01/1984 to 10/23/2023

LT Multiplier: x 0.50

Confidence Level: 95%

Number of Outliers: One Outlier

Transform: None

Specific Conductance @ 25C (field), micromhos/cm

Location: MW115D

Mean of all data: 661

Standard Deviation of all data: 229

Largest Observation Concentration of all data: Xn = 1180

Test Statistic, high extreme of all data: Tn = 2

T Critical of all data: Tcr = 3

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
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No Outliers

Specific Conductance @ 25C (field), micromhos/cm

Location: MW115S

Mean of all data: 614

Standard Deviation of all data: 167

Largest Observation Concentration of all data: Xn = 1390

Test Statistic, high extreme of all data: Tn = 5

T Critical of all data: Tcr = 3

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
04/20/2015	1390	False		1

Specific Conductance @ 25C (field), micromhos/cm

Location: MW11R

Mean of all data: 1167

Standard Deviation of all data: 547

Largest Observation Concentration of all data: Xn = 2340

Test Statistic, high extreme of all data: Tn = 2

T Critical of all data: Tcr = 3

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
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No Outliers

Hutsonville Ash Impoundment Outlier Analysis Results

User Supplied Information

Date Range: 01/01/1984 to 10/23/2023

LT Multiplier: x 0.50

Confidence Level: 95%

Number of Outliers: One Outlier

Transform: None

Specific Conductance @ 25C (field), micromhos/cm

Location: MW121

Mean of all data: 596

Standard Deviation of all data: 94

Largest Observation Concentration of all data: Xn = 747

Test Statistic, high extreme of all data: Tn = 2

T Critical of all data: Tcr = 3

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
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No Outliers

Specific Conductance @ 25C (field), micromhos/cm

Location: MW14

Mean of all data: 1009

Standard Deviation of all data: 187

Largest Observation Concentration of all data: Xn = 1270

Test Statistic, high extreme of all data: Tn = 1

T Critical of all data: Tcr = 3

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
11/02/2015	457	False	-1	

Specific Conductance @ 25C (field), micromhos/cm

Location: MW23D

Mean of all data: 523

Standard Deviation of all data: 350

Largest Observation Concentration of all data: Xn = 2180

Test Statistic, high extreme of all data: Tn = 5

T Critical of all data: Tcr = 3

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
10/28/2019	2180	False		1

Based on Grubbs one-sided outlier test

Hutsonville Ash Impoundment Outlier Analysis Results

User Supplied Information

Date Range: 01/01/1984 to 10/23/2023

LT Multiplier: x 0.50

Confidence Level: 95%

Number of Outliers: One Outlier

Transform: None

Specific Conductance @ 25C (field), micromhos/cm

Location: MW23S

Mean of all data: 470

Standard Deviation of all data: 496

Largest Observation Concentration of all data: Xn = 2800

Test Statistic, high extreme of all data: Tn = 5

T Critical of all data: Tcr = 3

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
10/28/2019	2800	False		1

Specific Conductance @ 25C (field), micromhos/cm

Location: MW6

Mean of all data: 950

Standard Deviation of all data: 318

Largest Observation Concentration of all data: Xn = 1566

Test Statistic, high extreme of all data: Tn = 2

T Critical of all data: Tcr = 3

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
<i>No Outliers</i>				

Specific Conductance @ 25C (field), micromhos/cm

Location: MW7

Mean of all data: 1133

Standard Deviation of all data: 191

Largest Observation Concentration of all data: Xn = 1470

Test Statistic, high extreme of all data: Tn = 2

T Critical of all data: Tcr = 3

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
<i>No Outliers</i>				

Hutsonville Ash Impoundment Outlier Analysis Results

User Supplied Information

Date Range: 01/01/1984 to 10/23/2023

LT Multiplier: x 0.50

Confidence Level: 95%

Number of Outliers: One Outlier

Transform: None

Specific Conductance @ 25C (field), micromhos/cm

Location: MW7D

Mean of all data: 763

Standard Deviation of all data: 246

Largest Observation Concentration of all data: Xn = 1340

Test Statistic, high extreme of all data: Tn = 2

T Critical of all data: Tcr = 3

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
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No Outliers

Specific Conductance @ 25C (field), micromhos/cm

Location: MW8

Mean of all data: 1353

Standard Deviation of all data: 366

Largest Observation Concentration of all data: Xn = 1899

Test Statistic, high extreme of all data: Tn = 1

T Critical of all data: Tcr = 3

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
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01/07/2013	20	False	-1	
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Sulfate, dissolved, mg/L

Location: MW115D

Mean of all data: 31.4

Standard Deviation of all data: 7.78

Largest Observation Concentration of all data: Xn = 51.2

Test Statistic, high extreme of all data: Tn = 2.54

T Critical of all data: Tcr = 2.97

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
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No Outliers

Hutsonville Ash Impoundment Outlier Analysis Results

User Supplied Information

Date Range: 01/01/1984 to 10/23/2023

LT Multiplier: x 0.50

Confidence Level: 95%

Number of Outliers: One Outlier

Transform: None

Sulfate, dissolved, mg/L

Location: MW115S

Mean of all data: 38.1

Standard Deviation of all data: 15.1

Largest Observation Concentration of all data: $X_n = 99.8$

Test Statistic, high extreme of all data: $T_n = 4.09$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
03/01/2021	99.8	False		1

Sulfate, dissolved, mg/L

Location: MW11R

Mean of all data: 436.

Standard Deviation of all data: 364.

Largest Observation Concentration of all data: $X_n = 1440$.

Test Statistic, high extreme of all data: $T_n = 2.76$

T Critical of all data: $T_{cr} = 2.96$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
<i>No Outliers</i>				

Sulfate, dissolved, mg/L

Location: MW121

Mean of all data: 26.7

Standard Deviation of all data: 12.9

Largest Observation Concentration of all data: $X_n = 96.6$

Test Statistic, high extreme of all data: $T_n = 5.40$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
08/26/2013	96.6	False		1

Hutsonville Ash Impoundment Outlier Analysis Results

User Supplied Information

Date Range: 01/01/1984 to 10/23/2023

LT Multiplier: x 0.50

Confidence Level: 95%

Number of Outliers: One Outlier

Transform: None

Sulfate, dissolved, mg/L

Location: MW14

Mean of all data: 176.

Standard Deviation of all data: 63.7

Largest Observation Concentration of all data: Xn = 361.

Test Statistic, high extreme of all data: Tn = 2.91

T Critical of all data: Tcr = 2.97

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
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No Outliers

Sulfate, dissolved, mg/L

Location: MW23D

Mean of all data: 78.0

Standard Deviation of all data: 259.

Largest Observation Concentration of all data: Xn = 1320.

Test Statistic, high extreme of all data: Tn = 4.80

T Critical of all data: Tcr = 2.66

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
10/28/2019	1320.	False		1

Sulfate, dissolved, mg/L

Location: MW23S

Mean of all data: 95.6

Standard Deviation of all data: 409.

Largest Observation Concentration of all data: Xn = 2060.

Test Statistic, high extreme of all data: Tn = 4.80

T Critical of all data: Tcr = 2.66

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
10/28/2019	2060.	False		1

Hutsonville Ash Impoundment Outlier Analysis Results

User Supplied Information

Date Range: 01/01/1984 to 10/23/2023

LT Multiplier: x 0.50

Confidence Level: 95%

Number of Outliers: One Outlier

Transform: None

Sulfate, dissolved, mg/L

Location: MW6

Mean of all data: 235.

Standard Deviation of all data: 192.

Largest Observation Concentration of all data: $X_n = 610$.

Test Statistic, high extreme of all data: $T_n = 1.96$

T Critical of all data: $T_{cr} = 2.90$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
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No Outliers

Sulfate, dissolved, mg/L

Location: MW7

Mean of all data: 246.

Standard Deviation of all data: 86.6

Largest Observation Concentration of all data: $X_n = 434$.

Test Statistic, high extreme of all data: $T_n = 2.17$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
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No Outliers

Sulfate, dissolved, mg/L

Location: MW7D

Mean of all data: 90.3

Standard Deviation of all data: 64.0

Largest Observation Concentration of all data: $X_n = 274$.

Test Statistic, high extreme of all data: $T_n = 2.87$

T Critical of all data: $T_{cr} = 2.96$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
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No Outliers

Hutsonville Ash Impoundment Outlier Analysis Results

User Supplied Information

Date Range: 01/01/1984 to 10/23/2023

LT Multiplier: x 0.50

Confidence Level: 95%

Number of Outliers: One Outlier

Transform: None

Sulfate, dissolved, mg/L

Location: MW8

Mean of all data: 645.

Standard Deviation of all data: 128.

Largest Observation Concentration of all data: $X_n = 1120$.

Test Statistic, high extreme of all data: $T_n = 3.72$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT Value</u>	Outlier <u>Low Side</u>	Outlier <u>High Side</u>
05/14/2018	1120.	False		1

Thallium, dissolved, mg/L

Location: MW115D

Mean of all data: 0.000192

Standard Deviation of all data: 0.000416

Largest Observation Concentration of all data: $X_n = 0.00300$

Test Statistic, high extreme of all data: $T_n = 6.75$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT Value</u>	Outlier <u>Low Side</u>	Outlier <u>High Side</u>
01/07/2013	0.00300	False		1

Thallium, dissolved, mg/L

Location: MW115S

Mean of all data: 0.000135

Standard Deviation of all data: 0.000126

Largest Observation Concentration of all data: $X_n = 0.000250$

Test Statistic, high extreme of all data: $T_n = 0.917$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT Value</u>	Outlier <u>Low Side</u>	Outlier <u>High Side</u>
<i>No Outliers</i>				

Hutsonville Ash Impoundment Outlier Analysis Results

User Supplied Information

Date Range: 01/01/1984 to 10/23/2023

LT Multiplier: x 0.50

Confidence Level: 95%

Number of Outliers: One Outlier

Transform: None

Thallium, dissolved, mg/L

Location: MW11R

Mean of all data: 0.000209

Standard Deviation of all data: 0.000542

Largest Observation Concentration of all data: $X_n = 0.00390$

Test Statistic, high extreme of all data: $T_n = 6.81$

T Critical of all data: $T_{cr} = 2.96$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
01/19/2015	0.00390	False		1

Thallium, dissolved, mg/L

Location: MW121

Mean of all data: 0.000192

Standard Deviation of all data: 0.000416

Largest Observation Concentration of all data: $X_n = 0.00300$

Test Statistic, high extreme of all data: $T_n = 6.75$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
11/03/2014	0.00300	False		1

Thallium, dissolved, mg/L

Location: MW14

Mean of all data: 0.000192

Standard Deviation of all data: 0.000416

Largest Observation Concentration of all data: $X_n = 0.00300$

Test Statistic, high extreme of all data: $T_n = 6.75$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
01/07/2013	0.00300	False		1

Based on Grubbs one-sided outlier test

Hutsonville Ash Impoundment Outlier Analysis Results

User Supplied Information

Date Range: 01/01/1984 to 10/23/2023

LT Multiplier: x 0.50

Confidence Level: 95%

Number of Outliers: One Outlier

Transform: None

Thallium, dissolved, mg/L

Location: MW23D

Mean of all data: 0.000250

Standard Deviation of all data: 0.0

Largest Observation Concentration of all data: $X_n = 0.000250$

Test Statistic, high extreme of all data: $T_n = 0.0$

T Critical of all data: $T_{cr} = 0.0$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
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No Outliers

Thallium, dissolved, mg/L

Location: MW23S

Mean of all data: 0.000340

Standard Deviation of all data: 0.000450

Largest Observation Concentration of all data: $X_n = 0.00250$

Test Statistic, high extreme of all data: $T_n = 4.80$

T Critical of all data: $T_{cr} = 2.66$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
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08/26/2019	<0.00250	True		1
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Thallium, dissolved, mg/L

Location: MW6

Mean of all data: 0.000128

Standard Deviation of all data: 0.000126

Largest Observation Concentration of all data: $X_n = 0.000250$

Test Statistic, high extreme of all data: $T_n = 0.966$

T Critical of all data: $T_{cr} = 2.90$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
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No Outliers

Hutsonville Ash Impoundment Outlier Analysis Results

User Supplied Information

Date Range: 01/01/1984 to 10/23/2023

LT Multiplier: x 0.50

Confidence Level: 95%

Number of Outliers: One Outlier

Transform: None

Thallium, dissolved, mg/L

Location: MW7

Mean of all data: 0.000192

Standard Deviation of all data: 0.000416

Largest Observation Concentration of all data: $X_n = 0.00300$

Test Statistic, high extreme of all data: $T_n = 6.75$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
01/07/2013	0.00300	False		1

Thallium, dissolved, mg/L

Location: MW7D

Mean of all data: 0.000275

Standard Deviation of all data: 0.000969

Largest Observation Concentration of all data: $X_n = 0.00700$

Test Statistic, high extreme of all data: $T_n = 6.94$

T Critical of all data: $T_{cr} = 2.96$

<u>Sample Date</u>	<u>Value</u>	<u>LT Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
03/15/2012	0.00700	False		1

Thallium, dissolved, mg/L

Location: MW8

Mean of all data: 0.000154

Standard Deviation of all data: 0.000173

Largest Observation Concentration of all data: $X_n = 0.00100$

Test Statistic, high extreme of all data: $T_n = 4.90$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
07/21/2014	0.00100	False		1

Based on Grubbs one-sided outlier test

Hutsonville Ash Impoundment Outlier Analysis Results

User Supplied Information

Date Range: 01/01/1984 to 10/23/2023

LT Multiplier: x 0.50

Confidence Level: 95%

Number of Outliers: One Outlier

Transform: None

Total Dissolved Solids, mg/L

Location: MW115D

Mean of all data: 385.

Standard Deviation of all data: 158.

Largest Observation Concentration of all data: $X_n = 920$.

Test Statistic, high extreme of all data: $T_n = 3.39$

T Critical of all data: $T_{cr} = 3.05$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
09/14/2015	920.	False		1

Total Dissolved Solids, mg/L

Location: MW115S

Mean of all data: 330.

Standard Deviation of all data: 115.

Largest Observation Concentration of all data: $X_n = 688$.

Test Statistic, high extreme of all data: $T_n = 3.11$

T Critical of all data: $T_{cr} = 3.06$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
06/20/2022	688.	False		1

Total Dissolved Solids, mg/L

Location: MW11R

Mean of all data: 986.

Standard Deviation of all data: 426.

Largest Observation Concentration of all data: $X_n = 1830$.

Test Statistic, high extreme of all data: $T_n = 1.98$

T Critical of all data: $T_{cr} = 3.11$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
<i>No Outliers</i>				

Hutsonville Ash Impoundment Outlier Analysis Results

User Supplied Information

Date Range: 01/01/1984 to 10/23/2023

LT Multiplier: x 0.50

Confidence Level: 95%

Number of Outliers: One Outlier

Transform: None

Total Dissolved Solids, mg/L

Location: MW121

Mean of all data: 343.

Standard Deviation of all data: 92.7

Largest Observation Concentration of all data: $X_n = 604$.

Test Statistic, high extreme of all data: $T_n = 2.82$

T Critical of all data: $T_{cr} = 3.12$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	Outlier <u>Low Side</u>	Outlier <u>High Side</u>
01/20/2014	<0.0	True	-1	

Total Dissolved Solids, mg/L

Location: MW14

Mean of all data: 732.

Standard Deviation of all data: 138.

Largest Observation Concentration of all data: $X_n = 1220$.

Test Statistic, high extreme of all data: $T_n = 3.54$

T Critical of all data: $T_{cr} = 3.12$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	Outlier <u>Low Side</u>	Outlier <u>High Side</u>
10/23/2023	1220.	False		1

Total Dissolved Solids, mg/L

Location: MW23D

Mean of all data: 323.

Standard Deviation of all data: 310.

Largest Observation Concentration of all data: $X_n = 1790$.

Test Statistic, high extreme of all data: $T_n = 4.74$

T Critical of all data: $T_{cr} = 2.66$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	Outlier <u>Low Side</u>	Outlier <u>High Side</u>
10/28/2019	1790.	False		1

Based on Grubbs one-sided outlier test

Hutsonville Ash Impoundment Outlier Analysis Results

User Supplied Information

Date Range: 01/01/1984 to 10/23/2023

LT Multiplier: x 0.50

Confidence Level: 95%

Number of Outliers: One Outlier

Transform: None

Total Dissolved Solids, mg/L

Location: MW23S

Mean of all data: 365.

Standard Deviation of all data: 542.

Largest Observation Concentration of all data: $X_n = 2800$.

Test Statistic, high extreme of all data: $T_n = 4.49$

T Critical of all data: $T_{cr} = 2.66$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
10/28/2019	2800.	False		1

Total Dissolved Solids, mg/L

Location: MW6

Mean of all data: 791.

Standard Deviation of all data: 321.

Largest Observation Concentration of all data: $X_n = 1660$.

Test Statistic, high extreme of all data: $T_n = 2.71$

T Critical of all data: $T_{cr} = 3.22$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
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No Outliers

Total Dissolved Solids, mg/L

Location: MW7

Mean of all data: 833.

Standard Deviation of all data: 156.

Largest Observation Concentration of all data: $X_n = 1320$.

Test Statistic, high extreme of all data: $T_n = 3.11$

T Critical of all data: $T_{cr} = 3.25$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
01/20/2014	230.	False	-1	

Hutsonville Ash Impoundment Outlier Analysis Results

User Supplied Information

Date Range: 01/01/1984 to 10/23/2023

LT Multiplier: x 0.50

Confidence Level: 95%

Number of Outliers: One Outlier

Transform: None

Total Dissolved Solids, mg/L

Location: MW7D

Mean of all data: 464.

Standard Deviation of all data: 182.

Largest Observation Concentration of all data: $X_n = 1010$.

Test Statistic, high extreme of all data: $T_n = 3.00$

T Critical of all data: $T_{cr} = 3.13$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
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No Outliers

Total Dissolved Solids, mg/L

Location: MW8

Mean of all data: 1260.

Standard Deviation of all data: 342.

Largest Observation Concentration of all data: $X_n = 1960$.

Test Statistic, high extreme of all data: $T_n = 2.04$

T Critical of all data: $T_{cr} = 3.25$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
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No Outliers

Zinc, dissolved, mg/L

Location: MW115D

Mean of all data: 0.00716

Standard Deviation of all data: 0.0167

Largest Observation Concentration of all data: $X_n = 0.119$

Test Statistic, high extreme of all data: $T_n = 6.69$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
04/21/2014	0.119	False		1

Hutsonville Ash Impoundment Outlier Analysis Results

User Supplied Information

Date Range: 01/01/1984 to 10/23/2023

LT Multiplier: x 0.50

Confidence Level: 95%

Number of Outliers: One Outlier

Transform: None

Zinc, dissolved, mg/L

Location: MW115S

Mean of all data: 0.00756

Standard Deviation of all data: 0.0150

Largest Observation Concentration of all data: $X_n = 0.0880$

Test Statistic, high extreme of all data: $T_n = 5.36$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
04/21/2014	0.0880	False		1

Zinc, dissolved, mg/L

Location: MW11R

Mean of all data: 0.0153

Standard Deviation of all data: 0.0230

Largest Observation Concentration of all data: $X_n = 0.137$

Test Statistic, high extreme of all data: $T_n = 5.29$

T Critical of all data: $T_{cr} = 2.96$

<u>Sample Date</u>	<u>Value</u>	<u>LT Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
01/20/2014	0.137	False		1

Zinc, dissolved, mg/L

Location: MW121

Mean of all data: 0.00602

Standard Deviation of all data: 0.0114

Largest Observation Concentration of all data: $X_n = 0.0740$

Test Statistic, high extreme of all data: $T_n = 5.96$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT Value</u>	<u>Outlier Low Side</u>	<u>Outlier High Side</u>
04/21/2014	0.0740	False		1

Hutsonville Ash Impoundment Outlier Analysis Results

User Supplied Information

Date Range: 01/01/1984 to 10/23/2023

LT Multiplier: x 0.50

Confidence Level: 95%

Number of Outliers: One Outlier

Transform: None

Zinc, dissolved, mg/L

Location: MW14

Mean of all data: 0.00460

Standard Deviation of all data: 0.00638

Largest Observation Concentration of all data: $X_n = 0.0420$

Test Statistic, high extreme of all data: $T_n = 5.86$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	Outlier <u>Low Side</u>	Outlier <u>High Side</u>
04/21/2014	0.0420	False		1

Zinc, dissolved, mg/L

Location: MW23D

Mean of all data: 0.0124

Standard Deviation of all data: 0.0370

Largest Observation Concentration of all data: $X_n = 0.190$

Test Statistic, high extreme of all data: $T_n = 4.80$

T Critical of all data: $T_{cr} = 2.66$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	Outlier <u>Low Side</u>	Outlier <u>High Side</u>
10/28/2019	0.190	False		1

Zinc, dissolved, mg/L

Location: MW23S

Mean of all data: 0.0288

Standard Deviation of all data: 0.119

Largest Observation Concentration of all data: $X_n = 0.600$

Test Statistic, high extreme of all data: $T_n = 4.80$

T Critical of all data: $T_{cr} = 2.66$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	Outlier <u>Low Side</u>	Outlier <u>High Side</u>
10/28/2019	0.600	False		1

Based on Grubbs one-sided outlier test

Hutsonville Ash Impoundment Outlier Analysis Results

User Supplied Information

Date Range: 01/01/1984 to 10/23/2023

LT Multiplier: x 0.50

Confidence Level: 95%

Number of Outliers: One Outlier

Transform: None

Zinc, dissolved, mg/L

Location: MW6

Mean of all data: 0.00574

Standard Deviation of all data: 0.00623

Largest Observation Concentration of all data: $X_n = 0.0290$

Test Statistic, high extreme of all data: $T_n = 3.73$

T Critical of all data: $T_{cr} = 2.90$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	Outlier <u>Low Side</u>	Outlier <u>High Side</u>
04/21/2014	0.0290	False		1

Zinc, dissolved, mg/L

Location: MW7

Mean of all data: 0.00494

Standard Deviation of all data: 0.00605

Largest Observation Concentration of all data: $X_n = 0.0320$

Test Statistic, high extreme of all data: $T_n = 4.47$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	Outlier <u>Low Side</u>	Outlier <u>High Side</u>
04/21/2014	0.0320	False		1

Zinc, dissolved, mg/L

Location: MW7D

Mean of all data: 0.00562

Standard Deviation of all data: 0.00885

Largest Observation Concentration of all data: $X_n = 0.0480$

Test Statistic, high extreme of all data: $T_n = 4.79$

T Critical of all data: $T_{cr} = 2.96$

<u>Sample Date</u>	<u>Value</u>	<u>LT_Value</u>	Outlier <u>Low Side</u>	Outlier <u>High Side</u>
04/21/2014	0.0480	False		1

Based on Grubbs one-sided outlier test

Hutsonville Ash Impoundment Outlier Analysis Results

User Supplied Information

Date Range: 01/01/1984 to 10/23/2023

LT Multiplier: x 0.50

Confidence Level: 95%

Number of Outliers: One Outlier

Transform: None

Zinc, dissolved, mg/L

Location: MW8

Mean of all data: 0.00754

Standard Deviation of all data: 0.00978

Largest Observation Concentration of all data: $X_n = 0.0600$

Test Statistic, high extreme of all data: $T_n = 5.36$

T Critical of all data: $T_{cr} = 2.97$

<u>Sample Date</u>	<u>Value</u>	<u>LT Value</u>	Outlier <u>Low Side</u>	Outlier <u>High Side</u>
07/21/2014	0.0600	False		1

APPENDIX C3
SEN SLOPE AND MANN KENDALL TESTS – SHORT TERM

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW115D	Parameter Code:	00515
Location Class:	Downgradient	Parameter:	Total Dissolved Solids
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.161	mg/L per period
R-Squared error of fit:	0.0600	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.252	mg/L per period
Lower Confidence Limit of Slope, M1:	-.00300	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.840	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	1.61
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW115D	Parameter Code:	00618
Location Class:	Downgradient	Parameter:	Nitrate nitrogen, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.000783	mg/L per period
R-Squared error of fit:	0.00720	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	-0.00485	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-1.00
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW115D	Parameter Code:	00720
Location Class:	Downgradient	Parameter:	Cyanide, total
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW115D	Parameter Code:	00941
Location Class:	Downgradient	Parameter:	Chloride, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0981	mg/L per period
R-Squared error of fit:	0.251	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.120	mg/L per period
Lower Confidence Limit of Slope, M1:	-.0322	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.376	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	1.36
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW115D	Parameter Code:	00946
Location Class:	Downgradient	Parameter:	Sulfate, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.00930	mg/L per period
R-Squared error of fit:	0.104	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.00391	mg/L per period
Lower Confidence Limit of Slope, M1:	-.0121	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0411	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.748
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW115D	Parameter Code:	00950
Location Class:	Downgradient	Parameter:	Fluoride, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.000115	mg/L per period
R-Squared error of fit:	0.251	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.000225	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	1.32
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW115D	Parameter Code:	01000
Location Class:	Downgradient	Parameter:	Arsenic, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line			
Slope (fitted to data):	0.000000846	mg/L per period	
R-Squared error of fit:	0.0276		
Sen's Non-parametric estimate of the slope (two-tailed test)			
Median Slope:	0.000000823	mg/L per period	
Lower Confidence Limit of Slope, M1:	-.00000269	mg/L per period	
Upper Confidence Limit of Slope, M2+1:	0.00000954	mg/L per period	
Non-parametric Mann-Kendall Test for Trend			
S Statistic:		0.371	
Z test:		1.64	
At the 95.0 % Confidence Level (two-tailed test):		None	

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW115D	Parameter Code:	01005
Location Class:	Downgradient	Parameter:	Barium, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line			
Slope (fitted to data):	0.00000228	mg/L per period	
R-Squared error of fit:	0.00274		
Sen's Non-parametric estimate of the slope (two-tailed test)			
Median Slope:	0.00000925	mg/L per period	
Lower Confidence Limit of Slope, M1:	-.0000362	mg/L per period	
Upper Confidence Limit of Slope, M2+1:	0.0000253	mg/L per period	
Non-parametric Mann-Kendall Test for Trend			
S Statistic:		0.619	
Z test:		1.64	
At the 95.0 % Confidence Level (two-tailed test):		None	

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW115D	Parameter Code:	01010
Location Class:	Downgradient	Parameter:	Beryllium, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW115D	Parameter Code:	01020
Location Class:	Downgradient	Parameter:	Boron, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.000115	mg/L per period
R-Squared error of fit:	0.398	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.000144	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.000327	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	1.93
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	Upward

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW115D	Parameter Code:	01025
Location Class:	Downgradient	Parameter:	Cadmium, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW115D	Parameter Code:	01030
Location Class:	Downgradient	Parameter:	Chromium, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.000000553	mg/L per period
R-Squared error of fit:	0.307	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	1.31
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW115D	Parameter Code:	01035
Location Class:	Downgradient	Parameter:	Cobalt, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW115D	Parameter Code:	01040
Location Class:	Downgradient	Parameter:	Copper, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line		
Slope (fitted to data):	0.000000946	mg/L per period
R-Squared error of fit:	0.0809	
Sen's Non-parametric estimate of the slope (two-tailed test)		
Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period
Non-parametric Mann-Kendall Test for Trend		
S Statistic:	0.436	
Z test:	1.64	
At the 95.0 % Confidence Level (two-tailed test):	None	

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW115D	Parameter Code:	01046
Location Class:	Downgradient	Parameter:	Iron, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.000130	mg/L per period
R-Squared error of fit:	0.0230	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	-0.000539	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0000919	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-0.133
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW115D	Parameter Code:	01049
Location Class:	Downgradient	Parameter:	Lead, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range: 01/01/2022 to 12/31/2023			

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW115D	Parameter Code:	01056
Location Class:	Downgradient	Parameter:	Manganese, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line			
Slope (fitted to data):	0.0000289	mg/L per period	
R-Squared error of fit:	0.00181		
Sen's Non-parametric estimate of the slope (two-tailed test)			
Median Slope:	0.000127	mg/L per period	
Lower Confidence Limit of Slope, M1:	-.000346	mg/L per period	
Upper Confidence Limit of Slope, M2+1:	0.00138	mg/L per period	
Non-parametric Mann-Kendall Test for Trend			
S Statistic:		0.124	
Z test:		1.64	
At the 95.0 % Confidence Level (two-tailed test):		None	

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW115D	Parameter Code:	01057
Location Class:	Downgradient	Parameter:	Thallium, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW115D	Parameter Code:	01065
Location Class:	Downgradient	Parameter:	Nickel, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range: 01/01/2022 to 12/31/2023			

Trend Analysis

Trend of the least squares straight line			
Slope (fitted to data):	-.00000314	mg/L per period	
R-Squared error of fit:	0.306		
Sen's Non-parametric estimate of the slope (two-tailed test)			
Median Slope:	-.00000184	mg/L per period	
Lower Confidence Limit of Slope, M1:	-.00000842	mg/L per period	
Upper Confidence Limit of Slope, M2+1:	0.00000159	mg/L per period	
Non-parametric Mann-Kendall Test for Trend			
S Statistic:		-1.11	
Z test:		1.64	
At the 95.0 % Confidence Level (two-tailed test):		None	

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW115D	Parameter Code:	01075
Location Class:	Downgradient	Parameter:	Silver, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW115D	Parameter Code:	01090
Location Class:	Downgradient	Parameter:	Zinc, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW115D	Parameter Code:	01095
Location Class:	Downgradient	Parameter:	Antimony, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW115D	Parameter Code:	01145
Location Class:	Downgradient	Parameter:	Selenium, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW115D	Parameter Code:	71890
Location Class:	Downgradient	Parameter:	Mercury, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW115S	Parameter Code:	00515
Location Class:	Downgradient	Parameter:	Total Dissolved Solids
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.139	mg/L per period
R-Squared error of fit:	0.0811	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	-0.0165	mg/L per period
Lower Confidence Limit of Slope, M1:	-0.457	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.166	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-0.124
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW115S	Parameter Code:	00618
Location Class:	Downgradient	Parameter:	Nitrate nitrogen, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW115S	Parameter Code:	00720
Location Class:	Downgradient	Parameter:	Cyanide, total
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.000443	mg/L per period
R-Squared error of fit:	0.145	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-0.873
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW115S	Parameter Code:	00941
Location Class:	Downgradient	Parameter:	Chloride, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0110	mg/L per period
R-Squared error of fit:	0.358	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.00986	mg/L per period
Lower Confidence Limit of Slope, M1:	-.00346	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0201	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.997
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW115S	Parameter Code:	00946
Location Class:	Downgradient	Parameter:	Sulfate, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.00232	mg/L per period
R-Squared error of fit:	0.0173	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	-0.00176	mg/L per period
Lower Confidence Limit of Slope, M1:	-0.0151	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0185	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-0.124
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW115S	Parameter Code:	00950
Location Class:	Downgradient	Parameter:	Fluoride, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW115S	Parameter Code:	01000
Location Class:	Downgradient	Parameter:	Arsenic, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.00000210	mg/L per period
R-Squared error of fit:	0.00932	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	-0.00000210	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.00000115	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW115S	Parameter Code:	01005
Location Class:	Downgradient	Parameter:	Barium, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.00000927	mg/L per period
R-Squared error of fit:	0.00681	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	-0.0000276	mg/L per period
Lower Confidence Limit of Slope, M1:	-0.0000989	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0000102	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-0.377
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW115S	Parameter Code:	01010
Location Class:	Downgradient	Parameter:	Beryllium, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW115S	Parameter Code:	01020
Location Class:	Downgradient	Parameter:	Boron, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-.000296	mg/L per period
R-Squared error of fit:	0.801	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	-.000258	mg/L per period
Lower Confidence Limit of Slope, M1:	-.000418	mg/L per period
Upper Confidence Limit of Slope, M2+1:	-.000153	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-2.53
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	Downward

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW115S	Parameter Code:	01025
Location Class:	Downgradient	Parameter:	Cadmium, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW115S	Parameter Code:	01030
Location Class:	Downgradient	Parameter:	Chromium, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW115S	Parameter Code:	01035
Location Class:	Downgradient	Parameter:	Cobalt, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW115S	Parameter Code:	01040
Location Class:	Downgradient	Parameter:	Copper, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW115S	Parameter Code:	01046
Location Class:	Downgradient	Parameter:	Iron, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range: 01/01/2022 to 12/31/2023			

Trend Analysis

Trend of the least squares straight line			
Slope (fitted to data):	-.000139	mg/L per period	
R-Squared error of fit:	0.0409		
Sen's Non-parametric estimate of the slope (two-tailed test)			
Median Slope:	-.0000363	mg/L per period	
Lower Confidence Limit of Slope, M1:	-.000396	mg/L per period	
Upper Confidence Limit of Slope, M2+1:	0.0000886	mg/L per period	
Non-parametric Mann-Kendall Test for Trend			
S Statistic:		-.377	
Z test:		1.64	
At the 95.0 % Confidence Level (two-tailed test):		None	

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW115S	Parameter Code:	01049
Location Class:	Downgradient	Parameter:	Lead, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW115S	Parameter Code:	01056
Location Class:	Downgradient	Parameter:	Manganese, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range: 01/01/2022 to 12/31/2023			

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.000162	mg/L per period
R-Squared error of fit:	0.145	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.000132	mg/L per period
Lower Confidence Limit of Slope, M1:	-.000200	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.000524	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.499
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW115S	Parameter Code:	01057
Location Class:	Downgradient	Parameter:	Thallium, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW115S	Parameter Code:	01065
Location Class:	Downgradient	Parameter:	Nickel, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.00000274	mg/L per period
R-Squared error of fit:	0.0328	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	-0.00000230	mg/L per period
Lower Confidence Limit of Slope, M1:	-0.00000143	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.000000853	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-0.385
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW115S	Parameter Code:	01075
Location Class:	Downgradient	Parameter:	Silver, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW115S	Parameter Code:	01090
Location Class:	Downgradient	Parameter:	Zinc, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW115S	Parameter Code:	01095
Location Class:	Downgradient	Parameter:	Antimony, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW115S	Parameter Code:	01145
Location Class:	Downgradient	Parameter:	Selenium, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW115S	Parameter Code:	71890
Location Class:	Downgradient	Parameter:	Mercury, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW11R	Parameter Code:	00515
Location Class:	Downgradient	Parameter:	Total Dissolved Solids
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.136	mg/L per period
R-Squared error of fit:	0.00310	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0675	mg/L per period
Lower Confidence Limit of Slope, M1:	-1.98	mg/L per period
Upper Confidence Limit of Slope, M2+1:	4.06	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW11R	Parameter Code:	00618
Location Class:	Downgradient	Parameter:	Nitrate nitrogen, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.00182	mg/L per period
R-Squared error of fit:	0.0444	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	-0.00277	mg/L per period
Lower Confidence Limit of Slope, M1:	-0.00754	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.00318	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-1.36
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW11R	Parameter Code:	00720
Location Class:	Downgradient	Parameter:	Cyanide, total
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW11R	Parameter Code:	00941
Location Class:	Downgradient	Parameter:	Chloride, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line		
Slope (fitted to data):	0.00557	mg/L per period
R-Squared error of fit:	0.0453	
Sen's Non-parametric estimate of the slope (two-tailed test)		
Median Slope:	0.00313	mg/L per period
Lower Confidence Limit of Slope, M1:	-.0270	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0161	mg/L per period
Non-parametric Mann-Kendall Test for Trend		
S Statistic:		0.124
Z test:		1.64
At the 95.0 % Confidence Level (two-tailed test):		None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW11R	Parameter Code:	00946
Location Class:	Downgradient	Parameter:	Sulfate, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range: 01/01/2022 to 12/31/2023			

Trend Analysis

Trend of the least squares straight line		
Slope (fitted to data):	1.03	mg/L per period
R-Squared error of fit:	0.166	
Sen's Non-parametric estimate of the slope (two-tailed test)		
Median Slope:	1.22	mg/L per period
Lower Confidence Limit of Slope, M1:	-.759	mg/L per period
Upper Confidence Limit of Slope, M2+1:	3.70	mg/L per period
Non-parametric Mann-Kendall Test for Trend		
S Statistic:	0.866	
Z test:	1.64	
At the 95.0 % Confidence Level (two-tailed test):	None	

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW11R	Parameter Code:	00950
Location Class:	Downgradient	Parameter:	Fluoride, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0000473	mg/L per period
R-Squared error of fit:	0.0809	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.436
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW11R	Parameter Code:	01000
Location Class:	Downgradient	Parameter:	Arsenic, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW11R	Parameter Code:	01005
Location Class:	Downgradient	Parameter:	Barium, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0000680	mg/L per period
R-Squared error of fit:	0.206	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0000662	mg/L per period
Lower Confidence Limit of Slope, M1:	-.0000737	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.000149	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.866
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW11R	Parameter Code:	01010
Location Class:	Downgradient	Parameter:	Beryllium, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW11R	Parameter Code:	01020
Location Class:	Downgradient	Parameter:	Boron, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range: 01/01/2022 to 12/31/2023			

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0121	mg/L per period
R-Squared error of fit:	0.110	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0204	mg/L per period
Lower Confidence Limit of Slope, M1:	-.00570	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0561	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	1.36
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW11R	Parameter Code:	01025
Location Class:	Downgradient	Parameter:	Cadmium, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.00000167	mg/L per period
R-Squared error of fit:	0.0828	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-0.436
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW11R	Parameter Code:	01030
Location Class:	Downgradient	Parameter:	Chromium, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.000000553	mg/L per period
R-Squared error of fit:	0.307	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	1.31
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW11R	Parameter Code:	01035
Location Class:	Downgradient	Parameter:	Cobalt, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW11R	Parameter Code:	01040
Location Class:	Downgradient	Parameter:	Copper, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.000000748	mg/L per period
R-Squared error of fit:	0.00719	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW11R	Parameter Code:	01046
Location Class:	Downgradient	Parameter:	Iron, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.000893	mg/L per period
R-Squared error of fit:	0.307	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-1.31
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW11R	Parameter Code:	01049
Location Class:	Downgradient	Parameter:	Lead, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW11R	Parameter Code:	01056
Location Class:	Downgradient	Parameter:	Manganese, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.000106	mg/L per period
R-Squared error of fit:	0.0140	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	-0.000331	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.000545	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW11R	Parameter Code:	01057
Location Class:	Downgradient	Parameter:	Thallium, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW11R	Parameter Code:	01065
Location Class:	Downgradient	Parameter:	Nickel, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line			
Slope (fitted to data):	-0.0000199	mg/L per period	
R-Squared error of fit:	0.188		
Sen's Non-parametric estimate of the slope (two-tailed test)			
Median Slope:	-0.0000184	mg/L per period	
Lower Confidence Limit of Slope, M1:	-0.0000553	mg/L per period	
Upper Confidence Limit of Slope, M2+1:	0.0000328	mg/L per period	
Non-parametric Mann-Kendall Test for Trend			
S Statistic:		-0.997	
Z test:		1.64	
At the 95.0 % Confidence Level (two-tailed test):		None	

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW11R	Parameter Code:	01075
Location Class:	Downgradient	Parameter:	Silver, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range: 01/01/2022 to 12/31/2023			

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW11R	Parameter Code:	01090
Location Class:	Downgradient	Parameter:	Zinc, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.0000823	mg/L per period
R-Squared error of fit:	0.0666	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	-0.0000277	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-0.579
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW11R	Parameter Code:	01095
Location Class:	Downgradient	Parameter:	Antimony, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW11R	Parameter Code:	01145
Location Class:	Downgradient	Parameter:	Selenium, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.00000105	mg/L per period
R-Squared error of fit:	0.173	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.00000200	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	1.00
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW11R	Parameter Code:	71890
Location Class:	Downgradient	Parameter:	Mercury, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW121	Parameter Code:	00515
Location Class:	Background	Parameter:	Total Dissolved Solids
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0764	mg/L per period
R-Squared error of fit:	0.0489	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.129	mg/L per period
Lower Confidence Limit of Slope, M1:	-.234	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.669	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.619
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW121	Parameter Code:	00618
Location Class:	Background	Parameter:	Nitrate nitrogen, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.000836	mg/L per period
R-Squared error of fit:	0.0380	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	-0.000697	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.000129	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-0.399
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW121	Parameter Code:	00720
Location Class:	Background	Parameter:	Cyanide, total
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW121	Parameter Code:	00941
Location Class:	Background	Parameter:	Chloride, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.00579	mg/L per period
R-Squared error of fit:	0.194	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	-0.00570	mg/L per period
Lower Confidence Limit of Slope, M1:	-.0247	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.00501	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-0.866
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW121	Parameter Code:	00946
Location Class:	Background	Parameter:	Sulfate, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range: 01/01/2022 to 12/31/2023			

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0287	mg/L per period
R-Squared error of fit:	0.742	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0279	mg/L per period
Lower Confidence Limit of Slope, M1:	0.00285	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0473	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	2.35
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	Upward

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW121	Parameter Code:	00950
Location Class:	Background	Parameter:	Fluoride, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW121	Parameter Code:	01000
Location Class:	Background	Parameter:	Arsenic, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.00000326	mg/L per period
R-Squared error of fit:	0.567	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.00000385	mg/L per period
Lower Confidence Limit of Slope, M1:	0.00000120	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.00000805	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	2.35
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	Upward

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW121	Parameter Code:	01005
Location Class:	Background	Parameter:	Barium, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range: 01/01/2022 to 12/31/2023			

Trend Analysis

Trend of the least squares straight line			
Slope (fitted to data):	0.0000275	mg/L per period	
R-Squared error of fit:	0.348		
Sen's Non-parametric estimate of the slope (two-tailed test)			
Median Slope:	0.0000278	mg/L per period	
Lower Confidence Limit of Slope, M1:	-.0000257	mg/L per period	
Upper Confidence Limit of Slope, M2+1:	0.0000692	mg/L per period	
Non-parametric Mann-Kendall Test for Trend			
S Statistic:		1.25	
Z test:		1.64	
At the 95.0 % Confidence Level (two-tailed test):		None	

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW121	Parameter Code:	01010
Location Class:	Background	Parameter:	Beryllium, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW121	Parameter Code:	01020
Location Class:	Background	Parameter:	Boron, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.000145	mg/L per period
R-Squared error of fit:	0.0564	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	-0.000523	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-0.298
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW121	Parameter Code:	01025
Location Class:	Background	Parameter:	Cadmium, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW121	Parameter Code:	01030
Location Class:	Background	Parameter:	Chromium, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range: 01/01/2022 to 12/31/2023			

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.000000645	mg/L per period
R-Squared error of fit:	0.307	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	1.31
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW121	Parameter Code:	01035
Location Class:	Background	Parameter:	Cobalt, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range: 01/01/2022 to 12/31/2023			

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW121	Parameter Code:	01040
Location Class:	Background	Parameter:	Copper, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW121	Parameter Code:	01046
Location Class:	Background	Parameter:	Iron, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.000627	mg/L per period
R-Squared error of fit:	0.285	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.000181	mg/L per period
Lower Confidence Limit of Slope, M1:	-.000131	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.000938	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.866
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW121	Parameter Code:	01049
Location Class:	Background	Parameter:	Lead, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW121	Parameter Code:	01056
Location Class:	Background	Parameter:	Manganese, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.000445	mg/L per period
R-Squared error of fit:	0.170	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.000509	mg/L per period
Lower Confidence Limit of Slope, M1:	-.000637	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.00165	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.371
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW121	Parameter Code:	01057
Location Class:	Background	Parameter:	Thallium, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW121	Parameter Code:	01065
Location Class:	Background	Parameter:	Nickel, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range: 01/01/2022 to 12/31/2023			

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.000000380	mg/L per period
R-Squared error of fit:	0.0463	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.000000230	mg/L per period
Lower Confidence Limit of Slope, M1:	-.000000888	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.00000195	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW121	Parameter Code:	01075
Location Class:	Background	Parameter:	Silver, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range: 01/01/2022 to 12/31/2023			

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW121	Parameter Code:	01090
Location Class:	Background	Parameter:	Zinc, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW121	Parameter Code:	01095
Location Class:	Background	Parameter:	Antimony, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range: 01/01/2022 to 12/31/2023			

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW121	Parameter Code:	01145
Location Class:	Background	Parameter:	Selenium, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW121	Parameter Code:	71890
Location Class:	Background	Parameter:	Mercury, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range: 01/01/2022 to 12/31/2023			

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW14	Parameter Code:	00515
Location Class:	Downgradient	Parameter:	Total Dissolved Solids
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range: 01/01/2022 to 12/31/2023			

Trend Analysis

Trend of the least squares straight line			
Slope (fitted to data):	0.458	mg/L per period	
R-Squared error of fit:	0.270		
Sen's Non-parametric estimate of the slope (two-tailed test)			
Median Slope:	0.169	mg/L per period	
Lower Confidence Limit of Slope, M1:	-.298	mg/L per period	
Upper Confidence Limit of Slope, M2+1:	1.06	mg/L per period	
Non-parametric Mann-Kendall Test for Trend			
S Statistic:		0.619	
Z test:		1.64	
At the 95.0 % Confidence Level (two-tailed test):		None	

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW14	Parameter Code:	00618
Location Class:	Downgradient	Parameter:	Nitrate nitrogen, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW14	Parameter Code:	00720
Location Class:	Downgradient	Parameter:	Cyanide, total
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW14	Parameter Code:	00941
Location Class:	Downgradient	Parameter:	Chloride, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0102	mg/L per period
R-Squared error of fit:	0.528	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0115	mg/L per period
Lower Confidence Limit of Slope, M1:	0.00154	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0200	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	1.86
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	Upward

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW14	Parameter Code:	00946
Location Class:	Downgradient	Parameter:	Sulfate, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.0224	mg/L per period
R-Squared error of fit:	0.0390	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	-0.00877	mg/L per period
Lower Confidence Limit of Slope, M1:	-0.108	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.110	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-0.371
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW14	Parameter Code:	00950
Location Class:	Downgradient	Parameter:	Fluoride, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW14	Parameter Code:	01000
Location Class:	Downgradient	Parameter:	Arsenic, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.000000400	mg/L per period
R-Squared error of fit:	0.164	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.000000638	mg/L per period
Lower Confidence Limit of Slope, M1:	-.000000396	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.00000170	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	1.13
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW14	Parameter Code:	01005
Location Class:	Downgradient	Parameter:	Barium, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.000112	mg/L per period
R-Squared error of fit:	0.549	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	-0.000123	mg/L per period
Lower Confidence Limit of Slope, M1:	-0.000282	mg/L per period
Upper Confidence Limit of Slope, M2+1:	-0.0000380	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-1.99
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	Downward

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW14	Parameter Code:	01010
Location Class:	Downgradient	Parameter:	Beryllium, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW14	Parameter Code:	01020
Location Class:	Downgradient	Parameter:	Boron, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-.000927	mg/L per period
R-Squared error of fit:	0.648	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	-.000903	mg/L per period
Lower Confidence Limit of Slope, M1:	-.00136	mg/L per period
Upper Confidence Limit of Slope, M2+1:	-.000433	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-2.24
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	Downward

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW14	Parameter Code:	01025
Location Class:	Downgradient	Parameter:	Cadmium, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW14	Parameter Code:	01030
Location Class:	Downgradient	Parameter:	Chromium, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.000000645	mg/L per period
R-Squared error of fit:	0.307	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	1.31
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW14	Parameter Code:	01035
Location Class:	Downgradient	Parameter:	Cobalt, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range: 01/01/2022 to 12/31/2023			

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW14	Parameter Code:	01040
Location Class:	Downgradient	Parameter:	Copper, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW14	Parameter Code:	01046
Location Class:	Downgradient	Parameter:	Iron, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0000379	mg/L per period
R-Squared error of fit:	0.0278	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	-.000109	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0000762	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.399
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW14	Parameter Code:	01049
Location Class:	Downgradient	Parameter:	Lead, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW14	Parameter Code:	01056
Location Class:	Downgradient	Parameter:	Manganese, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.000404	mg/L per period
R-Squared error of fit:	0.519	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.000421	mg/L per period
Lower Confidence Limit of Slope, M1:	0.000140	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.000958	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	2.10
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	Upward

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW14	Parameter Code:	01057
Location Class:	Downgradient	Parameter:	Thallium, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW14	Parameter Code:	01065
Location Class:	Downgradient	Parameter:	Nickel, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range: 01/01/2022 to 12/31/2023			

Trend Analysis

Trend of the least squares straight line			
Slope (fitted to data):	-.00000197	mg/L per period	
R-Squared error of fit:	0.347		
Sen's Non-parametric estimate of the slope (two-tailed test)			
Median Slope:	-.00000221	mg/L per period	
Lower Confidence Limit of Slope, M1:	-.00000449	mg/L per period	
Upper Confidence Limit of Slope, M2+1:	0.000000658	mg/L per period	
Non-parametric Mann-Kendall Test for Trend			
S Statistic:		-1.36	
Z test:		1.64	
At the 95.0 % Confidence Level (two-tailed test):		None	

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW14	Parameter Code:	01075
Location Class:	Downgradient	Parameter:	Silver, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW14	Parameter Code:	01090
Location Class:	Downgradient	Parameter:	Zinc, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW14	Parameter Code:	01095
Location Class:	Downgradient	Parameter:	Antimony, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW14	Parameter Code:	01145
Location Class:	Downgradient	Parameter:	Selenium, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW14	Parameter Code:	71890
Location Class:	Downgradient	Parameter:	Mercury, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW23D	Parameter Code:	00515
Location Class:		Parameter:	Total Dissolved Solids
Location Type:		Units:	mg/L
Confidence Level:	95.00%		
Date Range: 01/01/2022 to 12/31/2023			

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.0980	mg/L per period
R-Squared error of fit:	0.0803	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	-.0509	mg/L per period
Lower Confidence Limit of Slope, M1:	-.422	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.375	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-0.371
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW23D	Parameter Code:	00618
Location Class:		Parameter:	Nitrate nitrogen, dissolved
Location Type:		Units:	mg/L
Confidence Level:	95.00%		
Date Range: 01/01/2022 to 12/31/2023			

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW23D	Parameter Code:	00720
Location Class:		Parameter:	Cyanide, total
Location Type:		Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.000714	mg/L per period
R-Squared error of fit:	0.522	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	-0.000110	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-1.97
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	Downward

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW23D	Parameter Code:	00941
Location Class:		Parameter:	Chloride, dissolved
Location Type:		Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.00274	mg/L per period
R-Squared error of fit:	0.187	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	-0.00204	mg/L per period
Lower Confidence Limit of Slope, M1:	-0.00410	mg/L per period
Upper Confidence Limit of Slope, M2+1:	-0.000231	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-1.75
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	Downward

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW23D	Parameter Code:	00946
Location Class:		Parameter:	Sulfate, dissolved
Location Type:		Units:	mg/L
Confidence Level:	95.00%		
Date Range: 01/01/2022 to 12/31/2023			

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.0223	mg/L per period
R-Squared error of fit:	0.191	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	-0.00673	mg/L per period
Lower Confidence Limit of Slope, M1:	-0.0322	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0000533	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-1.61
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW23D	Parameter Code:	00950
Location Class:		Parameter:	Fluoride, dissolved
Location Type:		Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW23D	Parameter Code:	01000
Location Class:		Parameter:	Arsenic, dissolved
Location Type:		Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line			
Slope (fitted to data):	-0.0000494	mg/L per period	
R-Squared error of fit:	0.136		
Sen's Non-parametric estimate of the slope (two-tailed test)			
Median Slope:	-0.0000138	mg/L per period	
Lower Confidence Limit of Slope, M1:	-0.0000733	mg/L per period	
Upper Confidence Limit of Slope, M2+1:	0.0000232	mg/L per period	
Non-parametric Mann-Kendall Test for Trend			
S Statistic:		-0.371	
Z test:		1.64	
At the 95.0 % Confidence Level (two-tailed test):		None	

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW23D	Parameter Code:	01005
Location Class:		Parameter:	Barium, dissolved
Location Type:		Units:	mg/L
Confidence Level:	95.00%		
Date Range: 01/01/2022 to 12/31/2023			

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.0000202	mg/L per period
R-Squared error of fit:	0.0647	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	-0.00000897	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.00000451	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-0.394
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW23D	Parameter Code:	01010
Location Class:		Parameter:	Beryllium, dissolved
Location Type:		Units:	mg/L
Confidence Level:	95.00%		
Date Range: 01/01/2022 to 12/31/2023			

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW23D	Parameter Code:	01020
Location Class:		Parameter:	Boron, dissolved
Location Type:		Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.0000235	mg/L per period
R-Squared error of fit:	0.0200	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW23D	Parameter Code:	01025
Location Class:		Parameter:	Cadmium, dissolved
Location Type:		Units:	mg/L
Confidence Level:	95.00%		
Date Range: 01/01/2022 to 12/31/2023			

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW23D	Parameter Code:	01030
Location Class:		Parameter:	Chromium, dissolved
Location Type:		Units:	mg/L
Confidence Level:	95.00%		
Date Range: 01/01/2022 to 12/31/2023			

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW23D	Parameter Code:	01035
Location Class:		Parameter:	Cobalt, dissolved
Location Type:		Units:	mg/L
Confidence Level:	95.00%		
Date Range: 01/01/2022 to 12/31/2023			

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW23D	Parameter Code:	01040
Location Class:		Parameter:	Copper, dissolved
Location Type:		Units:	mg/L
Confidence Level:	95.00%		
Date Range: 01/01/2022 to 12/31/2023			

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW23D	Parameter Code:	01046
Location Class:		Parameter:	Iron, dissolved
Location Type:		Units:	mg/L
Confidence Level:	95.00%		
Date Range: 01/01/2022 to 12/31/2023			

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.000126	mg/L per period
R-Squared error of fit:	0.0636	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.000106	mg/L per period
Lower Confidence Limit of Slope, M1:	-.000297	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.000644	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.628
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW23D	Parameter Code:	01049
Location Class:		Parameter:	Lead, dissolved
Location Type:		Units:	mg/L
Confidence Level:	95.00%		
Date Range: 01/01/2022 to 12/31/2023			

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW23D	Parameter Code:	01056
Location Class:		Parameter:	Manganese, dissolved
Location Type:		Units:	mg/L
Confidence Level:	95.00%		
Date Range: 01/01/2022 to 12/31/2023			

Trend Analysis

Trend of the least squares straight line			
Slope (fitted to data):	0.0000401	mg/L per period	
R-Squared error of fit:	0.150		
Sen's Non-parametric estimate of the slope (two-tailed test)			
Median Slope:	0.0000407	mg/L per period	
Lower Confidence Limit of Slope, M1:	-.0000351	mg/L per period	
Upper Confidence Limit of Slope, M2+1:	0.000112	mg/L per period	
Non-parametric Mann-Kendall Test for Trend			
S Statistic:		1.61	
Z test:		1.64	
At the 95.0 % Confidence Level (two-tailed test):		None	

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW23D	Parameter Code:	01057
Location Class:		Parameter:	Thallium, dissolved
Location Type:		Units:	mg/L
Confidence Level:	95.00%		
Date Range: 01/01/2022 to 12/31/2023			

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW23D	Parameter Code:	01065
Location Class:		Parameter:	Nickel, dissolved
Location Type:		Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line			
Slope (fitted to data):	0.000000532	mg/L per period	
R-Squared error of fit:	0.000537		
Sen's Non-parametric estimate of the slope (two-tailed test)			
Median Slope:	0.000000502	mg/L per period	
Lower Confidence Limit of Slope, M1:	-.00000137	mg/L per period	
Upper Confidence Limit of Slope, M2+1:	0.00000188	mg/L per period	
Non-parametric Mann-Kendall Test for Trend			
S Statistic:		0.619	
Z test:		1.64	
At the 95.0 % Confidence Level (two-tailed test):		None	

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW23D	Parameter Code:	01075
Location Class:		Parameter:	Silver, dissolved
Location Type:		Units:	mg/L
Confidence Level:	95.00%		
Date Range: 01/01/2022 to 12/31/2023			

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW23D	Parameter Code:	01090
Location Class:		Parameter:	Zinc, dissolved
Location Type:		Units:	mg/L
Confidence Level:	95.00%		
Date Range: 01/01/2022 to 12/31/2023			

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW23D	Parameter Code:	01095
Location Class:		Parameter:	Antimony, dissolved
Location Type:		Units:	mg/L
Confidence Level:	95.00%		
Date Range: 01/01/2022 to 12/31/2023			

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW23D	Parameter Code:	01145
Location Class:		Parameter:	Selenium, dissolved
Location Type:		Units:	mg/L
Confidence Level:	95.00%		
Date Range: 01/01/2022 to 12/31/2023			

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW23D	Parameter Code:	71890
Location Class:		Parameter:	Mercury, dissolved
Location Type:		Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW23S	Parameter Code:	00515
Location Class:		Parameter:	Total Dissolved Solids
Location Type:		Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.160	mg/L per period
R-Squared error of fit:	0.149	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	-0.0544	mg/L per period
Lower Confidence Limit of Slope, M1:	-0.452	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.163	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-0.619
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW23S	Parameter Code:	00618
Location Class:		Parameter:	Nitrate nitrogen, dissolved
Location Type:		Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW23S	Parameter Code:	00720
Location Class:		Parameter:	Cyanide, total
Location Type:		Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.000127	mg/L per period
R-Squared error of fit:	0.145	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-0.873
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW23S	Parameter Code:	00941
Location Class:		Parameter:	Chloride, dissolved
Location Type:		Units:	mg/L
Confidence Level:	95.00%		
Date Range: 01/01/2022 to 12/31/2023			

Trend Analysis

Trend of the least squares straight line			
Slope (fitted to data):	-.00411	mg/L per period	
R-Squared error of fit:	0.0668		
Sen's Non-parametric estimate of the slope (two-tailed test)			
Median Slope:	-.000805	mg/L per period	
Lower Confidence Limit of Slope, M1:	-.0144	mg/L per period	
Upper Confidence Limit of Slope, M2+1:	0.00237	mg/L per period	
Non-parametric Mann-Kendall Test for Trend			
S Statistic:		-.748	
Z test:		1.64	
At the 95.0 % Confidence Level (two-tailed test):		None	

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW23S	Parameter Code:	00946
Location Class:		Parameter:	Sulfate, dissolved
Location Type:		Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.00448	mg/L per period
R-Squared error of fit:	0.588	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	-0.00354	mg/L per period
Lower Confidence Limit of Slope, M1:	-0.00774	mg/L per period
Upper Confidence Limit of Slope, M2+1:	-0.00118	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-2.49
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	Downward

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW23S	Parameter Code:	00950
Location Class:		Parameter:	Fluoride, dissolved
Location Type:		Units:	mg/L
Confidence Level:	95.00%		
Date Range: 01/01/2022 to 12/31/2023			

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW23S	Parameter Code:	01000
Location Class:		Parameter:	Arsenic, dissolved
Location Type:		Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW23S	Parameter Code:	01005
Location Class:		Parameter:	Barium, dissolved
Location Type:		Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.00000153	mg/L per period
R-Squared error of fit:	0.0154	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.00000137	mg/L per period
Lower Confidence Limit of Slope, M1:	-.0000108	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0000122	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW23S	Parameter Code:	01010
Location Class:		Parameter:	Beryllium, dissolved
Location Type:		Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW23S	Parameter Code:	01020
Location Class:		Parameter:	Boron, dissolved
Location Type:		Units:	mg/L
Confidence Level:	95.00%		
Date Range: 01/01/2022 to 12/31/2023			

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0000257	mg/L per period
R-Squared error of fit:	0.0821	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0000431	mg/L per period
Lower Confidence Limit of Slope, M1:	-.0000311	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.000181	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	1.01
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW23S	Parameter Code:	01025
Location Class:		Parameter:	Cadmium, dissolved
Location Type:		Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW23S	Parameter Code:	01030
Location Class:		Parameter:	Chromium, dissolved
Location Type:		Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.000000645	mg/L per period
R-Squared error of fit:	0.307	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	1.31
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW23S	Parameter Code:	01035
Location Class:		Parameter:	Cobalt, dissolved
Location Type:		Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW23S	Parameter Code:	01040
Location Class:		Parameter:	Copper, dissolved
Location Type:		Units:	mg/L
Confidence Level:	95.00%		
Date Range: 01/01/2022 to 12/31/2023			

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW23S	Parameter Code:	01046
Location Class:		Parameter:	Iron, dissolved
Location Type:		Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.0000875	mg/L per period
R-Squared error of fit:	0.307	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-1.31
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW23S	Parameter Code:	01049
Location Class:		Parameter:	Lead, dissolved
Location Type:		Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW23S	Parameter Code:	01056
Location Class:		Parameter:	Manganese, dissolved
Location Type:		Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0000469	mg/L per period
R-Squared error of fit:	0.609	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0000427	mg/L per period
Lower Confidence Limit of Slope, M1:	0.00000186	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0000925	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	1.75
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	Upward

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW23S	Parameter Code:	01057
Location Class:		Parameter:	Thallium, dissolved
Location Type:		Units:	mg/L
Confidence Level:	95.00%		
Date Range: 01/01/2022 to 12/31/2023			

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW23S	Parameter Code:	01065
Location Class:		Parameter:	Nickel, dissolved
Location Type:		Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line			
Slope (fitted to data):	0.000000377	mg/L per period	
R-Squared error of fit:	0.134		
Sen's Non-parametric estimate of the slope (two-tailed test)			
Median Slope:	0.000000434	mg/L per period	
Lower Confidence Limit of Slope, M1:	-.000000435	mg/L per period	
Upper Confidence Limit of Slope, M2+1:	0.00000152	mg/L per period	
Non-parametric Mann-Kendall Test for Trend			
S Statistic:		0.880	
Z test:		1.64	
At the 95.0 % Confidence Level (two-tailed test):		None	

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW23S	Parameter Code:	01075
Location Class:		Parameter:	Silver, dissolved
Location Type:		Units:	mg/L
Confidence Level:	95.00%		
Date Range: 01/01/2022 to 12/31/2023			

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW23S	Parameter Code:	01090
Location Class:		Parameter:	Zinc, dissolved
Location Type:		Units:	mg/L
Confidence Level:	95.00%		
Date Range: 01/01/2022 to 12/31/2023			

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW23S	Parameter Code:	01095
Location Class:		Parameter:	Antimony, dissolved
Location Type:		Units:	mg/L
Confidence Level:	95.00%		
Date Range: 01/01/2022 to 12/31/2023			

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW23S	Parameter Code:	01145
Location Class:		Parameter:	Selenium, dissolved
Location Type:		Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW23S	Parameter Code:	71890
Location Class:		Parameter:	Mercury, dissolved
Location Type:		Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW6	Parameter Code:	00515
Location Class:	Downgradient	Parameter:	Total Dissolved Solids
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range: 01/01/2022 to 12/31/2023			

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0934	mg/L per period
R-Squared error of fit:	0.00850	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.163	mg/L per period
Lower Confidence Limit of Slope, M1:	-1.10	mg/L per period
Upper Confidence Limit of Slope, M2+1:	3.73	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW6	Parameter Code:	00618
Location Class:	Downgradient	Parameter:	Nitrate nitrogen, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.00291	mg/L per period
R-Squared error of fit:	0.281	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	-0.00143	mg/L per period
Lower Confidence Limit of Slope, M1:	-0.00998	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0119	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-0.245
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW6	Parameter Code:	00720
Location Class:	Downgradient	Parameter:	Cyanide, total
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW6	Parameter Code:	00941
Location Class:	Downgradient	Parameter:	Chloride, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range: 01/01/2022 to 12/31/2023			

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.0148	mg/L per period
R-Squared error of fit:	0.788	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	-.0203	mg/L per period
Lower Confidence Limit of Slope, M1:	-.0240	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.00216	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-1.71
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	Downward

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW6	Parameter Code:	00946
Location Class:	Downgradient	Parameter:	Sulfate, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.0529	mg/L per period
R-Squared error of fit:	0.0372	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	-0.0805	mg/L per period
Lower Confidence Limit of Slope, M1:	-0.331	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.917	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW6	Parameter Code:	00950
Location Class:	Downgradient	Parameter:	Fluoride, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW6	Parameter Code:	01000
Location Class:	Downgradient	Parameter:	Arsenic, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW6	Parameter Code:	01005
Location Class:	Downgradient	Parameter:	Barium, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-.00000522	mg/L per period
R-Squared error of fit:	0.00371	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.00000884	mg/L per period
Lower Confidence Limit of Slope, M1:	-.000123	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.000379	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.505
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW6	Parameter Code:	01010
Location Class:	Downgradient	Parameter:	Beryllium, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range: 01/01/2022 to 12/31/2023			

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW6	Parameter Code:	01020
Location Class:	Downgradient	Parameter:	Boron, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.00339	mg/L per period
R-Squared error of fit:	0.0849	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.000587	mg/L per period
Lower Confidence Limit of Slope, M1:	-0.0165	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0367	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW6	Parameter Code:	01025
Location Class:	Downgradient	Parameter:	Cadmium, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW6	Parameter Code:	01030
Location Class:	Downgradient	Parameter:	Chromium, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.00000107	mg/L per period
R-Squared error of fit:	0.385	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.00000303	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	1.06
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW6	Parameter Code:	01035
Location Class:	Downgradient	Parameter:	Cobalt, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW6	Parameter Code:	01040
Location Class:	Downgradient	Parameter:	Copper, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range: 01/01/2022 to 12/31/2023			

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW6	Parameter Code:	01046
Location Class:	Downgradient	Parameter:	Iron, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range: 01/01/2022 to 12/31/2023			

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.000115	mg/L per period
R-Squared error of fit:	0.385	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	-.000325	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-1.06
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW6	Parameter Code:	01049
Location Class:	Downgradient	Parameter:	Lead, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW6	Parameter Code:	01056
Location Class:	Downgradient	Parameter:	Manganese, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.00000293	mg/L per period
R-Squared error of fit:	0.0302	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.00000564	mg/L per period
Lower Confidence Limit of Slope, M1:	-.0000198	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0000790	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.505
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW6	Parameter Code:	01057
Location Class:	Downgradient	Parameter:	Thallium, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW6	Parameter Code:	01065
Location Class:	Downgradient	Parameter:	Nickel, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line			
Slope (fitted to data):	0.000000470	mg/L per period	
R-Squared error of fit:	0.0592		
Sen's Non-parametric estimate of the slope (two-tailed test)			
Median Slope:	0.000000144	mg/L per period	
Lower Confidence Limit of Slope, M1:	-.00000178	mg/L per period	
Upper Confidence Limit of Slope, M2+1:	0.00000721	mg/L per period	
Non-parametric Mann-Kendall Test for Trend			
S Statistic:		0.0	
Z test:		1.64	
At the 95.0 % Confidence Level (two-tailed test):		None	

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW6	Parameter Code:	01075
Location Class:	Downgradient	Parameter:	Silver, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW6	Parameter Code:	01090
Location Class:	Downgradient	Parameter:	Zinc, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range: 01/01/2022 to 12/31/2023			

Trend Analysis

Trend of the least squares straight line			
Slope (fitted to data):	0.00000509	mg/L per period	
R-Squared error of fit:	0.171		
Sen's Non-parametric estimate of the slope (two-tailed test)			
Median Slope:	0.0	mg/L per period	
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period	
Upper Confidence Limit of Slope, M2+1:	0.0000167	mg/L per period	
Non-parametric Mann-Kendall Test for Trend			
S Statistic:		0.354	
Z test:		1.64	
At the 95.0 % Confidence Level (two-tailed test):		None	

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW6	Parameter Code:	01095
Location Class:	Downgradient	Parameter:	Antimony, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW6	Parameter Code:	01145
Location Class:	Downgradient	Parameter:	Selenium, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range: 01/01/2022 to 12/31/2023			

Trend Analysis

Trend of the least squares straight line			
Slope (fitted to data):	0.00000602	mg/L per period	
R-Squared error of fit:	0.569		
Sen's Non-parametric estimate of the slope (two-tailed test)			
Median Slope:	0.00000456	mg/L per period	
Lower Confidence Limit of Slope, M1:	-.00000989	mg/L per period	
Upper Confidence Limit of Slope, M2+1:	0.0000139	mg/L per period	
Non-parametric Mann-Kendall Test for Trend			
S Statistic:		0.245	
Z test:		1.64	
At the 95.0 % Confidence Level (two-tailed test):		None	

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW6	Parameter Code:	71890
Location Class:	Downgradient	Parameter:	Mercury, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW7	Parameter Code:	00515
Location Class:	Downgradient	Parameter:	Total Dissolved Solids
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.583	mg/L per period
R-Squared error of fit:	0.748	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	-0.639	mg/L per period
Lower Confidence Limit of Slope, M1:	-0.854	mg/L per period
Upper Confidence Limit of Slope, M2+1:	-0.272	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-2.10
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	Downward

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW7	Parameter Code:	00618
Location Class:	Downgradient	Parameter:	Nitrate nitrogen, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.00126	mg/L per period
R-Squared error of fit:	0.484	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	-0.00153	mg/L per period
Lower Confidence Limit of Slope, M1:	-0.00277	mg/L per period
Upper Confidence Limit of Slope, M2+1:	-0.000271	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-1.86
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	Downward

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW7	Parameter Code:	00720
Location Class:	Downgradient	Parameter:	Cyanide, total
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW7	Parameter Code:	00941
Location Class:	Downgradient	Parameter:	Chloride, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.00724	mg/L per period
R-Squared error of fit:	0.118	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0130	mg/L per period
Lower Confidence Limit of Slope, M1:	-.0151	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0257	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.499
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW7	Parameter Code:	00946
Location Class:	Downgradient	Parameter:	Sulfate, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range: 01/01/2022 to 12/31/2023			

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.257	mg/L per period
R-Squared error of fit:	0.761	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	-0.277	mg/L per period
Lower Confidence Limit of Slope, M1:	-0.392	mg/L per period
Upper Confidence Limit of Slope, M2+1:	-0.118	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-2.60
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	Downward

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW7	Parameter Code:	00950
Location Class:	Downgradient	Parameter:	Fluoride, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW7	Parameter Code:	01000
Location Class:	Downgradient	Parameter:	Arsenic, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW7	Parameter Code:	01005
Location Class:	Downgradient	Parameter:	Barium, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range: 01/01/2022 to 12/31/2023			

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.0000295	mg/L per period
R-Squared error of fit:	0.576	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	-0.0000292	mg/L per period
Lower Confidence Limit of Slope, M1:	-0.0000734	mg/L per period
Upper Confidence Limit of Slope, M2+1:	-0.00000412	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-1.75
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	Downward

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW7	Parameter Code:	01010
Location Class:	Downgradient	Parameter:	Beryllium, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW7	Parameter Code:	01020
Location Class:	Downgradient	Parameter:	Boron, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range: 01/01/2022 to 12/31/2023			

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-.000942	mg/L per period
R-Squared error of fit:	0.515	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	-.000805	mg/L per period
Lower Confidence Limit of Slope, M1:	-.00197	mg/L per period
Upper Confidence Limit of Slope, M2+1:	-.0000670	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-1.99
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	Downward

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW7	Parameter Code:	01025
Location Class:	Downgradient	Parameter:	Cadmium, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW7	Parameter Code:	01030
Location Class:	Downgradient	Parameter:	Chromium, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range: 01/01/2022 to 12/31/2023			

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.000000553	mg/L per period
R-Squared error of fit:	0.307	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	1.31
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW7	Parameter Code:	01035
Location Class:	Downgradient	Parameter:	Cobalt, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW7	Parameter Code:	01040
Location Class:	Downgradient	Parameter:	Copper, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW7	Parameter Code:	01046
Location Class:	Downgradient	Parameter:	Iron, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.0000718	mg/L per period
R-Squared error of fit:	0.307	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-1.31
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW7	Parameter Code:	01049
Location Class:	Downgradient	Parameter:	Lead, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range: 01/01/2022 to 12/31/2023			

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW7	Parameter Code:	01056
Location Class:	Downgradient	Parameter:	Manganese, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.0000258	mg/L per period
R-Squared error of fit:	0.0103	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	-0.0000580	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0000183	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.133
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW7	Parameter Code:	01057
Location Class:	Downgradient	Parameter:	Thallium, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW7	Parameter Code:	01065
Location Class:	Downgradient	Parameter:	Nickel, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range: 01/01/2022 to 12/31/2023			

Trend Analysis

Trend of the least squares straight line			
Slope (fitted to data):	0.000000668	mg/L per period	
R-Squared error of fit:	0.235		
Sen's Non-parametric estimate of the slope (two-tailed test)			
Median Slope:	0.000000748	mg/L per period	
Lower Confidence Limit of Slope, M1:	-.000000357	mg/L per period	
Upper Confidence Limit of Slope, M2+1:	0.00000181	mg/L per period	
Non-parametric Mann-Kendall Test for Trend			
S Statistic:		1.13	
Z test:		1.64	
At the 95.0 % Confidence Level (two-tailed test):		None	

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW7	Parameter Code:	01075
Location Class:	Downgradient	Parameter:	Silver, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range: 01/01/2022 to 12/31/2023			

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW7	Parameter Code:	01090
Location Class:	Downgradient	Parameter:	Zinc, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW7	Parameter Code:	01095
Location Class:	Downgradient	Parameter:	Antimony, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW7	Parameter Code:	01145
Location Class:	Downgradient	Parameter:	Selenium, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.0000165	mg/L per period
R-Squared error of fit:	0.0733	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	-0.0000354	mg/L per period
Lower Confidence Limit of Slope, M1:	-0.0000118	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.00000181	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-0.997
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW7	Parameter Code:	71890
Location Class:	Downgradient	Parameter:	Mercury, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW7D	Parameter Code:	00515
Location Class:	Background	Parameter:	Total Dissolved Solids
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.167	mg/L per period
R-Squared error of fit:	0.103	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	-0.196	mg/L per period
Lower Confidence Limit of Slope, M1:	-0.874	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0798	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-0.499
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW7D	Parameter Code:	00618
Location Class:	Background	Parameter:	Nitrate nitrogen, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW7D	Parameter Code:	00720
Location Class:	Background	Parameter:	Cyanide, total
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW7D	Parameter Code:	00941
Location Class:	Background	Parameter:	Chloride, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.00585	mg/L per period
R-Squared error of fit:	0.233	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	-0.00883	mg/L per period
Lower Confidence Limit of Slope, M1:	-0.0158	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.00447	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-1.11
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW7D	Parameter Code:	00946
Location Class:	Background	Parameter:	Sulfate, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range: 01/01/2022 to 12/31/2023			

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.0908	mg/L per period
R-Squared error of fit:	0.175	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	-.0182	mg/L per period
Lower Confidence Limit of Slope, M1:	-.223	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0644	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-0.371
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW7D	Parameter Code:	00950
Location Class:	Background	Parameter:	Fluoride, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW7D	Parameter Code:	01000
Location Class:	Background	Parameter:	Arsenic, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.000000535	mg/L per period
R-Squared error of fit:	0.0582	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	-.00000171	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.00000206	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW7D	Parameter Code:	01005
Location Class:	Background	Parameter:	Barium, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range: 01/01/2022 to 12/31/2023			

Trend Analysis

Trend of the least squares straight line			
Slope (fitted to data):	0.0000170	mg/L per period	
R-Squared error of fit:	0.206		
Sen's Non-parametric estimate of the slope (two-tailed test)			
Median Slope:	0.0000304	mg/L per period	
Lower Confidence Limit of Slope, M1:	-.0000143	mg/L per period	
Upper Confidence Limit of Slope, M2+1:	0.0000448	mg/L per period	
Non-parametric Mann-Kendall Test for Trend			
S Statistic:		1.25	
Z test:		1.64	
At the 95.0 % Confidence Level (two-tailed test):		None	

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW7D	Parameter Code:	01010
Location Class:	Background	Parameter:	Beryllium, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range: 01/01/2022 to 12/31/2023			

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW7D	Parameter Code:	01020
Location Class:	Background	Parameter:	Boron, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range: 01/01/2022 to 12/31/2023			

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.000641	mg/L per period
R-Squared error of fit:	0.514	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	-0.000500	mg/L per period
Lower Confidence Limit of Slope, M1:	-0.00122	mg/L per period
Upper Confidence Limit of Slope, M2+1:	-0.000302	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-2.29
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	Downward

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW7D	Parameter Code:	01025
Location Class:	Background	Parameter:	Cadmium, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW7D	Parameter Code:	01030
Location Class:	Background	Parameter:	Chromium, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.000000645	mg/L per period
R-Squared error of fit:	0.307	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	1.31
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW7D	Parameter Code:	01035
Location Class:	Background	Parameter:	Cobalt, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW7D	Parameter Code:	01040
Location Class:	Background	Parameter:	Copper, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW7D	Parameter Code:	01046
Location Class:	Background	Parameter:	Iron, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-.000155	mg/L per period
R-Squared error of fit:	0.566	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	-.000137	mg/L per period
Lower Confidence Limit of Slope, M1:	-.000217	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-1.99
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	Downward

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW7D	Parameter Code:	01049
Location Class:	Background	Parameter:	Lead, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range: 01/01/2022 to 12/31/2023			

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW7D	Parameter Code:	01056
Location Class:	Background	Parameter:	Manganese, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.000228	mg/L per period
R-Squared error of fit:	0.182	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.000226	mg/L per period
Lower Confidence Limit of Slope, M1:	-.000128	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.000583	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	1.36
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW7D	Parameter Code:	01057
Location Class:	Background	Parameter:	Thallium, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW7D	Parameter Code:	01065
Location Class:	Background	Parameter:	Nickel, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line			
Slope (fitted to data):	-0.00000408	mg/L per period	
R-Squared error of fit:	0.235		
Sen's Non-parametric estimate of the slope (two-tailed test)			
Median Slope:	-0.00000366	mg/L per period	
Lower Confidence Limit of Slope, M1:	-0.00000125	mg/L per period	
Upper Confidence Limit of Slope, M2+1:	0.000000783	mg/L per period	
Non-parametric Mann-Kendall Test for Trend			
S Statistic:		-0.628	
Z test:		1.64	
At the 95.0 % Confidence Level (two-tailed test):		None	

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW7D	Parameter Code:	01075
Location Class:	Background	Parameter:	Silver, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW7D	Parameter Code:	01090
Location Class:	Background	Parameter:	Zinc, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW7D	Parameter Code:	01095
Location Class:	Background	Parameter:	Antimony, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW7D	Parameter Code:	01145
Location Class:	Background	Parameter:	Selenium, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW7D	Parameter Code:	71890
Location Class:	Background	Parameter:	Mercury, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW8	Parameter Code:	00515
Location Class:	Downgradient	Parameter:	Total Dissolved Solids
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.231	mg/L per period
R-Squared error of fit:	0.338	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.305	mg/L per period
Lower Confidence Limit of Slope, M1:	-.102	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.492	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	1.36
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW8	Parameter Code:	00618
Location Class:	Downgradient	Parameter:	Nitrate nitrogen, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW8	Parameter Code:	00720
Location Class:	Downgradient	Parameter:	Cyanide, total
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.000184	mg/L per period
R-Squared error of fit:	0.307	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-1.31
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW8	Parameter Code:	00941
Location Class:	Downgradient	Parameter:	Chloride, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range: 01/01/2022 to 12/31/2023			

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.00304	mg/L per period
R-Squared error of fit:	0.184	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	-0.00345	mg/L per period
Lower Confidence Limit of Slope, M1:	-0.00812	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.00182	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-0.764
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW8	Parameter Code:	00946
Location Class:	Downgradient	Parameter:	Sulfate, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.171	mg/L per period
R-Squared error of fit:	0.0798	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.266	mg/L per period
Lower Confidence Limit of Slope, M1:	-.420	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.812	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.619
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW8	Parameter Code:	00950
Location Class:	Downgradient	Parameter:	Fluoride, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW8	Parameter Code:	01000
Location Class:	Downgradient	Parameter:	Arsenic, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range: 01/01/2022 to 12/31/2023			

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW8	Parameter Code:	01005
Location Class:	Downgradient	Parameter:	Barium, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range: 01/01/2022 to 12/31/2023			

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.00000219	mg/L per period
R-Squared error of fit:	0.0775	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.00000292	mg/L per period
Lower Confidence Limit of Slope, M1:	-.00000575	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.00000975	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.628
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW8	Parameter Code:	01010
Location Class:	Downgradient	Parameter:	Beryllium, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW8	Parameter Code:	01020
Location Class:	Downgradient	Parameter:	Boron, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.00194	mg/L per period
R-Squared error of fit:	0.140	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.00102	mg/L per period
Lower Confidence Limit of Slope, M1:	-.00475	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.00580	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.619
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW8	Parameter Code:	01025
Location Class:	Downgradient	Parameter:	Cadmium, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range: 01/01/2022 to 12/31/2023			

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW8	Parameter Code:	01030
Location Class:	Downgradient	Parameter:	Chromium, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.00000145	mg/L per period
R-Squared error of fit:	0.177	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.00000179	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	1.32
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW8	Parameter Code:	01035
Location Class:	Downgradient	Parameter:	Cobalt, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW8	Parameter Code:	01040
Location Class:	Downgradient	Parameter:	Copper, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW8	Parameter Code:	01046
Location Class:	Downgradient	Parameter:	Iron, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range: 01/01/2022 to 12/31/2023			

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.0000976	mg/L per period
R-Squared error of fit:	0.307	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-1.31
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW8	Parameter Code:	01049
Location Class:	Downgradient	Parameter:	Lead, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW8	Parameter Code:	01056
Location Class:	Downgradient	Parameter:	Manganese, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.000854	mg/L per period
R-Squared error of fit:	0.115	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.00110	mg/L per period
Lower Confidence Limit of Slope, M1:	-.000867	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.00403	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	1.36
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW8	Parameter Code:	01057
Location Class:	Downgradient	Parameter:	Thallium, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW8	Parameter Code:	01065
Location Class:	Downgradient	Parameter:	Nickel, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.00000114	mg/L per period
R-Squared error of fit:	0.0611	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	-.000000748	mg/L per period
Lower Confidence Limit of Slope, M1:	-.00000288	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.00000419	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-.249
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW8	Parameter Code:	01075
Location Class:	Downgradient	Parameter:	Silver, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range: 01/01/2022 to 12/31/2023			

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW8	Parameter Code:	01090
Location Class:	Downgradient	Parameter:	Zinc, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line		
Slope (fitted to data):	0.00000236	mg/L per period
R-Squared error of fit:	0.0809	
Sen's Non-parametric estimate of the slope (two-tailed test)		
Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period
Non-parametric Mann-Kendall Test for Trend		
S Statistic:	0.436	
Z test:	1.64	
At the 95.0 % Confidence Level (two-tailed test):	None	

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW8	Parameter Code:	01095
Location Class:	Downgradient	Parameter:	Antimony, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW8	Parameter Code:	01145
Location Class:	Downgradient	Parameter:	Selenium, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2022 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.000000916	mg/L per period
R-Squared error of fit:	0.303	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	1.31
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW8	Parameter Code:	71890
Location Class:	Downgradient	Parameter:	Mercury, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range: 01/01/2022 to 12/31/2023			

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0	mg/L per period
R-Squared error of fit:	0.0	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

APPENDIX C4
SEN SLOPE AND MANN KENDALL TEST RESULTS – LONG TERM

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW115D	Parameter Code:	00515
Location Class:	Downgradient	Parameter:	Total Dissolved Solids
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0140	mg/L per period
R-Squared error of fit:	0.00901	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0322	mg/L per period
Lower Confidence Limit of Slope, M1:	-.00493	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0616	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	1.48
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW115D	Parameter Code:	00618
Location Class:	Downgradient	Parameter:	Nitrate nitrogen, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.0000730	mg/L per period
R-Squared error of fit:	0.00237	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	-0.0000469	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-0.476
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW115D	Parameter Code:	00720
Location Class:	Downgradient	Parameter:	Cyanide, total
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.00000323	mg/L per period
R-Squared error of fit:	0.707	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.00000317	mg/L per period
Lower Confidence Limit of Slope, M1:	0.00000268	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.00000359	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	6.14
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	Upward

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW115D	Parameter Code:	00941
Location Class:	Downgradient	Parameter:	Chloride, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.00569	mg/L per period
R-Squared error of fit:	0.0256	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.00426	mg/L per period
Lower Confidence Limit of Slope, M1:	-.0000812	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0115	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	1.56
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW115D	Parameter Code:	00946
Location Class:	Downgradient	Parameter:	Sulfate, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.00324	mg/L per period
R-Squared error of fit:	0.209	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.00325	mg/L per period
Lower Confidence Limit of Slope, M1:	0.00165	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.00495	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	2.82
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	Upward

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW115D	Parameter Code:	00950
Location Class:	Downgradient	Parameter:	Fluoride, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.00000295	mg/L per period
R-Squared error of fit:	0.00112	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	-.0000135	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0000107	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-0.0824
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW115D	Parameter Code:	01000
Location Class:	Downgradient	Parameter:	Arsenic, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.000000279	mg/L per period
R-Squared error of fit:	0.0193	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0000000685	mg/L per period
Lower Confidence Limit of Slope, M1:	-0.000000275	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.000000499	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.527
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW115D	Parameter Code:	01005
Location Class:	Downgradient	Parameter:	Barium, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.0000161	mg/L per period
R-Squared error of fit:	0.00923	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.00000519	mg/L per period
Lower Confidence Limit of Slope, M1:	-0.0000206	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.00000326	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.365
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW115D	Parameter Code:	01010
Location Class:	Downgradient	Parameter:	Beryllium, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.000000427	mg/L per period
R-Squared error of fit:	0.378	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.000000335	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	5.48
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW115D	Parameter Code:	01020
Location Class:	Downgradient	Parameter:	Boron, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.000155	mg/L per period
R-Squared error of fit:	0.0354	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.00000736	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0000182	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	1.29
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW115D	Parameter Code:	01025
Location Class:	Downgradient	Parameter:	Cadmium, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0000000864	mg/L per period
R-Squared error of fit:	0.698	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0000000779	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	5.45
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW115D	Parameter Code:	01030
Location Class:	Downgradient	Parameter:	Chromium, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.00000741	mg/L per period
R-Squared error of fit:	0.0312	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	2.53
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW115D	Parameter Code:	01035
Location Class:	Downgradient	Parameter:	Cobalt, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.000000280	mg/L per period
R-Squared error of fit:	0.418	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.000000262	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	4.51
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW115D	Parameter Code:	01040
Location Class:	Downgradient	Parameter:	Copper, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.00000513	mg/L per period
R-Squared error of fit:	0.0337	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.850
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW115D	Parameter Code:	01046
Location Class:	Downgradient	Parameter:	Iron, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range: 01/01/2013 to 12/31/2023			

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-.000360	mg/L per period
R-Squared error of fit:	0.147	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	-.000158	mg/L per period
Lower Confidence Limit of Slope, M1:	-.000371	mg/L per period
Upper Confidence Limit of Slope, M2+1:	-.0000405	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-2.55	
Z test:	1.64	
At the 95.0 % Confidence Level (two-tailed test):		Downward

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW115D	Parameter Code:	01049
Location Class:	Downgradient	Parameter:	Lead, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.000000240	mg/L per period
R-Squared error of fit:	0.211	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.000000264	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	4.08
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW115D	Parameter Code:	01056
Location Class:	Downgradient	Parameter:	Manganese, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.00000421	mg/L per period
R-Squared error of fit:	0.00000472	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	-.0000152	mg/L per period
Lower Confidence Limit of Slope, M1:	-.0000468	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.00000777	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-0.961
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW115D	Parameter Code:	01057
Location Class:	Downgradient	Parameter:	Thallium, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-.0000000145	mg/L per period
R-Squared error of fit:	0.00148	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0000000730	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	4.56
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW115D	Parameter Code:	01065
Location Class:	Downgradient	Parameter:	Nickel, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range: 01/01/2013 to 12/31/2023			

Trend Analysis

Trend of the least squares straight line			
Slope (fitted to data):	-.000000925	mg/L per period	
R-Squared error of fit:	0.0856		
Sen's Non-parametric estimate of the slope (two-tailed test)			
Median Slope:	-.000000260	mg/L per period	
Lower Confidence Limit of Slope, M1:	-.000000499	mg/L per period	
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period	
Non-parametric Mann-Kendall Test for Trend			
S Statistic:		-1.92	
Z test:		1.64	
At the 95.0 % Confidence Level (two-tailed test):		None	

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW115D	Parameter Code:	01075
Location Class:	Downgradient	Parameter:	Silver, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.00000335	mg/L per period
R-Squared error of fit:	0.0409	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	3.91
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW115D	Parameter Code:	01090
Location Class:	Downgradient	Parameter:	Zinc, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.0000317	mg/L per period
R-Squared error of fit:	0.0441	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.926
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW115D	Parameter Code:	01095
Location Class:	Downgradient	Parameter:	Antimony, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.000000691	mg/L per period
R-Squared error of fit:	0.698	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.000000623	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	5.45
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW115D	Parameter Code:	01145
Location Class:	Downgradient	Parameter:	Selenium, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.00000213	mg/L per period
R-Squared error of fit:	0.0269	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	3.13
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW115D	Parameter Code:	71890
Location Class:	Downgradient	Parameter:	Mercury, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-.0000000234	mg/L per period
R-Squared error of fit:	0.00870	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0000000290	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	4.63
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW115S	Parameter Code:	00515
Location Class:	Downgradient	Parameter:	Total Dissolved Solids
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0335	mg/L per period
R-Squared error of fit:	0.0846	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0336	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0157	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0520	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	2.72
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	Upward

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW115S	Parameter Code:	00618
Location Class:	Downgradient	Parameter:	Nitrate nitrogen, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.000110	mg/L per period
R-Squared error of fit:	0.106	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0000273	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	1.24
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW115S	Parameter Code:	00720
Location Class:	Downgradient	Parameter:	Cyanide, total
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.00000493	mg/L per period
R-Squared error of fit:	0.231	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.00000330	mg/L per period
Lower Confidence Limit of Slope, M1:	0.00000280	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.00000377	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	6.17
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	Upward

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW115S	Parameter Code:	00941
Location Class:	Downgradient	Parameter:	Chloride, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.0117	mg/L per period
R-Squared error of fit:	0.0662	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	-.00217	mg/L per period
Lower Confidence Limit of Slope, M1:	-.00330	mg/L per period
Upper Confidence Limit of Slope, M2+1:	-.00134	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-3.18
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	Downward

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW115S	Parameter Code:	00946
Location Class:	Downgradient	Parameter:	Sulfate, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.00714	mg/L per period
R-Squared error of fit:	0.305	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.00628	mg/L per period
Lower Confidence Limit of Slope, M1:	0.00432	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.00798	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	4.60
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	Upward

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW115S	Parameter Code:	00950
Location Class:	Downgradient	Parameter:	Fluoride, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range: 01/01/2013 to 12/31/2023			

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-.0000228	mg/L per period
R-Squared error of fit:	0.0460	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	-.0000122	mg/L per period
Lower Confidence Limit of Slope, M1:	-.0000255	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-1.98	
Z test:	1.64	
At the 95.0 % Confidence Level (two-tailed test):		Downward

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW115S	Parameter Code:	01000
Location Class:	Downgradient	Parameter:	Arsenic, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.000000451	mg/L per period
R-Squared error of fit:	0.113	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.000000404	mg/L per period
Lower Confidence Limit of Slope, M1:	0.000000302	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.000000729	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	2.08
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	Upward

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW115S	Parameter Code:	01005
Location Class:	Downgradient	Parameter:	Barium, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.0000737	mg/L per period
R-Squared error of fit:	0.115	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	-0.0000229	mg/L per period
Lower Confidence Limit of Slope, M1:	-0.0000508	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-1.71
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	Downward

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW115S	Parameter Code:	01010
Location Class:	Downgradient	Parameter:	Beryllium, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.000000427	mg/L per period
R-Squared error of fit:	0.378	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.000000335	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	5.48
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW115S	Parameter Code:	01020
Location Class:	Downgradient	Parameter:	Boron, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.000136	mg/L per period
R-Squared error of fit:	0.0333	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.00000933	mg/L per period
Lower Confidence Limit of Slope, M1:	-0.00000946	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0000263	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.810
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW115S	Parameter Code:	01025
Location Class:	Downgradient	Parameter:	Cadmium, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0000000864	mg/L per period
R-Squared error of fit:	0.698	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0000000779	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	5.45
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW115S	Parameter Code:	01030
Location Class:	Downgradient	Parameter:	Chromium, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.00000517	mg/L per period
R-Squared error of fit:	0.0316	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	2.96
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW115S	Parameter Code:	01035
Location Class:	Downgradient	Parameter:	Cobalt, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.000000260	mg/L per period
R-Squared error of fit:	0.376	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	4.26
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW115S	Parameter Code:	01040
Location Class:	Downgradient	Parameter:	Copper, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.00000431	mg/L per period
R-Squared error of fit:	0.0319	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	2.56
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW115S	Parameter Code:	01046
Location Class:	Downgradient	Parameter:	Iron, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-.000352	mg/L per period
R-Squared error of fit:	0.180	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	-.000247	mg/L per period
Lower Confidence Limit of Slope, M1:	-.000421	mg/L per period
Upper Confidence Limit of Slope, M2+1:	-.0000790	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-2.70
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	Downward

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW115S	Parameter Code:	01049
Location Class:	Downgradient	Parameter:	Lead, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.000000280	mg/L per period
R-Squared error of fit:	0.418	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.000000262	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	4.51
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW115S	Parameter Code:	01056
Location Class:	Downgradient	Parameter:	Manganese, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.0000175	mg/L per period
R-Squared error of fit:	0.0000361	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0000547	mg/L per period
Lower Confidence Limit of Slope, M1:	-0.0000228	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.000108	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	1.27
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW115S	Parameter Code:	01057
Location Class:	Downgradient	Parameter:	Thallium, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0000000864	mg/L per period
R-Squared error of fit:	0.698	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0000000779	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	5.45
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW115S	Parameter Code:	01065
Location Class:	Downgradient	Parameter:	Nickel, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-.000000957	mg/L per period
R-Squared error of fit:	0.143	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	-.000000303	mg/L per period
Lower Confidence Limit of Slope, M1:	-.000000597	mg/L per period
Upper Confidence Limit of Slope, M2+1:	-.000000632	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-2.39
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW115S	Parameter Code:	01075
Location Class:	Downgradient	Parameter:	Silver, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0000000864	mg/L per period
R-Squared error of fit:	0.698	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0000000779	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	5.45
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW115S	Parameter Code:	01090
Location Class:	Downgradient	Parameter:	Zinc, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.00000178	mg/L per period
R-Squared error of fit:	0.0253	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	1.88
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW115S	Parameter Code:	01095
Location Class:	Downgradient	Parameter:	Antimony, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.000000691	mg/L per period
R-Squared error of fit:	0.698	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.000000623	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	5.45
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW115S	Parameter Code:	01145
Location Class:	Downgradient	Parameter:	Selenium, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.00000172	mg/L per period
R-Squared error of fit:	0.0179	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	3.95
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW115S	Parameter Code:	71890
Location Class:	Downgradient	Parameter:	Mercury, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0000000345	mg/L per period
R-Squared error of fit:	0.698	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0000000311	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	5.45
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW11R	Parameter Code:	00515
Location Class:	Downgradient	Parameter:	Total Dissolved Solids
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.00289	mg/L per period
R-Squared error of fit:	0.0000444	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	-0.00999	mg/L per period
Lower Confidence Limit of Slope, M1:	-0.140	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.107	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-0.157
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW11R	Parameter Code:	00618
Location Class:	Downgradient	Parameter:	Nitrate nitrogen, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-.000970	mg/L per period
R-Squared error of fit:	0.0803	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	-.00111	mg/L per period
Lower Confidence Limit of Slope, M1:	-.00180	mg/L per period
Upper Confidence Limit of Slope, M2+1:	-.0000981	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-1.75
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	Downward

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW11R	Parameter Code:	00720
Location Class:	Downgradient	Parameter:	Cyanide, total
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.00000250	mg/L per period
R-Squared error of fit:	0.0693	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.00000299	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.00000346	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	5.05
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	Upward

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW11R	Parameter Code:	00941
Location Class:	Downgradient	Parameter:	Chloride, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.000697	mg/L per period
R-Squared error of fit:	0.0380	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	-0.000914	mg/L per period
Lower Confidence Limit of Slope, M1:	-0.00186	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.000205	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-1.43
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW11R	Parameter Code:	00946
Location Class:	Downgradient	Parameter:	Sulfate, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0388	mg/L per period
R-Squared error of fit:	0.0141	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	-.0118	mg/L per period
Lower Confidence Limit of Slope, M1:	-.0929	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0697	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-0.356
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW11R	Parameter Code:	00950
Location Class:	Downgradient	Parameter:	Fluoride, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.0000255	mg/L per period
R-Squared error of fit:	0.000499	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0000142	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	1.40
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW11R	Parameter Code:	01000
Location Class:	Downgradient	Parameter:	Arsenic, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.000000216	mg/L per period
R-Squared error of fit:	0.0361	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0000000744	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	4.52
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW11R	Parameter Code:	01005
Location Class:	Downgradient	Parameter:	Barium, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0000167	mg/L per period
R-Squared error of fit:	0.229	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0000157	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0000113	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0000206	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	4.47
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	Upward

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW11R	Parameter Code:	01010
Location Class:	Downgradient	Parameter:	Beryllium, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.000000427	mg/L per period
R-Squared error of fit:	0.379	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.000000337	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	5.44
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW11R	Parameter Code:	01020
Location Class:	Downgradient	Parameter:	Boron, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.000626	mg/L per period
R-Squared error of fit:	0.0122	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	-.0000909	mg/L per period
Lower Confidence Limit of Slope, M1:	-.00113	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.000670	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-.241
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW11R	Parameter Code:	01025
Location Class:	Downgradient	Parameter:	Cadmium, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0000000950	mg/L per period
R-Squared error of fit:	0.662	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0000000644	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0000000859	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	5.51
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW11R	Parameter Code:	01030
Location Class:	Downgradient	Parameter:	Chromium, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.00000251	mg/L per period
R-Squared error of fit:	0.0197	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.000000192	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	3.02
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW11R	Parameter Code:	01035
Location Class:	Downgradient	Parameter:	Cobalt, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.00000328	mg/L per period
R-Squared error of fit:	0.0295	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	1.65
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW11R	Parameter Code:	01040
Location Class:	Downgradient	Parameter:	Copper, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-.0000000199	mg/L per period
R-Squared error of fit:	0.000288	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0000000910	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	2.70
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW11R	Parameter Code:	01046
Location Class:	Downgradient	Parameter:	Iron, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.000303	mg/L per period
R-Squared error of fit:	0.251	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	-0.0000563	mg/L per period
Lower Confidence Limit of Slope, M1:	-0.000165	mg/L per period
Upper Confidence Limit of Slope, M2+1:	-0.0000140	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-3.76
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	Downward

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW11R	Parameter Code:	01049
Location Class:	Downgradient	Parameter:	Lead, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range: 01/01/2013 to 12/31/2023			

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.000000193	mg/L per period
R-Squared error of fit:	0.142	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	3.53
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW11R	Parameter Code:	01056
Location Class:	Downgradient	Parameter:	Manganese, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range: 01/01/2013 to 12/31/2023			

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.000290	mg/L per period
R-Squared error of fit:	0.190	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	-0.0000477	mg/L per period
Lower Confidence Limit of Slope, M1:	-0.0000969	mg/L per period
Upper Confidence Limit of Slope, M2+1:	-0.0000103	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-4.19
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	Downward

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW11R	Parameter Code:	01057
Location Class:	Downgradient	Parameter:	Thallium, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.00000000382	mg/L per period
R-Squared error of fit:	0.0000610	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0000000745	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	4.72
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW11R	Parameter Code:	01065
Location Class:	Downgradient	Parameter:	Nickel, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.0000389	mg/L per period
R-Squared error of fit:	0.314	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	-0.0000105	mg/L per period
Lower Confidence Limit of Slope, M1:	-0.0000213	mg/L per period
Upper Confidence Limit of Slope, M2+1:	-0.00000388	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-2.99
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	Downward

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW11R	Parameter Code:	01075
Location Class:	Downgradient	Parameter:	Silver, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.00000314	mg/L per period
R-Squared error of fit:	0.0313	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.000000798	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	4.63
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW11R	Parameter Code:	01090
Location Class:	Downgradient	Parameter:	Zinc, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.0000813	mg/L per period
R-Squared error of fit:	0.164	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-1.01
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW11R	Parameter Code:	01095
Location Class:	Downgradient	Parameter:	Antimony, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.000000395	mg/L per period
R-Squared error of fit:	0.0960	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.000000538	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	3.95
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW11R	Parameter Code:	01145
Location Class:	Downgradient	Parameter:	Selenium, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.00000121	mg/L per period
R-Squared error of fit:	0.00668	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.000000153	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.000000223	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	2.37
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW11R	Parameter Code:	71890
Location Class:	Downgradient	Parameter:	Mercury, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-.0000000214	mg/L per period
R-Squared error of fit:	0.00722	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0000000319	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	4.63
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW121	Parameter Code:	00515
Location Class:	Background	Parameter:	Total Dissolved Solids
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0176	mg/L per period
R-Squared error of fit:	0.0389	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.00893	mg/L per period
Lower Confidence Limit of Slope, M1:	-.00505	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0310	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	1.10
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW121	Parameter Code:	00618
Location Class:	Background	Parameter:	Nitrate nitrogen, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.000174	mg/L per period
R-Squared error of fit:	0.0572	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0000285	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0000438	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	1.89
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	Upward

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW121	Parameter Code:	00720
Location Class:	Background	Parameter:	Cyanide, total
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.00000323	mg/L per period
R-Squared error of fit:	0.707	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.00000317	mg/L per period
Lower Confidence Limit of Slope, M1:	0.00000268	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.00000359	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	6.14
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	Upward

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW121	Parameter Code:	00941
Location Class:	Background	Parameter:	Chloride, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.00698	mg/L per period
R-Squared error of fit:	0.0657	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	-0.000771	mg/L per period
Lower Confidence Limit of Slope, M1:	-0.00147	mg/L per period
Upper Confidence Limit of Slope, M2+1:	-0.000727	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-1.85
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	Downward

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW121	Parameter Code:	00946
Location Class:	Background	Parameter:	Sulfate, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.000111	mg/L per period
R-Squared error of fit:	0.0000989	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.00161	mg/L per period
Lower Confidence Limit of Slope, M1:	-.000509	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.00345	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	1.20
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW121	Parameter Code:	00950
Location Class:	Background	Parameter:	Fluoride, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.0000225	mg/L per period
R-Squared error of fit:	0.0579	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	-0.00000398	mg/L per period
Lower Confidence Limit of Slope, M1:	-0.0000264	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-1.93
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	Downward

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW121	Parameter Code:	01000
Location Class:	Background	Parameter:	Arsenic, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.000000164	mg/L per period
R-Squared error of fit:	0.00708	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.000000433	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.000000913	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	1.60
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW121	Parameter Code:	01005
Location Class:	Background	Parameter:	Barium, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.0000831	mg/L per period
R-Squared error of fit:	0.148	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	-0.0000579	mg/L per period
Lower Confidence Limit of Slope, M1:	-0.0000854	mg/L per period
Upper Confidence Limit of Slope, M2+1:	-0.0000321	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-3.34
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	Downward

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW121	Parameter Code:	01010
Location Class:	Background	Parameter:	Beryllium, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.000000382	mg/L per period
R-Squared error of fit:	0.293	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.000000317	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	4.79
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW121	Parameter Code:	01020
Location Class:	Background	Parameter:	Boron, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.000137	mg/L per period
R-Squared error of fit:	0.0398	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	-0.00000253	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-0.729
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW121	Parameter Code:	01025
Location Class:	Background	Parameter:	Cadmium, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0000000414	mg/L per period
R-Squared error of fit:	0.0262	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0000000730	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	4.73
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW121	Parameter Code:	01030
Location Class:	Background	Parameter:	Chromium, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.000000422	mg/L per period
R-Squared error of fit:	0.0321	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	2.05
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW121	Parameter Code:	01035
Location Class:	Background	Parameter:	Cobalt, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.000000227	mg/L per period
R-Squared error of fit:	0.188	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0000000546	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	3.98
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW121	Parameter Code:	01040
Location Class:	Background	Parameter:	Copper, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range: 01/01/2013 to 12/31/2023			

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.00000343	mg/L per period
R-Squared error of fit:	0.0635	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.887
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW121	Parameter Code:	01046
Location Class:	Background	Parameter:	Iron, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-.000391	mg/L per period
R-Squared error of fit:	0.138	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	-.000244	mg/L per period
Lower Confidence Limit of Slope, M1:	-.000455	mg/L per period
Upper Confidence Limit of Slope, M2+1:	-.000113	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-2.54
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	Downward

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW121	Parameter Code:	01049
Location Class:	Background	Parameter:	Lead, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.000000467	mg/L per period
R-Squared error of fit:	0.0285	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	2.46
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW121	Parameter Code:	01056
Location Class:	Background	Parameter:	Manganese, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.000541	mg/L per period
R-Squared error of fit:	0.0294	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	-0.000327	mg/L per period
Lower Confidence Limit of Slope, M1:	-0.000104	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0000147	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-1.15
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW121	Parameter Code:	01057
Location Class:	Background	Parameter:	Thallium, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0000000190	mg/L per period
R-Squared error of fit:	0.00254	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0000000730	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	4.73
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW121	Parameter Code:	01065
Location Class:	Background	Parameter:	Nickel, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range: 01/01/2013 to 12/31/2023			

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-.00000116	mg/L per period
R-Squared error of fit:	0.147	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	-.000000465	mg/L per period
Lower Confidence Limit of Slope, M1:	-.000000821	mg/L per period
Upper Confidence Limit of Slope, M2+1:	-.000000244	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-2.79
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	Downward

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW121	Parameter Code:	01075
Location Class:	Background	Parameter:	Silver, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0000000414	mg/L per period
R-Squared error of fit:	0.0262	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0000000730	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	4.73
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW121	Parameter Code:	01090
Location Class:	Background	Parameter:	Zinc, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.0000238	mg/L per period
R-Squared error of fit:	0.0536	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	1.12
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW121	Parameter Code:	01095
Location Class:	Background	Parameter:	Antimony, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range: 01/01/2013 to 12/31/2023			

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.000000601	mg/L per period
R-Squared error of fit:	0.466	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.000000584	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	4.73
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW121	Parameter Code:	01145
Location Class:	Background	Parameter:	Selenium, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.00000191	mg/L per period
R-Squared error of fit:	0.0188	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	3.91
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW121	Parameter Code:	71890
Location Class:	Background	Parameter:	Mercury, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0000000345	mg/L per period
R-Squared error of fit:	0.698	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0000000311	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	5.45
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW14	Parameter Code:	00515
Location Class:	Downgradient	Parameter:	Total Dissolved Solids
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.0159	mg/L per period
R-Squared error of fit:	0.0134	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	-.0211	mg/L per period
Lower Confidence Limit of Slope, M1:	-.0519	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.00853	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-1.27
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW14	Parameter Code:	00618
Location Class:	Downgradient	Parameter:	Nitrate nitrogen, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.000881	mg/L per period
R-Squared error of fit:	0.0446	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.424
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW14	Parameter Code:	00720
Location Class:	Downgradient	Parameter:	Cyanide, total
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.00000197	mg/L per period
R-Squared error of fit:	0.0169	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.00000302	mg/L per period
Lower Confidence Limit of Slope, M1:	0.00000212	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.00000350	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	5.21
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	Upward

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW14	Parameter Code:	00941
Location Class:	Downgradient	Parameter:	Chloride, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.00280	mg/L per period
R-Squared error of fit:	0.384	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.00313	mg/L per period
Lower Confidence Limit of Slope, M1:	0.00212	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.00442	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	4.14
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	Upward

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW14	Parameter Code:	00946
Location Class:	Downgradient	Parameter:	Sulfate, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.186	mg/L per period
R-Squared error of fit:	0.112	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	-0.170	mg/L per period
Lower Confidence Limit of Slope, M1:	-0.297	mg/L per period
Upper Confidence Limit of Slope, M2+1:	-0.0638	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-2.61
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	Downward

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW14	Parameter Code:	00950
Location Class:	Downgradient	Parameter:	Fluoride, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.00000796	mg/L per period
R-Squared error of fit:	0.00693	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	1.28
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW14	Parameter Code:	01000
Location Class:	Downgradient	Parameter:	Arsenic, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-.0000000950	mg/L per period
R-Squared error of fit:	0.00431	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.000000241	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.000000357	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	1.62
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW14	Parameter Code:	01005
Location Class:	Downgradient	Parameter:	Barium, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.0000731	mg/L per period
R-Squared error of fit:	0.224	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	-0.0000812	mg/L per period
Lower Confidence Limit of Slope, M1:	-0.0000113	mg/L per period
Upper Confidence Limit of Slope, M2+1:	-0.0000540	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-3.47
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	Downward

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW14	Parameter Code:	01010
Location Class:	Downgradient	Parameter:	Beryllium, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.000000427	mg/L per period
R-Squared error of fit:	0.378	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.000000335	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	5.48
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW14	Parameter Code:	01020
Location Class:	Downgradient	Parameter:	Boron, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.000418	mg/L per period
R-Squared error of fit:	0.0198	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	-0.000497	mg/L per period
Lower Confidence Limit of Slope, M1:	-0.000134	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0000397	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-1.16
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW14	Parameter Code:	01025
Location Class:	Downgradient	Parameter:	Cadmium, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0000000864	mg/L per period
R-Squared error of fit:	0.698	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0000000779	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	5.45
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW14	Parameter Code:	01030
Location Class:	Downgradient	Parameter:	Chromium, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.00000309	mg/L per period
R-Squared error of fit:	0.0315	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	2.40
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW14	Parameter Code:	01035
Location Class:	Downgradient	Parameter:	Cobalt, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.000000148	mg/L per period
R-Squared error of fit:	0.0705	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	2.22
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW14	Parameter Code:	01040
Location Class:	Downgradient	Parameter:	Copper, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.000000177	mg/L per period
R-Squared error of fit:	0.00139	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	2.01
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW14	Parameter Code:	01046
Location Class:	Downgradient	Parameter:	Iron, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.000231	mg/L per period
R-Squared error of fit:	0.164	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	-0.000187	mg/L per period
Lower Confidence Limit of Slope, M1:	-0.000301	mg/L per period
Upper Confidence Limit of Slope, M2+1:	-0.000697	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-3.01
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	Downward

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW14	Parameter Code:	01049
Location Class:	Downgradient	Parameter:	Lead, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.000000345	mg/L per period
R-Squared error of fit:	0.698	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.000000311	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	5.45
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW14	Parameter Code:	01056
Location Class:	Downgradient	Parameter:	Manganese, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range: 01/01/2013 to 12/31/2023			

Trend Analysis

Trend of the least squares straight line			
Slope (fitted to data):	0.0000259	mg/L per period	
R-Squared error of fit:	0.0120		
Sen's Non-parametric estimate of the slope (two-tailed test)			
Median Slope:	0.0000229	mg/L per period	
Lower Confidence Limit of Slope, M1:	-.0000242	mg/L per period	
Upper Confidence Limit of Slope, M2+1:	0.0000746	mg/L per period	
Non-parametric Mann-Kendall Test for Trend			
S Statistic:		0.678	
Z test:		1.64	
At the 95.0 % Confidence Level (two-tailed test):		None	

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW14	Parameter Code:	01057
Location Class:	Downgradient	Parameter:	Thallium, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-.0000000145	mg/L per period
R-Squared error of fit:	0.00148	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0000000730	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	4.56
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW14	Parameter Code:	01065
Location Class:	Downgradient	Parameter:	Nickel, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range: 01/01/2013 to 12/31/2023			

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.0000143	mg/L per period
R-Squared error of fit:	0.235	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	-0.00000544	mg/L per period
Lower Confidence Limit of Slope, M1:	-0.0000109	mg/L per period
Upper Confidence Limit of Slope, M2+1:	-0.00000199	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-2.59
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	Downward

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW14	Parameter Code:	01075
Location Class:	Downgradient	Parameter:	Silver, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.00000204	mg/L per period
R-Squared error of fit:	0.0259	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0000000726	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	4.63
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW14	Parameter Code:	01090
Location Class:	Downgradient	Parameter:	Zinc, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-.0000000537	mg/L per period
R-Squared error of fit:	0.0000882	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	3.17
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW14	Parameter Code:	01095
Location Class:	Downgradient	Parameter:	Antimony, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.000000691	mg/L per period
R-Squared error of fit:	0.698	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.000000623	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	5.45
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW14	Parameter Code:	01145
Location Class:	Downgradient	Parameter:	Selenium, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range: 01/01/2013 to 12/31/2023			

Trend Analysis

Trend of the least squares straight line			
Slope (fitted to data):	-.000000877	mg/L per period	
R-Squared error of fit:	0.0302		
Sen's Non-parametric estimate of the slope (two-tailed test)			
Median Slope:	0.0	mg/L per period	
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period	
Upper Confidence Limit of Slope, M2+1:	0.0000000273	mg/L per period	
Non-parametric Mann-Kendall Test for Trend			
S Statistic:		3.98	
Z test:		1.64	
At the 95.0 % Confidence Level (two-tailed test):		None	

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW14	Parameter Code:	71890
Location Class:	Downgradient	Parameter:	Mercury, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-.0000000302	mg/L per period
R-Squared error of fit:	0.0144	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	3.76
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW23D	Parameter Code:	00515
Location Class:		Parameter:	Total Dissolved Solids
Location Type:		Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.0527	mg/L per period
R-Squared error of fit:	0.0130	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	-0.0108	mg/L per period
Lower Confidence Limit of Slope, M1:	-0.0315	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0200	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-0.607
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW23D	Parameter Code:	00618
Location Class:		Parameter:	Nitrate nitrogen, dissolved
Location Type:		Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0000264	mg/L per period
R-Squared error of fit:	0.596	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0000251	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	3.78
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	Upward

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW23D	Parameter Code:	00720
Location Class:		Parameter:	Cyanide, total
Location Type:		Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line			
Slope (fitted to data):	0.00000654	mg/L per period	
R-Squared error of fit:	0.113		
Sen's Non-parametric estimate of the slope (two-tailed test)			
Median Slope:	0.0	mg/L per period	
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period	
Upper Confidence Limit of Slope, M2+1:	0.00000242	mg/L per period	
Non-parametric Mann-Kendall Test for Trend			
S Statistic:		3.29	
Z test:		1.64	
At the 95.0 % Confidence Level (two-tailed test):		Upward	

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW23D	Parameter Code:	00941
Location Class:		Parameter:	Chloride, dissolved
Location Type:		Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.00136	mg/L per period
R-Squared error of fit:	0.391	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	-0.00141	mg/L per period
Lower Confidence Limit of Slope, M1:	-0.00167	mg/L per period
Upper Confidence Limit of Slope, M2+1:	-0.00110	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-4.51
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	Downward

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW23D	Parameter Code:	00946
Location Class:		Parameter:	Sulfate, dissolved
Location Type:		Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.0510	mg/L per period
R-Squared error of fit:	0.0174	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	-.00609	mg/L per period
Lower Confidence Limit of Slope, M1:	-.00771	mg/L per period
Upper Confidence Limit of Slope, M2+1:	-.00431	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-3.90
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	Downward

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW23D	Parameter Code:	00950
Location Class:		Parameter:	Fluoride, dissolved
Location Type:		Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.000440	mg/L per period
R-Squared error of fit:	0.0687	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-1.56
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW23D	Parameter Code:	01000
Location Class:		Parameter:	Arsenic, dissolved
Location Type:		Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-.0000000214	mg/L per period
R-Squared error of fit:	0.0000698	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	-.000000430	mg/L per period
Lower Confidence Limit of Slope, M1:	-.00000102	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.000000235	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-1.08
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW23D	Parameter Code:	01005
Location Class:		Parameter:	Barium, dissolved
Location Type:		Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.00000408	mg/L per period
R-Squared error of fit:	0.230	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.00000298	mg/L per period
Lower Confidence Limit of Slope, M1:	0.00000107	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.00000476	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	2.54
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	Upward

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW23D	Parameter Code:	01010
Location Class:		Parameter:	Beryllium, dissolved
Location Type:		Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.00000000000000	mg/L per period
R-Squared error of fit:	0.00000000000000	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW23D	Parameter Code:	01020
Location Class:		Parameter:	Boron, dissolved
Location Type:		Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.000282	mg/L per period
R-Squared error of fit:	0.0140	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	1.35
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW23D	Parameter Code:	01025
Location Class:		Parameter:	Cadmium, dissolved
Location Type:		Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-.0000000486	mg/L per period
R-Squared error of fit:	0.0145	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-.485
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW23D	Parameter Code:	01030
Location Class:		Parameter:	Chromium, dissolved
Location Type:		Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.00000000672	mg/L per period
R-Squared error of fit:	0.00103	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-0.0693
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW23D	Parameter Code:	01035
Location Class:		Parameter:	Cobalt, dissolved
Location Type:		Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.0000493	mg/L per period
R-Squared error of fit:	0.0251	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-2.17
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

**Hutsonville Ash Impoundment
Mann-Kendall Trend Analysis**

User Supplied Information

Location ID:	MW23D	Parameter Code:	01040
Location Class:		Parameter:	Copper, dissolved
Location Type:		Units:	mg/L
Confidence Level:	95.00%		
Date Range: 01/01/2013 to 12/31/2023			

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.00000000000000	mg/L per period
R-Squared error of fit:	0.00000000000000	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW23D	Parameter Code:	01046
Location Class:		Parameter:	Iron, dissolved
Location Type:		Units:	mg/L
Confidence Level:	95.00%		
Date Range: 01/01/2013 to 12/31/2023			

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.00265	mg/L per period
R-Squared error of fit:	0.0162	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	-0.000135	mg/L per period
Lower Confidence Limit of Slope, M1:	-0.000345	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.00000715	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-1.38
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW23D	Parameter Code:	01049
Location Class:		Parameter:	Lead, dissolved
Location Type:		Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-.0000000360	mg/L per period
R-Squared error of fit:	0.0145	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-.485
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW23D	Parameter Code:	01056
Location Class:		Parameter:	Manganese, dissolved
Location Type:		Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.000316	mg/L per period
R-Squared error of fit:	0.0156	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	-0.00000910	mg/L per period
Lower Confidence Limit of Slope, M1:	-0.0000200	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.00000267	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-1.24
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW23D	Parameter Code:	01057
Location Class:		Parameter:	Thallium, dissolved
Location Type:		Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.00000000000000	mg/L per period
R-Squared error of fit:	0.00000000000000	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW23D	Parameter Code:	01065
Location Class:		Parameter:	Nickel, dissolved
Location Type:		Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line			
Slope (fitted to data):	-0.0000183	mg/L per period	
R-Squared error of fit:	0.0176		
Sen's Non-parametric estimate of the slope (two-tailed test)			
Median Slope:	0.0	mg/L per period	
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period	
Upper Confidence Limit of Slope, M2+1:	0.000000111	mg/L per period	
Non-parametric Mann-Kendall Test for Trend			
S Statistic:		0.693	
Z test:		1.64	
At the 95.0 % Confidence Level (two-tailed test):		None	

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW23D	Parameter Code:	01075
Location Class:		Parameter:	Silver, dissolved
Location Type:		Units:	mg/L
Confidence Level:	95.00%		
Date Range: 01/01/2013 to 12/31/2023			

Trend Analysis

Trend of the least squares straight line			
Slope (fitted to data):	0.00000000000000	mg/L per period	
R-Squared error of fit:	0.00000000000000		
Sen's Non-parametric estimate of the slope (two-tailed test)			
Median Slope:	0.0	mg/L per period	
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period	
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period	
Non-parametric Mann-Kendall Test for Trend			
S Statistic:		0.0	
Z test:		1.64	
At the 95.0 % Confidence Level (two-tailed test):		None	

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW23D	Parameter Code:	01090
Location Class:		Parameter:	Zinc, dissolved
Location Type:		Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.00000666	mg/L per period
R-Squared error of fit:	0.0145	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-0.485
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW23D	Parameter Code:	01095
Location Class:		Parameter:	Antimony, dissolved
Location Type:		Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.00000000000000	mg/L per period
R-Squared error of fit:	0.00000000000000	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW23D	Parameter Code:	01145
Location Class:		Parameter:	Selenium, dissolved
Location Type:		Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.00000162	mg/L per period
R-Squared error of fit:	0.0145	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-0.485
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW23D	Parameter Code:	71890
Location Class:		Parameter:	Mercury, dissolved
Location Type:		Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.000000000000	mg/L per period
R-Squared error of fit:	0.000000000000	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW23S	Parameter Code:	00515
Location Class:		Parameter:	Total Dissolved Solids
Location Type:		Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.0513	mg/L per period
R-Squared error of fit:	0.00401	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	-0.00107	mg/L per period
Lower Confidence Limit of Slope, M1:	-0.0281	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0357	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-0.0234
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW23S	Parameter Code:	00618
Location Class:		Parameter:	Nitrate nitrogen, dissolved
Location Type:		Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.0000823	mg/L per period
R-Squared error of fit:	0.224	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	-0.0000530	mg/L per period
Lower Confidence Limit of Slope, M1:	-0.000126	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-2.36
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	Downward

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW23S	Parameter Code:	00720
Location Class:		Parameter:	Cyanide, total
Location Type:		Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.00000319	mg/L per period
R-Squared error of fit:	0.208	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	3.35
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW23S	Parameter Code:	00941
Location Class:		Parameter:	Chloride, dissolved
Location Type:		Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.000336	mg/L per period
R-Squared error of fit:	0.00790	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	-0.000824	mg/L per period
Lower Confidence Limit of Slope, M1:	-0.00111	mg/L per period
Upper Confidence Limit of Slope, M2+1:	-0.000390	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-2.64
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	Downward

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW23S	Parameter Code:	00946
Location Class:		Parameter:	Sulfate, dissolved
Location Type:		Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.0794	mg/L per period
R-Squared error of fit:	0.0168	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	-0.00586	mg/L per period
Lower Confidence Limit of Slope, M1:	-0.00659	mg/L per period
Upper Confidence Limit of Slope, M2+1:	-0.00496	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-5.70
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	Downward

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW23S	Parameter Code:	00950
Location Class:		Parameter:	Fluoride, dissolved
Location Type:		Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.0000609	mg/L per period
R-Squared error of fit:	0.0437	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-1.35
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW23S	Parameter Code:	01000
Location Class:		Parameter:	Arsenic, dissolved
Location Type:		Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.00000322	mg/L per period
R-Squared error of fit:	0.0145	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-0.485
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW23S	Parameter Code:	01005
Location Class:		Parameter:	Barium, dissolved
Location Type:		Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.00000531	mg/L per period
R-Squared error of fit:	0.203	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.00000464	mg/L per period
Lower Confidence Limit of Slope, M1:	0.00000109	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.00000768	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	2.02
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	Upward

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW23S	Parameter Code:	01010
Location Class:		Parameter:	Beryllium, dissolved
Location Type:		Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.00000259	mg/L per period
R-Squared error of fit:	0.0145	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-0.485
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW23S	Parameter Code:	01020
Location Class:		Parameter:	Boron, dissolved
Location Type:		Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.000188	mg/L per period
R-Squared error of fit:	0.0154	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	-0.0000140	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-0.810
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW23S	Parameter Code:	01025
Location Class:		Parameter:	Cadmium, dissolved
Location Type:		Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.00000175	mg/L per period
R-Squared error of fit:	0.0145	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-0.485
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW23S	Parameter Code:	01030
Location Class:		Parameter:	Chromium, dissolved
Location Type:		Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.00000000661	mg/L per period
R-Squared error of fit:	0.000520	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-0.0501
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW23S	Parameter Code:	01035
Location Class:		Parameter:	Cobalt, dissolved
Location Type:		Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.0000324	mg/L per period
R-Squared error of fit:	0.0145	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-0.485
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW23S	Parameter Code:	01040
Location Class:		Parameter:	Copper, dissolved
Location Type:		Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.00000510	mg/L per period
R-Squared error of fit:	0.0344	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-0.800
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW23S	Parameter Code:	01046
Location Class:		Parameter:	Iron, dissolved
Location Type:		Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.00735	mg/L per period
R-Squared error of fit:	0.0145	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-0.636
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW23S	Parameter Code:	01049
Location Class:		Parameter:	Lead, dissolved
Location Type:		Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.00000593	mg/L per period
R-Squared error of fit:	0.0350	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-0.900
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW23S	Parameter Code:	01056
Location Class:		Parameter:	Manganese, dissolved
Location Type:		Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.000514	mg/L per period
R-Squared error of fit:	0.0163	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	-0.0000136	mg/L per period
Lower Confidence Limit of Slope, M1:	-0.0000280	mg/L per period
Upper Confidence Limit of Slope, M2+1:	-0.00000190	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-2.32
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	Downward

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW23S	Parameter Code:	01057
Location Class:		Parameter:	Thallium, dissolved
Location Type:		Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-.0000000942	mg/L per period
R-Squared error of fit:	0.0196	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-0.624
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW23S	Parameter Code:	01065
Location Class:		Parameter:	Nickel, dissolved
Location Type:		Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-.00000448	mg/L per period
R-Squared error of fit:	0.0160	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	-.000000140	mg/L per period
Lower Confidence Limit of Slope, M1:	-.000000310	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-1.75
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW23S	Parameter Code:	01075
Location Class:		Parameter:	Silver, dissolved
Location Type:		Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.00000000000000	mg/L per period
R-Squared error of fit:	0.00000000000000	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW23S	Parameter Code:	01090
Location Class:		Parameter:	Zinc, dissolved
Location Type:		Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.000214	mg/L per period
R-Squared error of fit:	0.0145	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-0.485
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW23S	Parameter Code:	01095
Location Class:		Parameter:	Antimony, dissolved
Location Type:		Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.00000000000000	mg/L per period
R-Squared error of fit:	0.00000000000000	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.0
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW23S	Parameter Code:	01145
Location Class:		Parameter:	Selenium, dissolved
Location Type:		Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.00000162	mg/L per period
R-Squared error of fit:	0.0145	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-0.485
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW23S	Parameter Code:	71890
Location Class:		Parameter:	Mercury, dissolved
Location Type:		Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-.0000000377	mg/L per period
R-Squared error of fit:	0.0196	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-0.624
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW6	Parameter Code:	00515
Location Class:	Downgradient	Parameter:	Total Dissolved Solids
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.0963	mg/L per period
R-Squared error of fit:	0.202	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	-.0985	mg/L per period
Lower Confidence Limit of Slope, M1:	-.173	mg/L per period
Upper Confidence Limit of Slope, M2+1:	-.0285	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-2.44
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	Downward

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW6	Parameter Code:	00618
Location Class:	Downgradient	Parameter:	Nitrate nitrogen, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.00176	mg/L per period
R-Squared error of fit:	0.461	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	-0.00165	mg/L per period
Lower Confidence Limit of Slope, M1:	-0.00235	mg/L per period
Upper Confidence Limit of Slope, M2+1:	-0.000793	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-3.76
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	Downward

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW6	Parameter Code:	00720
Location Class:	Downgradient	Parameter:	Cyanide, total
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.00000310	mg/L per period
R-Squared error of fit:	0.667	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.00000310	mg/L per period
Lower Confidence Limit of Slope, M1:	0.00000166	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.00000359	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	5.09
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	Upward

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW6	Parameter Code:	00941
Location Class:	Downgradient	Parameter:	Chloride, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.00221	mg/L per period
R-Squared error of fit:	0.404	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	-0.00222	mg/L per period
Lower Confidence Limit of Slope, M1:	-0.00310	mg/L per period
Upper Confidence Limit of Slope, M2+1:	-0.00133	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-3.86
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	Downward

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW6	Parameter Code:	00946
Location Class:	Downgradient	Parameter:	Sulfate, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.0613	mg/L per period
R-Squared error of fit:	0.323	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	-.0667	mg/L per period
Lower Confidence Limit of Slope, M1:	-.100	mg/L per period
Upper Confidence Limit of Slope, M2+1:	-.0290	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-3.10
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	Downward

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW6	Parameter Code:	00950
Location Class:	Downgradient	Parameter:	Fluoride, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.00000138	mg/L per period
R-Squared error of fit:	0.000292	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	-.0000163	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-0.587
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW6	Parameter Code:	01000
Location Class:	Downgradient	Parameter:	Arsenic, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0000000441	mg/L per period
R-Squared error of fit:	0.0164	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0000000825	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	3.17
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW6	Parameter Code:	01005
Location Class:	Downgradient	Parameter:	Barium, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.00000207	mg/L per period
R-Squared error of fit:	0.0354	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.00000202	mg/L per period
Lower Confidence Limit of Slope, M1:	-.000000607	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.00000430	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	1.20
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW6	Parameter Code:	01010
Location Class:	Downgradient	Parameter:	Beryllium, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.000000359	mg/L per period
R-Squared error of fit:	0.738	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.000000333	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	4.86
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW6	Parameter Code:	01020
Location Class:	Downgradient	Parameter:	Boron, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.00165	mg/L per period
R-Squared error of fit:	0.365	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	-0.00118	mg/L per period
Lower Confidence Limit of Slope, M1:	-0.00169	mg/L per period
Upper Confidence Limit of Slope, M2+1:	-0.000654	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-3.98
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	Downward

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW6	Parameter Code:	01025
Location Class:	Downgradient	Parameter:	Cadmium, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0000000897	mg/L per period
R-Squared error of fit:	0.738	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0000000833	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	4.86
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW6	Parameter Code:	01030
Location Class:	Downgradient	Parameter:	Chromium, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.00000236	mg/L per period
R-Squared error of fit:	0.0136	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.000000119	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	2.17
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW6	Parameter Code:	01035
Location Class:	Downgradient	Parameter:	Cobalt, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.000000359	mg/L per period
R-Squared error of fit:	0.738	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.000000333	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	4.86
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW6	Parameter Code:	01040
Location Class:	Downgradient	Parameter:	Copper, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-.0000000616	mg/L per period
R-Squared error of fit:	0.0118	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	1.17
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW6	Parameter Code:	01046
Location Class:	Downgradient	Parameter:	Iron, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-.000172	mg/L per period
R-Squared error of fit:	0.397	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	-.000141	mg/L per period
Lower Confidence Limit of Slope, M1:	-.000207	mg/L per period
Upper Confidence Limit of Slope, M2+1:	-.0000303	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-3.17
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	Downward

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW6	Parameter Code:	01049
Location Class:	Downgradient	Parameter:	Lead, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.000000298	mg/L per period
R-Squared error of fit:	0.437	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.000000311	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	4.05
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW6	Parameter Code:	01056
Location Class:	Downgradient	Parameter:	Manganese, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range: 01/01/2013 to 12/31/2023			

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.000399	mg/L per period
R-Squared error of fit:	0.169	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	-0.000121	mg/L per period
Lower Confidence Limit of Slope, M1:	-0.000309	mg/L per period
Upper Confidence Limit of Slope, M2+1:	-.00000994	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-2.31
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	Downward

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW6	Parameter Code:	01057
Location Class:	Downgradient	Parameter:	Thallium, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0000000897	mg/L per period
R-Squared error of fit:	0.738	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0000000833	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	4.86
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW6	Parameter Code:	01065
Location Class:	Downgradient	Parameter:	Nickel, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range: 01/01/2013 to 12/31/2023			

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.0000234	mg/L per period
R-Squared error of fit:	0.251	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	-0.00000571	mg/L per period
Lower Confidence Limit of Slope, M1:	-0.00000175	mg/L per period
Upper Confidence Limit of Slope, M2+1:	-0.00000152	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-2.44
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	Downward

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW6	Parameter Code:	01075
Location Class:	Downgradient	Parameter:	Silver, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0000000897	mg/L per period
R-Squared error of fit:	0.738	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0000000833	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	4.86
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW6	Parameter Code:	01090
Location Class:	Downgradient	Parameter:	Zinc, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.000000386	mg/L per period
R-Squared error of fit:	0.00724	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.00000116	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	2.82
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	Upward

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW6	Parameter Code:	01095
Location Class:	Downgradient	Parameter:	Antimony, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.000000627	mg/L per period
R-Squared error of fit:	0.544	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.000000622	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	4.05
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW6	Parameter Code:	01145
Location Class:	Downgradient	Parameter:	Selenium, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.00000166	mg/L per period
R-Squared error of fit:	0.00507	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.000000314	mg/L per period
Lower Confidence Limit of Slope, M1:	-0.000000151	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.000000729	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	1.07
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW6	Parameter Code:	71890
Location Class:	Downgradient	Parameter:	Mercury, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range: 01/01/2013 to 12/31/2023			

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0000000105	mg/L per period
R-Squared error of fit:	0.00680	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0000000311	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	4.08
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW7	Parameter Code:	00515
Location Class:	Downgradient	Parameter:	Total Dissolved Solids
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range: 01/01/2013 to 12/31/2023			

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.0620	mg/L per period
R-Squared error of fit:	0.119	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	-.0719	mg/L per period
Lower Confidence Limit of Slope, M1:	-.112	mg/L per period
Upper Confidence Limit of Slope, M2+1:	-.0304	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-2.82
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	Downward

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW7	Parameter Code:	00618
Location Class:	Downgradient	Parameter:	Nitrate nitrogen, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range: 01/01/2013 to 12/31/2023			

Trend Analysis

Trend of the least squares straight line			
Slope (fitted to data):	-.0000799	mg/L per period	
R-Squared error of fit:	0.0396		
Sen's Non-parametric estimate of the slope (two-tailed test)			
Median Slope:	-.0000798	mg/L per period	
Lower Confidence Limit of Slope, M1:	-.000180	mg/L per period	
Upper Confidence Limit of Slope, M2+1:	0.0000268	mg/L per period	
Non-parametric Mann-Kendall Test for Trend			
S Statistic:		-1.32	
Z test:		1.64	
At the 95.0 % Confidence Level (two-tailed test):		None	

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW7	Parameter Code:	00720
Location Class:	Downgradient	Parameter:	Cyanide, total
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.00000182	mg/L per period
R-Squared error of fit:	0.0838	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.00000307	mg/L per period
Lower Confidence Limit of Slope, M1:	0.00000222	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.00000355	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	5.36
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	Upward

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW7	Parameter Code:	00941
Location Class:	Downgradient	Parameter:	Chloride, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range: 01/01/2013 to 12/31/2023			

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.000468	mg/L per period
R-Squared error of fit:	0.0205	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.000364	mg/L per period
Lower Confidence Limit of Slope, M1:	-.000589	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.00119	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.476
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW7	Parameter Code:	00946
Location Class:	Downgradient	Parameter:	Sulfate, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.0344	mg/L per period
R-Squared error of fit:	0.196	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	-0.0341	mg/L per period
Lower Confidence Limit of Slope, M1:	-0.0546	mg/L per period
Upper Confidence Limit of Slope, M2+1:	-0.0174	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-3.02
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	Downward

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW7	Parameter Code:	00950
Location Class:	Downgradient	Parameter:	Fluoride, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.000265	mg/L per period
R-Squared error of fit:	0.0143	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	1.24
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW7	Parameter Code:	01000
Location Class:	Downgradient	Parameter:	Arsenic, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.00000234	mg/L per period
R-Squared error of fit:	0.0515	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.000000679	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	3.60
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW7	Parameter Code:	01005
Location Class:	Downgradient	Parameter:	Barium, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range: 01/01/2013 to 12/31/2023			

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.0000185	mg/L per period
R-Squared error of fit:	0.0477	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	-0.0000219	mg/L per period
Lower Confidence Limit of Slope, M1:	-0.0000440	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-1.76
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	Downward

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW7	Parameter Code:	01010
Location Class:	Downgradient	Parameter:	Beryllium, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.000000345	mg/L per period
R-Squared error of fit:	0.698	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.000000311	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	5.45
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW7	Parameter Code:	01020
Location Class:	Downgradient	Parameter:	Boron, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-.000286	mg/L per period
R-Squared error of fit:	0.151	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	-.000173	mg/L per period
Lower Confidence Limit of Slope, M1:	-.000231	mg/L per period
Upper Confidence Limit of Slope, M2+1:	-.000100	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-3.94
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	Downward

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW7	Parameter Code:	01025
Location Class:	Downgradient	Parameter:	Cadmium, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0000000864	mg/L per period
R-Squared error of fit:	0.698	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0000000779	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	5.45
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW7	Parameter Code:	01030
Location Class:	Downgradient	Parameter:	Chromium, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range: 01/01/2013 to 12/31/2023			

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.00000804	mg/L per period
R-Squared error of fit:	0.0801	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	1.17
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW7	Parameter Code:	01035
Location Class:	Downgradient	Parameter:	Cobalt, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.000000345	mg/L per period
R-Squared error of fit:	0.698	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.000000311	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	5.45
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW7	Parameter Code:	01040
Location Class:	Downgradient	Parameter:	Copper, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-.0000000803	mg/L per period
R-Squared error of fit:	0.0114	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	2.75
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW7	Parameter Code:	01046
Location Class:	Downgradient	Parameter:	Iron, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.000192	mg/L per period
R-Squared error of fit:	0.421	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	-0.0000530	mg/L per period
Lower Confidence Limit of Slope, M1:	-0.000184	mg/L per period
Upper Confidence Limit of Slope, M2+1:	-0.00000830	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-3.11
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	Downward

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW7	Parameter Code:	01049
Location Class:	Downgradient	Parameter:	Lead, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.000000294	mg/L per period
R-Squared error of fit:	0.446	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.000000290	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	4.68
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW7	Parameter Code:	01056
Location Class:	Downgradient	Parameter:	Manganese, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.0000140	mg/L per period
R-Squared error of fit:	0.142	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	-0.00000260	mg/L per period
Lower Confidence Limit of Slope, M1:	-0.00000733	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-1.41
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW7	Parameter Code:	01057
Location Class:	Downgradient	Parameter:	Thallium, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-.0000000145	mg/L per period
R-Squared error of fit:	0.00148	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0000000730	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	4.56
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW7	Parameter Code:	01065
Location Class:	Downgradient	Parameter:	Nickel, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range: 01/01/2013 to 12/31/2023			

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.0000421	mg/L per period
R-Squared error of fit:	0.103	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	-0.00000141	mg/L per period
Lower Confidence Limit of Slope, M1:	-0.00000561	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-1.20
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW7	Parameter Code:	01075
Location Class:	Downgradient	Parameter:	Silver, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0000000864	mg/L per period
R-Squared error of fit:	0.698	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0000000779	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	5.45
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW7	Parameter Code:	01090
Location Class:	Downgradient	Parameter:	Zinc, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.000000319	mg/L per period
R-Squared error of fit:	0.00487	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	2.89
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW7	Parameter Code:	01095
Location Class:	Downgradient	Parameter:	Antimony, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.000000536	mg/L per period
R-Squared error of fit:	0.283	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.000000581	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	4.68
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW7	Parameter Code:	01145
Location Class:	Downgradient	Parameter:	Selenium, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.000000269	mg/L per period
R-Squared error of fit:	0.0523	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.000000215	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.000000393	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	2.33
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW7	Parameter Code:	71890
Location Class:	Downgradient	Parameter:	Mercury, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0000000345	mg/L per period
R-Squared error of fit:	0.698	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0000000311	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	5.45
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW7D	Parameter Code:	00515
Location Class:	Background	Parameter:	Total Dissolved Solids
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range: 01/01/2013 to 12/31/2023			

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.0449	mg/L per period
R-Squared error of fit:	0.0762	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	-.0493	mg/L per period
Lower Confidence Limit of Slope, M1:	-.0878	mg/L per period
Upper Confidence Limit of Slope, M2+1:	-.00987	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-2.02
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	Downward

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW7D	Parameter Code:	00618
Location Class:	Background	Parameter:	Nitrate nitrogen, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.0000613	mg/L per period
R-Squared error of fit:	0.0249	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0000273	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	2.07
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	Upward

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW7D	Parameter Code:	00720
Location Class:	Background	Parameter:	Cyanide, total
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.0000162	mg/L per period
R-Squared error of fit:	0.00744	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.00000292	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.00000346	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	5.14
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	Upward

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW7D	Parameter Code:	00941
Location Class:	Background	Parameter:	Chloride, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range: 01/01/2013 to 12/31/2023			

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.00156	mg/L per period
R-Squared error of fit:	0.112	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	-0.00141	mg/L per period
Lower Confidence Limit of Slope, M1:	-0.00240	mg/L per period
Upper Confidence Limit of Slope, M2+1:	-0.000476	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-2.26
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	Downward

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW7D	Parameter Code:	00946
Location Class:	Background	Parameter:	Sulfate, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range: 01/01/2013 to 12/31/2023			

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.0111	mg/L per period
R-Squared error of fit:	0.0423	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	-0.00914	mg/L per period
Lower Confidence Limit of Slope, M1:	-0.0217	mg/L per period
Upper Confidence Limit of Slope, M2+1:	-0.00154	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-2.13
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	Downward

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW7D	Parameter Code:	00950
Location Class:	Background	Parameter:	Fluoride, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range: 01/01/2013 to 12/31/2023			

Trend Analysis

Trend of the least squares straight line			
Slope (fitted to data):	-.00000655	mg/L per period	
R-Squared error of fit:	0.00513		
Sen's Non-parametric estimate of the slope (two-tailed test)			
Median Slope:	0.0	mg/L per period	
Lower Confidence Limit of Slope, M1:	-.0000147	mg/L per period	
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period	
Non-parametric Mann-Kendall Test for Trend			
S Statistic:		-1.13	
Z test:		1.64	
At the 95.0 % Confidence Level (two-tailed test):		None	

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW7D	Parameter Code:	01000
Location Class:	Background	Parameter:	Arsenic, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range: 01/01/2013 to 12/31/2023			

Trend Analysis

Trend of the least squares straight line			
Slope (fitted to data):	-.000000325	mg/L per period	
R-Squared error of fit:	0.0272		
Sen's Non-parametric estimate of the slope (two-tailed test)			
Median Slope:	0.0	mg/L per period	
Lower Confidence Limit of Slope, M1:	-.000000484	mg/L per period	
Upper Confidence Limit of Slope, M2+1:	0.000000255	mg/L per period	
Non-parametric Mann-Kendall Test for Trend			
S Statistic:		-.345	
Z test:		1.64	
At the 95.0 % Confidence Level (two-tailed test):		None	

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW7D	Parameter Code:	01005
Location Class:	Background	Parameter:	Barium, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.0000265	mg/L per period
R-Squared error of fit:	0.0502	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	-0.0000236	mg/L per period
Lower Confidence Limit of Slope, M1:	-0.0000476	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.00000396	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-1.34
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW7D	Parameter Code:	01010
Location Class:	Background	Parameter:	Beryllium, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.000000345	mg/L per period
R-Squared error of fit:	0.698	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.000000311	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	5.45
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW7D	Parameter Code:	01020
Location Class:	Background	Parameter:	Boron, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range: 01/01/2013 to 12/31/2023			

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-.000109	mg/L per period
R-Squared error of fit:	0.198	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	-.000101	mg/L per period
Lower Confidence Limit of Slope, M1:	-.000155	mg/L per period
Upper Confidence Limit of Slope, M2+1:	-.0000550	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-3.91
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	Downward

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW7D	Parameter Code:	01025
Location Class:	Background	Parameter:	Cadmium, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0000000839	mg/L per period
R-Squared error of fit:	0.682	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0000000731	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	5.22
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW7D	Parameter Code:	01030
Location Class:	Background	Parameter:	Chromium, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.0000162	mg/L per period
R-Squared error of fit:	0.0604	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	2.92
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW7D	Parameter Code:	01035
Location Class:	Background	Parameter:	Cobalt, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range: 01/01/2013 to 12/31/2023			

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.000000256	mg/L per period
R-Squared error of fit:	0.264	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.000000257	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	4.48
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW7D	Parameter Code:	01040
Location Class:	Background	Parameter:	Copper, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.00000316	mg/L per period
R-Squared error of fit:	0.0512	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	1.97
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW7D	Parameter Code:	01046
Location Class:	Background	Parameter:	Iron, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-.000456	mg/L per period
R-Squared error of fit:	0.263	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	-.000347	mg/L per period
Lower Confidence Limit of Slope, M1:	-.000492	mg/L per period
Upper Confidence Limit of Slope, M2+1:	-.000230	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-4.40
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	Downward

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW7D	Parameter Code:	01049
Location Class:	Background	Parameter:	Lead, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range: 01/01/2013 to 12/31/2023			

Trend Analysis

Trend of the least squares straight line			
Slope (fitted to data):	0.000000174	mg/L per period	
R-Squared error of fit:	0.0488		
Sen's Non-parametric estimate of the slope (two-tailed test)			
Median Slope:	0.0	mg/L per period	
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period	
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period	
Non-parametric Mann-Kendall Test for Trend			
S Statistic:		4.38	
Z test:		1.64	
At the 95.0 % Confidence Level (two-tailed test):		None	

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW7D	Parameter Code:	01056
Location Class:	Background	Parameter:	Manganese, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range: 01/01/2013 to 12/31/2023			

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-.000158	mg/L per period
R-Squared error of fit:	0.132	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	-.000140	mg/L per period
Lower Confidence Limit of Slope, M1:	-.000194	mg/L per period
Upper Confidence Limit of Slope, M2+1:	-.0000551	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-3.07
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	Downward

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW7D	Parameter Code:	01057
Location Class:	Background	Parameter:	Thallium, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0000000864	mg/L per period
R-Squared error of fit:	0.698	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0000000779	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	5.45
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW7D	Parameter Code:	01065
Location Class:	Background	Parameter:	Nickel, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range: 01/01/2013 to 12/31/2023			

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.00000841	mg/L per period
R-Squared error of fit:	0.0770	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	-0.00000629	mg/L per period
Lower Confidence Limit of Slope, M1:	-0.00000969	mg/L per period
Upper Confidence Limit of Slope, M2+1:	-0.00000397	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-4.29
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	Downward

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW7D	Parameter Code:	01075
Location Class:	Background	Parameter:	Silver, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0000000864	mg/L per period
R-Squared error of fit:	0.698	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0000000779	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	5.45
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW7D	Parameter Code:	01090
Location Class:	Background	Parameter:	Zinc, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range: 01/01/2013 to 12/31/2023			

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.0000105	mg/L per period
R-Squared error of fit:	0.0191	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	2.48
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW7D	Parameter Code:	01095
Location Class:	Background	Parameter:	Antimony, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.000000691	mg/L per period
R-Squared error of fit:	0.698	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.000000623	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	5.45
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW7D	Parameter Code:	01145
Location Class:	Background	Parameter:	Selenium, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.000000161	mg/L per period
R-Squared error of fit:	0.134	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.000000165	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	4.55
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW7D	Parameter Code:	71890
Location Class:	Background	Parameter:	Mercury, dissolved
Location Type:	Alluvial Aq.	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0000000345	mg/L per period
R-Squared error of fit:	0.698	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0000000311	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	5.45
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW8	Parameter Code:	00515
Location Class:	Downgradient	Parameter:	Total Dissolved Solids
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range: 01/01/2013 to 12/31/2023			

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-.0365	mg/L per period
R-Squared error of fit:	0.0651	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	-.0371	mg/L per period
Lower Confidence Limit of Slope, M1:	-.0722	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-1.58	
Z test:	1.64	
At the 95.0 % Confidence Level (two-tailed test):		None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW8	Parameter Code:	00618
Location Class:	Downgradient	Parameter:	Nitrate nitrogen, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0000122	mg/L per period
R-Squared error of fit:	0.0241	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.00000114	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0000290	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	2.75
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	Upward

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW8	Parameter Code:	00720
Location Class:	Downgradient	Parameter:	Cyanide, total
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.00000354	mg/L per period
R-Squared error of fit:	0.531	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.00000318	mg/L per period
Lower Confidence Limit of Slope, M1:	0.00000253	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.00000370	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	5.94
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	Upward

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW8	Parameter Code:	00941
Location Class:	Downgradient	Parameter:	Chloride, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range: 01/01/2013 to 12/31/2023			

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-.000122	mg/L per period
R-Squared error of fit:	0.0104	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	-.000174	mg/L per period
Lower Confidence Limit of Slope, M1:	-.000519	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.000129	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-1.00
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW8	Parameter Code:	00946
Location Class:	Downgradient	Parameter:	Sulfate, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range: 01/01/2013 to 12/31/2023			

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.0107	mg/L per period
R-Squared error of fit:	0.00936	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	-0.0165	mg/L per period
Lower Confidence Limit of Slope, M1:	-0.0420	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.00944	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-1.07
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW8	Parameter Code:	00950
Location Class:	Downgradient	Parameter:	Fluoride, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0000251	mg/L per period
R-Squared error of fit:	0.275	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.00000501	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	4.22
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	Upward

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW8	Parameter Code:	01000
Location Class:	Downgradient	Parameter:	Arsenic, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0000000294	mg/L per period
R-Squared error of fit:	0.00139	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0000000761	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	2.94
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW8	Parameter Code:	01005
Location Class:	Downgradient	Parameter:	Barium, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range: 01/01/2013 to 12/31/2023			

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.0000272	mg/L per period
R-Squared error of fit:	0.455	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	-0.0000222	mg/L per period
Lower Confidence Limit of Slope, M1:	-0.0000306	mg/L per period
Upper Confidence Limit of Slope, M2+1:	-0.0000155	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-4.67
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	Downward

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW8	Parameter Code:	01010
Location Class:	Downgradient	Parameter:	Beryllium, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.000000345	mg/L per period
R-Squared error of fit:	0.698	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.000000311	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	5.45
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW8	Parameter Code:	01020
Location Class:	Downgradient	Parameter:	Boron, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.000202	mg/L per period
R-Squared error of fit:	0.00605	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.000129	mg/L per period
Lower Confidence Limit of Slope, M1:	-.000361	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.000455	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.395
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW8	Parameter Code:	01025
Location Class:	Downgradient	Parameter:	Cadmium, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0000000864	mg/L per period
R-Squared error of fit:	0.698	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0000000779	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	5.45
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW8	Parameter Code:	01030
Location Class:	Downgradient	Parameter:	Chromium, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.00000206	mg/L per period
R-Squared error of fit:	0.0140	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.00000254	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	3.22
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW8	Parameter Code:	01035
Location Class:	Downgradient	Parameter:	Cobalt, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.000000332	mg/L per period
R-Squared error of fit:	0.229	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.000000318	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	5.10
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW8	Parameter Code:	01040
Location Class:	Downgradient	Parameter:	Copper, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range: 01/01/2013 to 12/31/2023			

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.000000467	mg/L per period
R-Squared error of fit:	0.0139	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	1.57
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW8	Parameter Code:	01046
Location Class:	Downgradient	Parameter:	Iron, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range: 01/01/2013 to 12/31/2023			

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.000555	mg/L per period
R-Squared error of fit:	0.543	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	-0.000391	mg/L per period
Lower Confidence Limit of Slope, M1:	-0.000533	mg/L per period
Upper Confidence Limit of Slope, M2+1:	-0.000213	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-5.79
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	Downward

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW8	Parameter Code:	01049
Location Class:	Downgradient	Parameter:	Lead, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range: 01/01/2013 to 12/31/2023			

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.000000239	mg/L per period
R-Squared error of fit:	0.191	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.000000265	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	3.67
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW8	Parameter Code:	01056
Location Class:	Downgradient	Parameter:	Manganese, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-.000789	mg/L per period
R-Squared error of fit:	0.454	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	-.000801	mg/L per period
Lower Confidence Limit of Slope, M1:	-.00103	mg/L per period
Upper Confidence Limit of Slope, M2+1:	-.000507	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-3.86
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	Downward

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW8	Parameter Code:	01057
Location Class:	Downgradient	Parameter:	Thallium, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range: 01/01/2013 to 12/31/2023			

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0000000621	mg/L per period
R-Squared error of fit:	0.178	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0000000726	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	4.70
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW8	Parameter Code:	01065
Location Class:	Downgradient	Parameter:	Nickel, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range: 01/01/2013 to 12/31/2023			

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.0000237	mg/L per period
R-Squared error of fit:	0.213	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	-0.00000801	mg/L per period
Lower Confidence Limit of Slope, M1:	-0.00000271	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.000000247	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	-1.11
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW8	Parameter Code:	01075
Location Class:	Downgradient	Parameter:	Silver, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.0000000864	mg/L per period
R-Squared error of fit:	0.698	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0000000779	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	5.45
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW8	Parameter Code:	01090
Location Class:	Downgradient	Parameter:	Zinc, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.0000177	mg/L per period
R-Squared error of fit:	0.0422	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	0.601
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW8	Parameter Code:	01095
Location Class:	Downgradient	Parameter:	Antimony, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	0.000000691	mg/L per period
R-Squared error of fit:	0.698	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.000000623	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	5.45
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW8	Parameter Code:	01145
Location Class:	Downgradient	Parameter:	Selenium, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.00000557	mg/L per period
R-Squared error of fit:	0.0537	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	2.37
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None

Hutsonville Ash Impoundment Mann-Kendall Trend Analysis

User Supplied Information

Location ID:	MW8	Parameter Code:	71890
Location Class:	Downgradient	Parameter:	Mercury, dissolved
Location Type:	Upper Zone	Units:	mg/L
Confidence Level:	95.00%		
Date Range:	01/01/2013 to 12/31/2023		

Trend Analysis

Trend of the least squares straight line

Slope (fitted to data):	-0.00000556	mg/L per period
R-Squared error of fit:	0.0391	

Sen's Non-parametric estimate of the slope (two-tailed test)

Median Slope:	0.0	mg/L per period
Lower Confidence Limit of Slope, M1:	0.0	mg/L per period
Upper Confidence Limit of Slope, M2+1:	0.0	mg/L per period

Non-parametric Mann-Kendall Test for Trend

S Statistic:	3.37
Z test:	1.64
At the 95.0 % Confidence Level (two-tailed test):	None